1.1 Significance of the LABS-2 Study

The Longitudinal Assessment of Bariatric Surgery (LABS): A National Institutes of Health (NIH)-funded consortium of six clinical centers and a data coordinating center working in cooperation with NIH scientific staff to plan, develop, and conduct coordinated clinical, epidemiological, and behavioral research in the field of bariatric surgery.

LABS-1 included all participants who were at least 18 years of age and who had undergone bariatric surgery by LABS certified surgeons during a 3 year period, with the primary goal of evaluating the short-term **safety** of bariatric surgery. Important adverse outcomes (i.e., death, re-hospitalization, re-intervention) occurring within 30 days of surgery were recorded to assess the relationship between short-term morbidity and mortality rates and various participant, operative, and post-surgical care characteristics. LABS-2, described in this Manual of Operations, had the primary goal of evaluating the longer-term **efficacy** of bariatric surgery. More extensive data collection (i.e. demographic, anthropometric, surgical, clinical, and behavioral) and longer follow-up allowed LABS-2 to identify longer-term safety and efficacy outcomes, both risks and benefits, and to determine their associations with participant, surgical, and post-surgical care characteristics. Finally, LABS-3 included selected subsets of participants from the LABS-2 cohort to conduct detailed studies of **mechanisms** involved in weight loss and weight gain, energy expenditure, glucose control, and other aspects of the pathophysiology of obesity and obesity-related complications.

1.2 LABS-2 Objectives

The primary objective of LABS-2 was to use standardized techniques and measures to assess the longer-term safety and efficacy of bariatric surgery by comparing post-surgical outcomes to pre-operative status and examining risks and benefits of surgery.

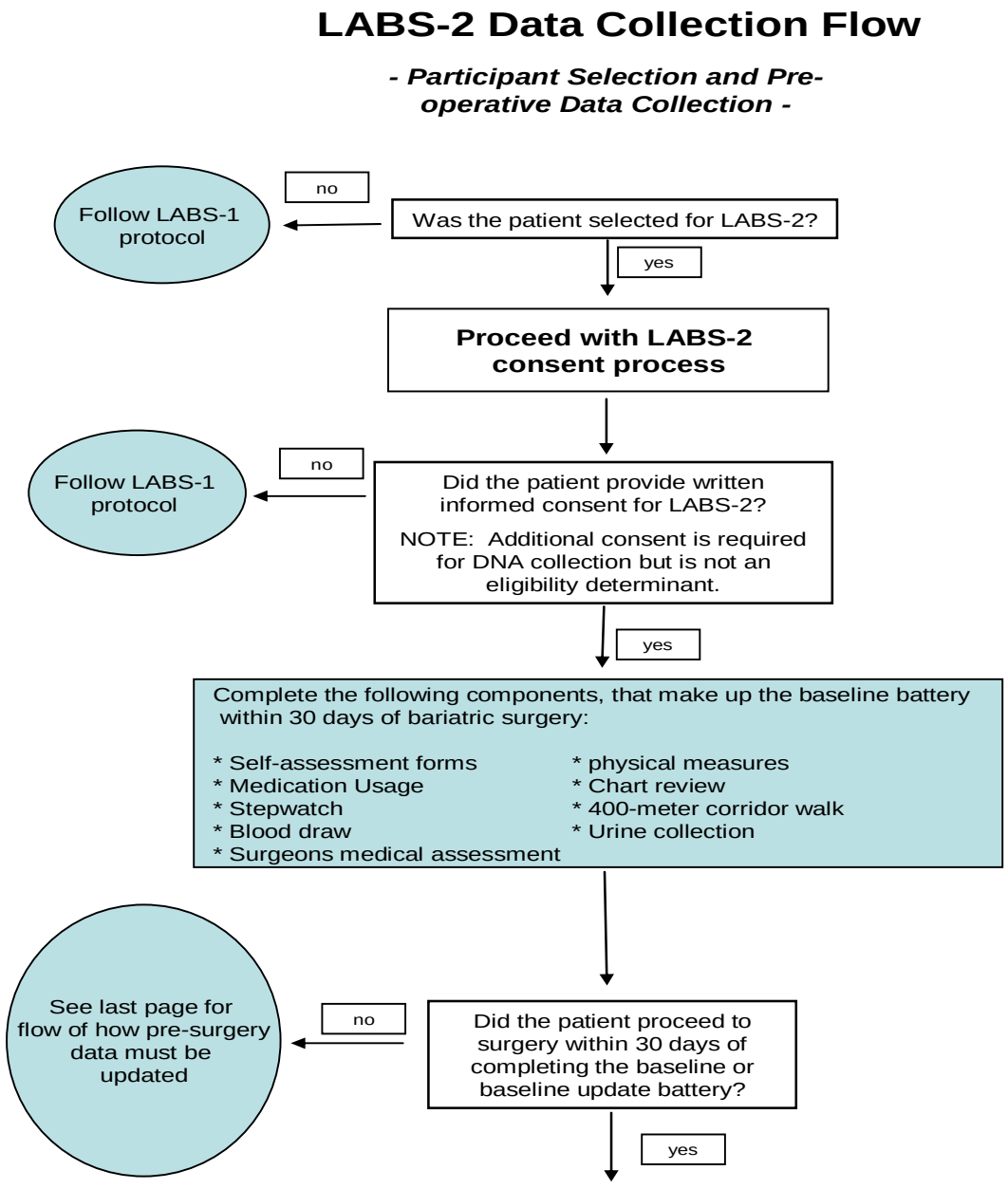
LABS-2 also strived to determine the associations between clinical/demographic participant characteristics, components of the surgical procedure, and peri-operative and post-operative care with post-operative risks and changes in participant status.

To address the primary objectives of LABS-2, specific research questions were developed in the following areas:

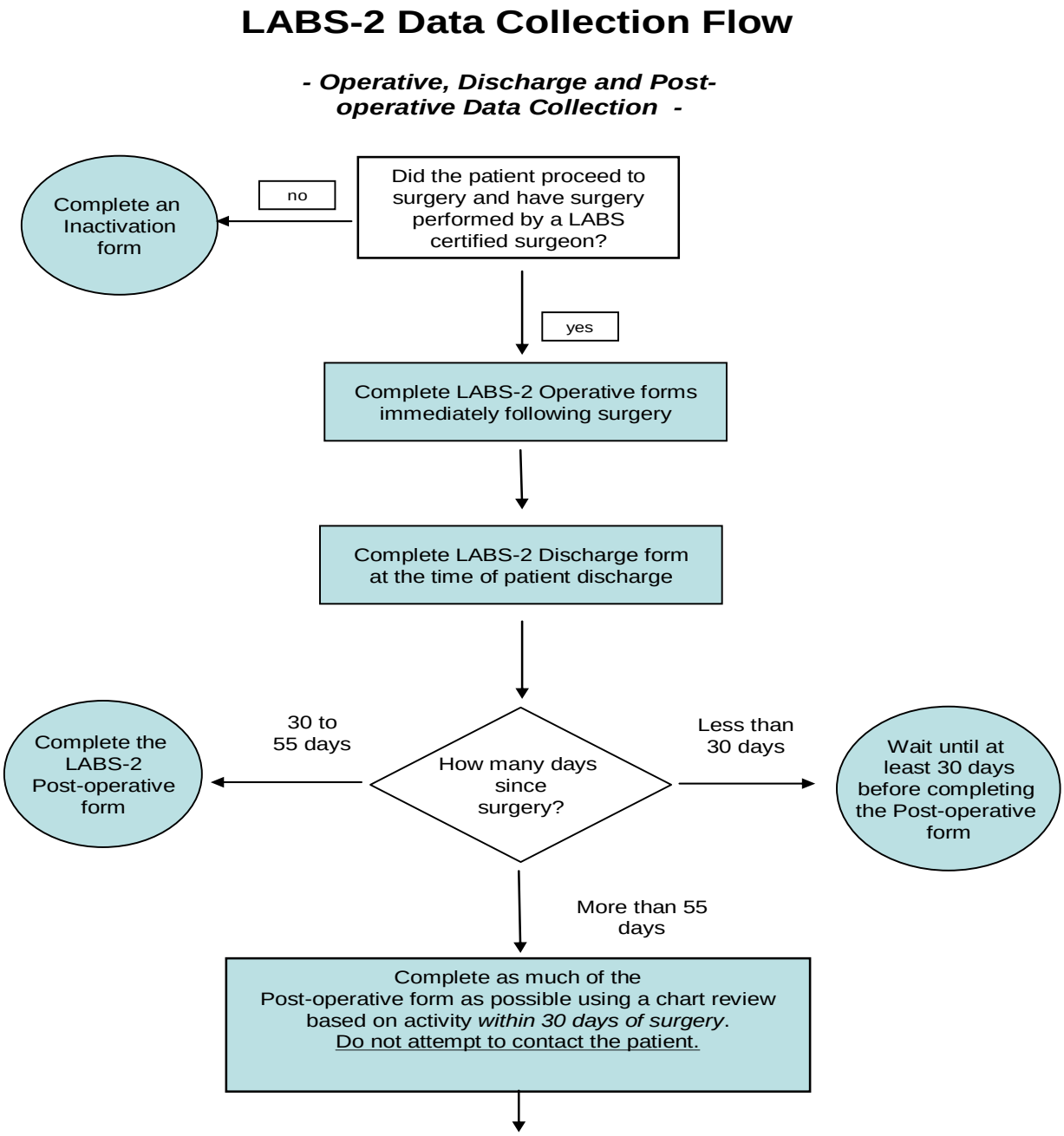
- *Weight Loss and Body Composition*
- *Diabetes Mellitus and Insulin Resistance*
- *Cardiovascular and Pulmonary Disease*
- *Renal Disease*
- *Liver Function and Size*
- *Behavioral Factors*
- *Gender Issues*
- *Women's Health*
- *Risks of Bariatric Surgery*
- *Nutrient Deficiencies*
- *Work Productivity and Activity*

The secondary objectives of LABS-2 were to assess health care utilization of participants undergoing bariatric surgery for treatment of obesity and related co-morbidities, and to obtain and store biospecimens (serum, plasma, urine) for research related to the aims of this study and for future research into the pathophysiology and genetics of obesity and obesity-related complications.

2.1 LABS-2 Data Collection Flow



2.1 LABS-2 Data Collection Flow (continued)



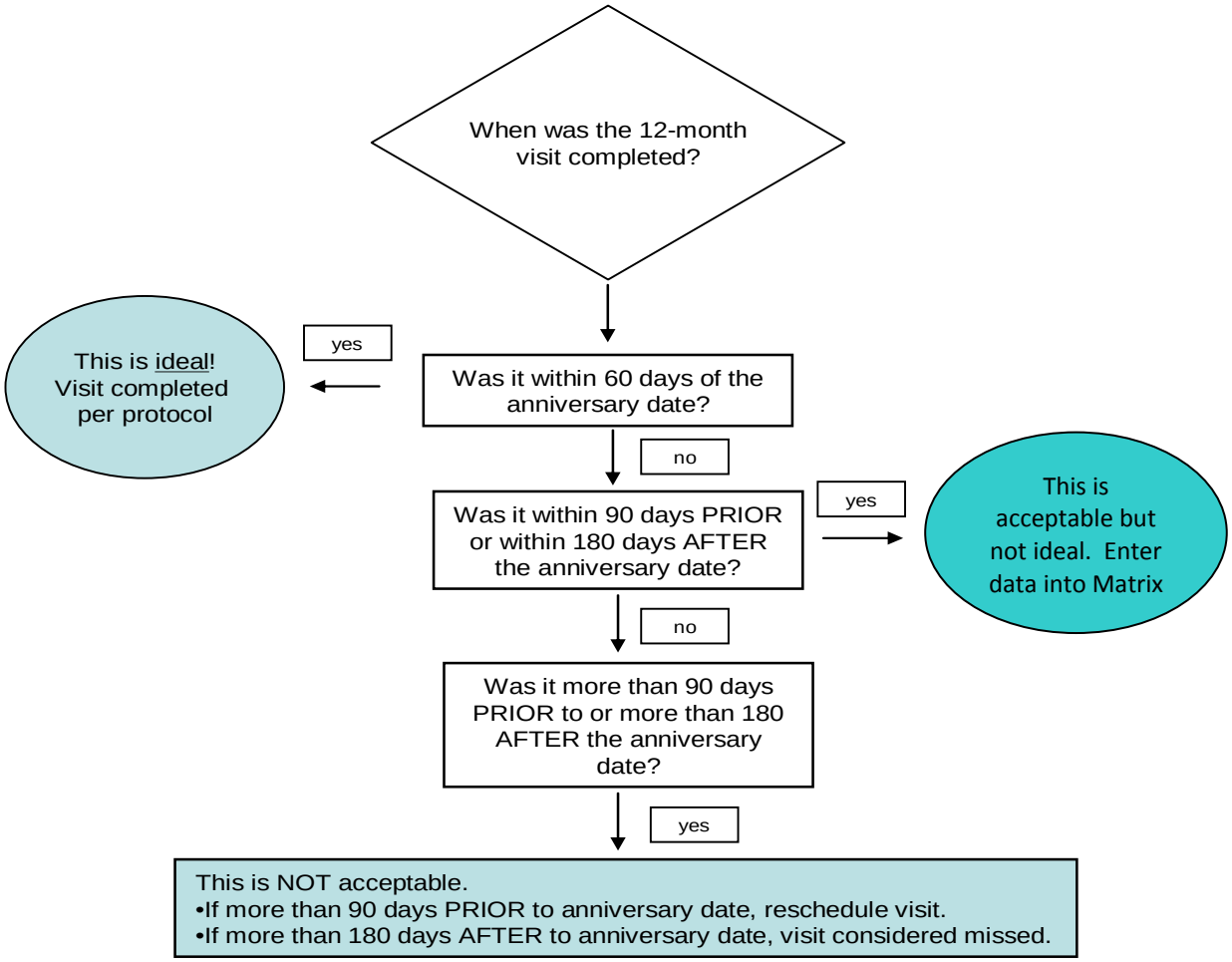
2.1 LABS-2 Data Collection Flow (continued)

LABS-2 Data Collection Flow

- 12-month follow-up data collection -

The following components, that make up the 12-month battery, should be completed.

* Self-assessment forms
* Medication usage
* Stepwatch
* Blood draw
* Surgeon's medical assessment
* Physical measures
* Chart review
* 400-meter corridor walk
* Urine collection



2.1 LABS-2 Data Collection Flow (continued)

The data flow collection process is to be followed for all annual visits. The 72-month /96-month follow-up annual visit are considered a "minimum visit" and do not require an in-person visit. The table below lists the components of a full assessment visit as well as a minimum assessment visit.

LABS-2 Data Collection Flow *Annual follow-up data collection*	
Components that make up the full assessment visit	Forms that make up the minimum assessment visit
• Self-assessment forms • Medication usage • Stepwatch • Blood draw • Surgeon's medical assessment • Physical measures • Chart review • 400-meter corridor walk • Urine collection	• SHORT form (SHORT) • Minimal Visit follow-up form • Medication form (MVF) • Cancer Diagnosis – Modified (CDFM) • Psychiatric and emotional test survey (PETSF) • Reproductive Health Pregnancy (RHP), if applicable • Replacement forms: • Weight (WGT) • Q1.1 & 1.2 of Research Coordinators Assessment (RCAF)

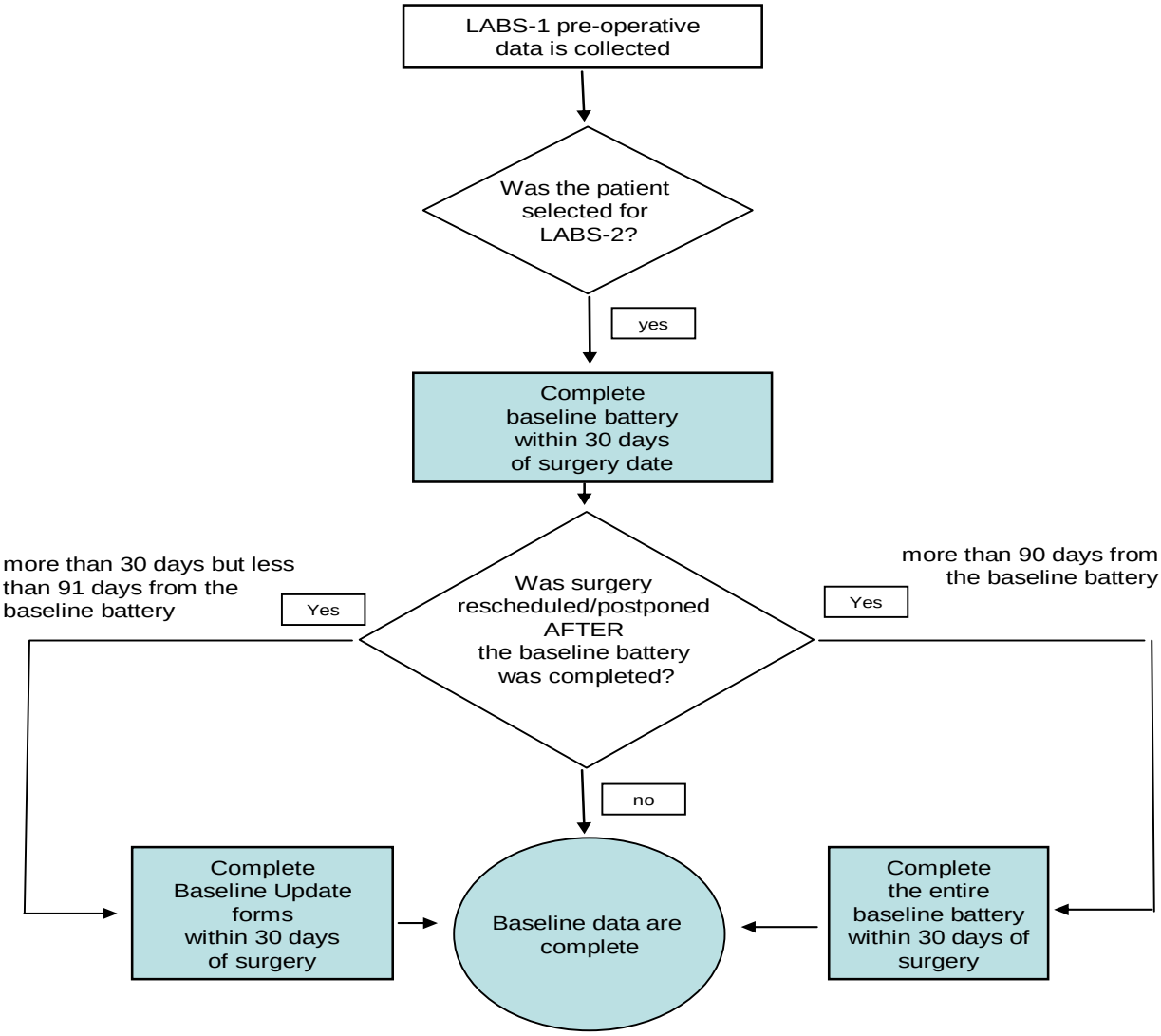
The 48-month visit included an additional packet of forms. The forms were:

- Cancer Diagnosis (CD) (timeframe = lifetime)
- Excessive Skin Survey (ESS) (timeframe = since surgery)
- Suicide Behaviour Questionnaire (timeframe = prior to surgery as well as since surgery)

Note that if these forms were not completed at the 48-month visit, they were to be completed at the 60-month visit.

2.1 LABS-2 Data Collection Flow (continued)

LABS-2 Baseline/Baseline Update Data Collection Decision tree



2.2 Scheduling Windows

Every effort should be made to schedule visits/collect data within the recommended intervals. In the event that data are captured outside of the recommended intervals, it should still be entered and maintained for analyses (with the exceptions listed under the 6-month, 12-month and Annual Assessments below). Subsequent scheduling should always be tied to the initial surgery date. For example, if a participant comes in late for the 12 month assessment at 16 months, the subsequent 24 month visit should still be 24 months from the initial surgery date even though it is only 8 months since their last research visit.

Pre-Operative/Baseline Assessment:

1-30 days prior to surgery

- Self-assessed forms (with the exception of the BDI) may be sent home (if allowed by IRB) prior to the pre-operative visit but no earlier than 31 days prior to scheduled surgery date
- if surgery is rescheduled and/or if the baseline assessment is completed more than 30 days prior to actual surgery date, the LABS-2 pre-operative "update" packet must be completed.
- A complete pre-operative packet must be re-administered if the original packet was completed more than 90 days before surgery. Laboratory values should be provided within 180 of surgery.

Surgery forms (Surgeon's Questionnaire; procedure-specific operative form)

Immediately following surgery

30-day Post-Operative Assessment

30-55 days after surgery

- All information/activity reported must have transpired from the time of anesthesia induction until 11:59 PM on the 30th day following surgery

6-Month Assessment

Plus or minus 30 days of 6-month anniversary from surgery date

- Data collected more than 90 days prior to the 6-month anniversary date will not be accepted as 6-month data, hence participant should be rescheduled for 6-month data collection
- Data collected more than 90 days after the 6-month anniversary date will not be accepted as 6-month data (hence missing 6-month data).

12-Month Assessment

Plus or minus 60 days of 12-month anniversary from surgery date

- Data collected more than 90 days prior to the 12-month anniversary date will not be accepted as the 12-month data, hence participant should be rescheduled for 12-month data collection
- Data collected more than 180 days after the 12-month anniversary date will not be accepted as the 12-month data but can be considered as the 24-month data, if necessary

Annual Assessment

Plus or minus 60 days of annual anniversary from surgery date

Data collected more than 180 days prior to the annual anniversary date will not be accepted as the anniversary data but can be considered as the previous anniversary data (if the previous visit had not been completed). The participant should be rescheduled for the "current" annual anniversary visit

Data collected more than 180 days after the annual anniversary date will not be accepted as the anniversary data but can be considered as the next anniversary data, if necessary

2.3 Components of LABS-2 visits

Baseline data – collect within 30 days of surgery.

- Self-assessment forms – completed by the study participant. Note that, with the exception of the Beck Depression Inventory (BDI), all of the self assessment forms can be forwarded to the participant to be completed at home, if allowed by IRB. However, the BDI must be completed during the baseline clinical visit and the LABS-2 BDI intervention protocol for suicidal ideation must be followed.
- Physical Measures – record weight, blood pressure, resting heart rate, waist measurement, neck measurement.
- Medication usage – confirm medication usage within the past 90 days.
- Chart Review – report clinical tests within the past 12 months in preparation for bariatric surgery.
- Administration of Stepwatch - review the SAM monitor and activity diary with participants prior to sending it home with them.
- 400-meter corridor walk – determine eligibility and record all information related to the assessment.
- Blood draw – send samples to the central laboratory and bio-specimen repository, and genetics repository (if consented).
- Urine collection – send samples to central laboratory and biospecimen repository
- Surgeon form – completed by the surgeon or other LABS certified personnel with a medical background.

Baseline Update data – collect within 30 days of surgery, if the baseline data were completed more than 30 day but less than 90 days prior surgery.

- Self-assessment Update forms – updated selected questions taken from the self-assessment baseline forms.
- Physical Measures – record weight, blood pressure, resting heart rate, waist measurement, neck measurement.
- Medication usage – confirm medication usage within the past 90 days.

Operative data – collect immediately after bariatric surgery.

- Surgery related forms – complete the "generic" surgery questionnaire as well as a surgery-specific form based on the type of surgery performed. Forms include various measurements taken during the operation.

Discharge data –collect at the time of hospital discharge.

- Discharge form – collects information on post-operative anticoagulation therapy

received, post-operative pain management, participant disposition after surgery, discharge date and location, and any post-operative complications that may have occurred.

Post-operative data – collect between 30 – 55 days of surgery regarding events occurring within 30 days of surgery.

- Post-Operative Evaluation Form - collects information on length of hospital stay, discharge location, whether or not the participant died, was re-hospitalized and experienced any post-operative complications.

6-month data – collect at approximately 180 days post bariatric surgery

- 6-month follow-up form – collects information on days missed from work/school/household chores due to weight loss surgery, weight and % body fat and selected questions on weight control strategies.
- Self administered forms – Includes Beck Depression Inventory, SF-36.
- Medication usage – confirm medication usage within 90 days.
- ALT and AST – record ALT and AST values from local laboratory if analyzed with the 6-month assessment window

12-month and annual follow-up data for full assessment visits (12-month thru 60-month, odd years thereafter) – To be collected at annual time points post bariatric surgery.

- Self-assessment forms – completed by the study participant. Note that, with the exception of the Beck Depression Inventory (BDI), all of the self assessment forms can be forwarded to the participant to be completed at home, if allowed by IRB. However, the BDI must be completed during the clinical visit and the LABS-2 BDI intervention protocol for suicidal ideation must be followed.
- Physical Measures – weight, blood pressure, resting heart rate, waist measurement, neck measurement.
- Medication usage – confirm medication usage within 90 days.
- Administration of Stepwatch - review the SAM monitor and activity diary with participants prior to sending it home with them.
- 400-meter corridor walk – Determine eligibility and record information related to the assessment.
- Blood draw – send samples to the central laboratory and biospecimen repository
- Urine collection – send samples to central laboratory and biospecimen repository.
- Surgeon form – completed by the surgeon or other LABS certified personnel with a medical background.

Minimum assessment visits – To be completed by phone or mail*, starting with the 6-year visit, every other year (i.e. on 'even' year visit time points).
Standard Forms:

- Short (SHORT)
- Minimal Visit Follow-up (MVF) (new)
- Medication (MED)
- Cancer Diagnosis Follow-up- Modified (CDF-M) (new)
- Psychiatric and Emotional Test Survey Follow up (PETSF)
- Reproductive Health Pregnancy (RHP), if applicable

Replacement forms:

- Weight (WGT) form, if no SHORT form
- Q. 1.1 and 1.2 (weight data) on Research Coordinators Assessment follow-up (RCAF) form, if no SHORT or WGT form.

Form administration:
Optimal: SHORT, MVF, MED, CDF-M, PETSF, and RHP (if applicable) are completed via a **phone interview**.

Variation #1: SHORT completed via a **phone interview**. MVF, MED, CDF-M, PETSF, RHP (if applicable), are **mailed** to the participant for completion.
If the MED form is not returned, it should be completed by chart review.

Variation #2**: No phone interview**. WGT, MVF, MED, CDF-M, PETSF, and RHP (if woman under 50 and with cover page which assesses whether a pregnancy ended in past 12 months) are mailed to the participant for completion. (SHORT not completed)
The WGT form is mailed out since the SHORT form is not completed by phone. If the WGT form is not returned, Q. 1.1 and Q. 1.2 (weight data only) on Research Coordinators Assessment follow up (RCAF) form should be completed by chart review/PCP data.
If the MED form is not returned, it should be completed by chart review.

*If a participant wants to come in for an in-person minimal assessment visit, the visit should be scheduled. However, the only additional information that should be collected is a TANITA weight which should be recorded on the Research Coordinators Assessment follow up (RCAF) form. If the SHORT form is completed at this time, report that the TANITA scale was used as the source of measurement and report this weight on the form.

2.4 Contacting a participant

A letter template (see next page) has been developed for sites to contact study participants to schedule follow-up visits. It is recommended that a letter be used as the initial step to re-contact the participant. The purpose of the letter is to inform the participant that he/she will be contacted to schedule their follow-up visit and what the visit will include. Sites may modify the letter for use; all modified letters must be approved by the DCC prior to their use. Telephone contact should be made within one week after the letter has been sent. The letter should also include the telephone number and staff person whom the participant can contact if they wish to call the office to schedule their annual visit.

[DATE]

Mr./Ms./Mrs. [NAME]
[ADDRESS 1][ADDRESS 2]
[CITY], [STATE], [ZIP]

Dear [NAME]:

Thank you again, for your participation in the Longitudinal Assessment of Bariatric Surgery (LABS). We are writing to you to let you know that it is time to schedule your [annual/six-month] follow-up visit for the LABS study. We greatly appreciate the valuable time that you are giving to LABS. You are helping to expand the scientific understanding of the impact of bariatric surgery in patients much like yourself across the country. We have enclosed a copy of the most recent LABS study newsletter to provide you with more information about what has been happening with the study.

We would like to schedule a time that is convenient for you to spend with us. This follow-up visit should take approximately [X] hours, during which we will ask you questions regarding your health activities since your last visit and gather the following information:

- Follow-up forms (enclosed)
- Weight and body composition information
- Neck and waist measurements
- Blood and urine samples

At this visit we will also ask you to take home a Stepwatch Activity Monitor to wear for one week and return with an accompanying questionnaire. After receipt of this monitor, we will be able to provide you with information regarding your physical activity for that week similar to the information you received from your initial visit.

In return for your participation, you will receive [X].

Someone from our staff will be calling you within the next week to arrange a suitable time for your visit. You may also contact [STAFF] at [PHONE] to schedule a time. Thank you in advance for your continued cooperation and participation in this important bariatric surgery study!

Sincerely,

2.5 Call Protocol

LABS follow-up, which requires telephone contact with the participant or participant representative, is subject to the following Call Protocol. This protocol applies to scheduling in-person visits as well as phone interviews. Note that a text message can be a substitute for a call provided that the number can be confirmed to be correct but should only be counted as one "attempt" for the call log (even if multiple text messages are used). Although emails can be used as a source of communication with the participant, they cannot be counted as an "attempt" to schedule the visit. **This protocol does not apply to scheduling surgery.**

During the baseline/pre-operative visit and any follow-up visits/contact, the coordinator should ask the participant for the best time(s) and day(s) to reach them via telephone for follow-up appointments. This information should be recorded on the LABS Call Log and kept in the participant's study file. Call attempts should be made during those time(s) and day(s) if possible when attempting to schedule the next visit.

For all other follow-up (LABS-2 only) visits, a minimum of ten (10) phone attempts will be made by the clinical site coordinator or designated representative over at least a two week span. Two (2) calls will be made per day, including one call attempt after 6:30 PM on weekdays to contact participants who are unavailable during standard work hours. Calls should be made on alternate days of the week and at least 4 of the 10 calls should be made on a Saturday or Sunday. One attempt may be a text message and one attempt may be an e-mail message. If more than one text or e-mail is sent, only one can count for the requirement on the call log.

Call Schedule: Call attempts should vary each day based on their previously reported availability (e.g., day 1 at 9 AM and 6:30 PM; day 2 at 1 PM and 8 PM). A call should be made on the first date and if a message is left, only one call is needed. If you reach a busy signal, it should be logged and another call initiated more than 30 minutes later. If possible, the message left for unavailable participants on the first call of the day should include the following information:

Indicate this call is regarding the "LABS study" (do not say in regard to your obesity or bariatric surgery)

Include your name and number

State the reason for the call (e.g., participant is due for 30-day follow-up visit)

Repeat name and number

NOTE: never leave more than 1 message per day.

If, at any point during the 10-call protocol, the participant requests that the coordinator call again but not until a later date, the log should be updated accordingly. When participant contact is initiated at the later date, the 10-call protocol is re-initiated (i.e., considered the 1st of a maximum of 10 calls).

If participant contact by the sixth call is unsuccessful, the following applies:

- For the 30-day follow-up (6 calls) no further phone call attempts should be made for that time point or visit.

- For all other follow-up visits for **LABS 2 participants only** (10 calls or attempts), a letter should be sent to the participant's home, which notifies the participant of attempted contact and requests that the participant call the coordinator upon receipt (*see letter template*).

- If the clinical site is unable to schedule the LABS-2 follow-up visit within the designated protocol window, (*see section on scheduling windows in LABS-2 Manual of Operations*) an off-protocol form should be completed and entered into the database.

The attached phone log should be maintained for each participant and included in the participant's study file.

Visit: _____

LABS Call Log

Patient ID: _____ ☐ **Drop-Out (complete Inactivation Form)**

Patient Name: _____ ☐ **Do Not Contact**

Telephone Number: _____ **Best time (s)/ day (s) to call:** _____

_____

Attempt	Date	Day	Time	Specify Contact type *(phone, email, text, etc.)*	Status						
					Spoke with Patient	Busy	No Answer	Left Answer with Other	Left Message on Machine	Got machine, no message left	Other
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

[Date]

[Name of participant]
[Address]
[Address]

Dear [Name of participant]:

We appreciate your participation in the Longitudinal Assessment of Bariatric Surgery (LABS) study. As part of our research, we follow all of our participants after their surgery over an extended period of time.

We have been trying to contact you to ask a few questions regarding your health and well-being. Since we value your participation in this study, we would greatly appreciate your continued support. As you know, we are working hard to understand the effects of surgical weight loss. The only way this is possible is by continued participation by you and others who have completed this type of surgery.

We would be very grateful if you would contact us as soon as possible to continue your participation in the study. We have included our contact information at the bottom of this letter. Please do not hesitate to contact us with any concerns or questions you may have.

Thank you again for your continued support of our project! We look forward to hearing from you soon.

Best regards,

LABS-2 Contact Form – to be kept in the participant's research file.

Form Completion Date __ __ / __ __ / __ __ __ __
Coordinators Name:
Participant's Contact Information:
Name:
Address:
Phone: (__ __ __) __ __ __ - __ __ __ __
Other Information that may be pertinent:
Name and phone number of a relative, friend, or other contact:
Name:
Address:
Phone: (__ __ __) __ __ __ - __ __ __ __
Relationship to participant:
Other information that may be pertinent:

2.6 RECRUITMENT AND RETENTION

2.6.1 GENERAL INFORMATION

Essential aspects of maximizing participation and promoting retention are:

1) Careful screening and assessment of potential barriers to adherence and retention prior to randomization

2) Careful monitoring of adherence problems (which often predict retention problems), identifying these problems early before participants refuse further study contact

3) Applying specific strategies to address problems

General retention strategies and those to be applied in special situations are described in the following sections. However, since the methods most likely to maximize retention may vary by individual and by clinic, each LABS site must design an appropriate retention plan for their participants.

2.6.2 GENERAL RETENTION STRATEGIES

LABS retention will be enhanced by strategies such as: facilitating access to the clinic, maximizing staff availability, providing participants tangible and intangible support, and providing appropriate information to participants.

Facilitate Access to the Clinic

A. Maps and Signs:

The study site should be easy to find. Maps and good signage are essential.

- Maps often are available from sources within the institution or can be developed by LABS staff. Detailed information such as elevator location, floor and room numbers is needed to guide participants to the specific area. Signage may be harder to acquire than maps because it often requires organizational sanction.

B. Physical Setting:

The clinic should be a convenient and attractive area containing, as appropriate, a waiting area with receptionist/secretary, rooms that provide privacy for data collection or counseling, and offices for the staff.

- Participants should be escorted by staff and introduced to personnel in each area used for study activities. Escorting should continue until the participant volunteers to travel from one area to another independently.
- Bulletin boards, posters, and other materials may be used to provide information on LABS and promote participants' allegiance to the study.
- Bariatric chairs, weight and width appropriate, should be available in waiting and interview areas to ensure the comfort and safety of the participants. Bariatric wheelchairs should also be available for participants with mobility limitations.

C. Transportation:

Convenience and cost of transportation are two factors that may affect study retention, particularly among lower-income participants and those who reside or work in areas where public transportation is not well developed.

Convenience:

Appointment keeping and study retention may be affected by the location and cost of parking garages or lots, distance from bus stops, perceptions of safety in gaining access to the building, as well as any other inconveniences associated with travel. To decrease travel concerns, we recommend the following:

- Include information about public transportation stops and parking garages on location maps discussed above (Section 12.2.1)
- Address safety concerns. Do not assume that participants know what is risky versus safe behavior related to parking and walking in the area around the study site. If necessary, provide escort services to parking or transportation areas.
- Discuss traffic and driving concerns to guide when visits are scheduled

Cost:

Develop a site-specific reimbursement policy for transportation expenses incurred by participants. Centers may elect to pay parking charges, etc., for all participants or to reimburse on an "as needed" basis. Mechanisms for reimbursement vary depending upon institutional policies and local resources and may include any of the following:

- Stamps to validate tickets or charge cards

- Tokens for public transportation purchased in bulk and given to participants at each visit
- Charge accounts from taxicab and van services
- Volunteer transportation services, such as services provided for senior citizens, which can be utilized at low or no cost to the study
- Contact the institutional marketing and social services departments for further information and resources on transportation issues.

Maximize Availability of Staff

Appointment Hours:

Study participants are "customers". As volunteers, they cannot be expected to alter their schedules or to miss work as they would to utilize other health care services.

- Accommodate participant schedules by keeping the hours that staff is available for LABS visits as flexible as possible.

- Become familiar with other participant obligations and schedule accordingly. For example, participants in certain professions (i.e., teachers) may need to schedule visits during summer or holiday breaks.

Availability Outside Of Business Hours:

Participants may be need to be seen for LABS visits outside of normal business hours (i.e., early morning for fasting blood draws or evenings to complete questionnaires). When appropriate, staff should be available for appointments outside normal clinic hours to maximize retention.

Staff Willingness to Spend Time with Participants:

Another way to enhance retention, is the participant's perception of the staff's willingness to accommodate their individual needs The amount and quality of time staff give participants may be just as important as flexible schedules and access during non-business hours. For instance, a participant from another study told the study coordinator, "I like coming here because you listen to my stories."

It is important for participants to feel they are important and valued by the staff. This begins at the front door with friendly reception by staff and continues through the actions of staff over the duration of volunteers' participation in LABS. Pleasant, kind, helpful, and attentive staff will facilitate bonding and maximize study retention.

Facilitating Appointments:

There are a number of ways to help participants keep their appointments, such as any of the following:

- Provide participants with wallet-sized appointment cards, which include the clinic phone number and "check-off" statements (fasting vs. non-fasting appointment, bring completed forms, bring medications, etc.) to help them prepare for the next visit.
- Mail written reminders or place phone calls to the participants a week before the appointment. Since such calls will facilitate familiarity between staff and participants, study staff should take turns placing such calls.
- Remind participants by phone the day before their appointment.

Assurance of Informed Consent

The LABS-2 consent form alone is complex. Additionally, many participants will be consented for LABS-1 and LABS 2 at the same time. Therefore, the consent process must be streamlined as much as possible. In addition to LABS-1 & 2, many participants may also be approached for participation in a LABS substudy or ancillary study. To retain participants over the length of such studies, they must have a clear understanding of what is expected of them for EACH study. Clinical centers may enhance the consent process by any, or all, of the following ideas:

- Distribute a professional looking handout for each study that summarizes (in bulleted form) what will be expected of the participant while enrolled in that specific protocol.
- Create a PowerPoint presentation for use in conjunction with the consent process. Such a presentation gives the participant a visual explanation of the consent form in

addition to reading the consent document. Visual aids may include a map of LABS clinical centers, projected enrollment rates, bulleted points explaining what is expected of the participant while enrolled, a study timeline, etc.

- The Step Watch Activity Monitor should be available to show to participants during the consent process, giving them a better understanding of this portion of the protocol.
- Give the participant a welcome packet or participant handbook to take home with them.

Provide Tangible Support

Tangible support includes those items that enhance voluntary participation in LABS and minimize potential barriers to retention, fulfilling endpoint goals. These items include:

- Reimbursement for parking and/or mileage
- Gift cards (Target, local grocery stores, book stores, coffee shops, etc.)
- Snacks for consumption following completion of fasting blood draw
- Raffle for a cash prize at designated intervals throughout the study
- Greeting cards, such as “thank you,” or “welcome to LABS,” a “get well” card following surgery, anniversary cards at 1 and 2 year follow-up, and “thank you” cards at end of their participation Coordinators may also elect to send birthday cards to each participant.

Provide Intangible Support

Intangible support includes items that enhance participation in LABS and minimize potential barriers to retention, but are more subtle in nature than the tangible support items. Intangible support may include:

- A letter of endorsement from the surgeons explaining the LABS research project
- A meeting with potential participants during a visit with their surgeon to strengthen the surgeon-to-research connection
- Quarterly phone calls to participants
- Step Watch Activity Monitor (SAM) feedback

- Body composition readings
- Staff visibility at support groups and/or other participant activities, including a walk/run group for bariatric surgery participants
- Encourage participants to use the participant web site
- The LABS spotlight (section 12.3)distributed at each visit for participants to take home
- Pre-visit reminder calls
- Well-organized and timely visits and possibly some outside-of-normal business hours as needed

Provide Emotional Support

Participants feel supported when they perceive the study staff as caring and when they perceive themselves as full partners in the research process.

The following actions may increase participant perceptions of support:

- Maintain a safe and comfortable study environment.
- Create a relationship in which goals are jointly established.
- Express interest in important aspects of a participant's personal life.
- Ask about the participant's personal reactions to aspects of LABS.
- Acknowledge what the participant has reported.
- Be creative. When possible, conduct study procedures in a manner that best meets the specific needs of the participant and family members.

Continue Using Motivational Enhancement Methods

Use motivational techniques when interacting with participants. Examples include:

- Maintain your enthusiasm for their participation in your body language. Your voice, eye contact and facial expressions should let each participant know how valuable they are to the study.
- Praise the participant for showing up at and keeping appointments.
- Vocalize your appreciation for their time and efforts.

- Help each participant become excited by their successes. Encourage them to celebrate their milestones following surgery (30 days, 6 months, 1 year, etc.) in their own way (e.g., going out for a special activity, etc.).
- Encourage participants to surround themselves with people who have a positive attitude to their successes.

In addition to the work done by the coordinator, all members of the medical team should be encouraged to fully support each participant and their weight loss and healthy lifestyle efforts

PARTICIPANT WEB SITE

The LABS Participant Portal is a web site designed to educate the participant about the study, create a sense of community among participants, and to help them find further information about topics and issues relevant to them. Some of the features will include:
1.) Interactive elements such as a map of the LABS clinical centers linking users to the LABS Spotlight issues, and a forum where participant comments and experiences will be posted monthly.
2.) Up-to-date links to other sites offering information on health, nutrition, fitness, and other members of the bariatric surgery community (i.e. – links to on-line support groups)
3.) Study information such as what to expect at each visit, current enrollment, and history of LABS

Participant Handbook

The LABS Participant Handbook has been designed for study participants to save important materials, such as consent forms, lab results, fact sheets, booklets and other information they receive about the study. The manual should be presented to the participant when they agree to participate and should include:

1. Welcome letter to participants from Carolyn Miles (NIH) printed on letterhead and provided to the clinics from the coordinating center
2. Welcome letter from the site Principal Investigator, signed by all LABS surgeons at medical center

3. Sites will tailor their binders to include additional information specific to their participants. Some suggestions on what the sites can include in the handbook are:
    - Appointment reminder (with day, time & location of next appt) and a list of materials to bring to next clinic visit
    - Map of LABS clinical sites
    - Closest parking – cost of garage parking/availability of vouchers
    - Directions to medical center
    - Map of campus and medical center
    - Public transportation – location of closest bus stops, and commuter train stations
    - Disabled shuttle information
    - What to do if the weather is severe and volunteers cannot get to the hospital/clinic for an appointment, how volunteers are informed if the clinic is closed or if there is a program cancellation/change (due to severe weather), i.e.; radio, phone call
    - LABS newsletter
    - LABS participant web site address and information
    - Information regarding investigators, coordinators and research staff with contact information.

Identifying and Resolving Retention Problems

In spite of the best efforts, retention problems may still arise. Regardless of the stage participants have reached in LABS or the level of difficulties they are experiencing, study staff should remain proactive.

Keys to successfully identifying & resolving retention problems include:

- Remain sensitive to signs of problems, to identify them at the earliest possible moment, when intervention is easiest and most effective
- Carefully document problems, to allow for timely and complete communication

among staff and with the participant to address the problem

- Design interventions to effectively resolve problems. For example, maintain positive communication with participants who are having difficulty committing to follow-up visits
- Efforts to address possible adherence and retention problems should be initiated during screening. Prior to enrollment, emphasize the following points to potential participants:
- There is a critical need for follow-up visits regardless of success following bariatric surgery. Staff should stress the following:
- "We really, really want you to stay in touch. We know there may be times when your research appointments may be an inconvenience to you or times when you feel that the surgery has been less successful than you anticipated. However, we hope that you understand the importance of staying in contact with us over the course of time. This is the best way for us to learn more about the effectiveness of bariatric surgery."
- The study staff will make every effort (consistent with good sense and respect for the participant's privacy) to maintain contact during the length of the study. If the point is made early that we will try to maintain contact no matter what challenges are encountered, it will be easier to do, should it become necessary. Potential participants should be told that LABS staff will do all they can to maintain contact, including calling, writing, and trying to reach an identified contact person. Discuss with potential participants the specific strategies they would most like you to enlist if contact dwindles at any time during the study. Enlist the participant's involvement in deciding the types and extent of contact strategies to be used should retention become an issue (e.g., contacts at work, contact spouse, and enlist PCP in reinforcing importance of study). Participant involvement in the early stages may be a powerful factor in their response to and acceptance of these efforts should they be utilized.
- In addition to the tangible & intangible means of support outlined in section 12.2 other strategies to optimize retention during the course of the study may include:

- Occasional phone contact between research appointments by surgeon and/or research coordinator
- Choosing an alternate team member with strong participant rapport to contact the participant
- Optimize use of retention materials as response to a missed visit by mailing an incentive package (e.g., send a greeting card or other tangible incentive)
- In making contact with participant who has a missed visit, remind them that their spouse or a friend is always invited to attend with them

Specific Retention Problems

Signs of potential difficulty are identified below as "red flags" and should be taken seriously and fully discussed with potential participants as well as research staff. The results of the behavioral run-in itself should be carefully evaluated for signs of difficulty. In addition to general strategies appropriate to all potential retention problems, LABS staff should be aware of specific retention problems and ways to address them. These are discussed below. In the participant research file, carefully document specific "red flags" as well as interventions used to curb them.

Protocol Adherence

o **Protocol Adherence Red Flags**

Clinic staff and investigators must be vigilant in order to identify early problems with adherence. Indicators of potential adherence problems include the emergence of the following red flags:

- Problems scheduling initial research visit
- Difficulty reaching participants by phone or failure to return calls
- Participant reservations about study burden
- Complaints about clinic procedures
- Showing up significantly late to visit
- Missed visits
- Forms not returned

- Step Watch Activity Monitor not returned
- Rescheduling twice or more for a visit

B. Interventions for Protocol Adherence Problems

If research staff identify that a participant is having problems adhering to the protocol, the first step should be to "validate" the participant's feelings.

A conversation starter to open the communication may be as follows: "LABS asks a lot from people. What part of this study is hardest for you right now? Perhaps I can help make it a little easier".

When participants consistently need more attention or a repetition of information, contact the P.I. or surgeon.

Other interventions to be considered in addressing identified red flags include:

- Provide opportunity to meet in any reasonable location or at any reasonable time which is convenient to participants
- Emphasize the positive; praise all successes (i.e., coming to last appt, turning in all forms, etc)
- Re-emphasize benefits from participation and follow-up (ability to help other participants in future, knowledge gained on factors related to obesity and weight-control surgery)
- Encourage the Principal Investigator and other investigators to hold regular sessions designed to help participants see the "big picture" (i.e.; news about obesity and bariatric surgery) if allowed
- Encourage Principal Investigator to call participant to offer encouragement if allowed
- Maintain contact through newsletters and scheduled calls, mailed notes when indicated
- Offer extras, if acceptable to local IRBs, including birthday cards and incentives at follow-up visits. These incentives should be used to underscore the bonding between staff and participants, not to replace that basic social connection
- Address all concerns about the study; involve the Principal Investigator, if

appropriate and allowed

- Be prepared to explain how some questionnaires help us reach the objectives set forth in LABS
- Encourage family participation in coming to appointments

Participant Behaviors

A. Participant Behavioral Issues

Staff should be alert for things that participants say or do which indicate they are dissatisfied or discouraged with certain aspects of their LABS experience. Such issues should be addressed as quickly and effectively as possible.

B. Participant Behavior Red Flags

Participant behaviors which suggest emerging adherence problems and are considered red flags include:

- Complaints about research visits
- Impatience during research visits
- "Distance" during research visits
- Lack of concern about non-adherence to protocol
- Complaints about burden of study (time required, questionnaires, blood draws, etc.)

C. Interventions to Address Participant Behavioral Problems

For participants who feel ignored or taken for granted, the PI *may* be the best person to contact the participant if allowed by local IRB. If the Principal Investigator does initiate contact, he/she should focus on emphasizing the importance of LABS and of the participant to LABS. Other interventions include:

- Communicate caring and respect for participant in all actions.
- Acknowledge and discuss any concerns the participant communicates and address as appropriate.
- If a participant expresses concerns, follow-up with a phone call to discuss more fully or tell participant about what's being done to address the concern.

- Be open to discussing issues the participant wants to talk about even when unrelated to LABS

Participant Psychosocial Issues

A. Participant Psychosocial Issues

During the length of the study, many LABS participants will experience psychosocial crises (such as family problems or transitions, major job changes, and other events). These events may produce major problems for retention, especially among participants whose coping resources are limited.

B. Participant Psychosocial Red Flags

- Specific complaints concerning lack of family support
- Active efforts by family members to sabotage participants' participation in LABS
- Major family crisis, illness, or transition
- Major job transition
- Major psychosocial problems

C. Interventions to Address Participant Psychosocial Problems

- Take an open, inquiring attitude to find out what is going on for the participant
- Help participant find resources to cope with problems
- Encourage family support for participation in LABS
- Offer encouragement and support as well as more frequent contact if participant wants that and time is available
- The Study Coordinator and Principal Investigator should collaborate with the participant to generate a plan for appropriate action.

Some participants might have psychosocial problems severe enough to interfere with active participation in the study. In this case LABS staff should help the participant find help or treatment for the problems outside of the study.

Participants who have psychological disorders (e.g., major depressive disorder, anxiety disorders, and substance abuse disorders) need treatment. . The P.I. or other qualified staff should refer participants who may be suffering from such disorders for appropriate treatment. All such referrals should be documented.

Retention Monitoring and Assistance/Drop-Out Recovery

Despite the staff's best efforts some participants will not complete annual outcome visits and will be considered inactive. Each site should develop a drop-out recovery process. The fundamental goal of drop-out recovery is to reactivate participants and to keep them from formally withdrawing from the study. Drop-out recovery plans should try to re-establish contact and communication first, and then address adherence and active participation. Engaging participants in topics unrelated to LABS may help. Maintaining even minimal contact with participants during periods when motivation to be active in LABS is low makes it easier to reengage them in the study. Efforts to contact inactive participants should be initiated by the staff member who has the best rapport with the individual participant.

Each clinic should involve the PI and research coordinators in devising a step-wise approach for drop-out recovery. Specifically, sites should devise a hierarchical list of efforts to reactivate participants. Strategies should be implemented sequentially at intervals of 1-2 weeks.

- Telephone contact efforts x 2-3 by research coordinator. If telephone contact is not made, pursue the following:
- Letter of concern from clinic with statements indicating "sorry we've missed you, hope you are well, want to help however possible to assist you in getting back into our study of weight-control surgery, please contact us at your earliest convenience"
- Telephone contact effort by PI
- Final letter from clinic indicating desire to continue to follow participant for health monitoring. This letter may express encouragement to re-contact at any time, support for their efforts, a message of gratitude for their participation thus far, and a message as to how important they are to helping us understand effects of weight-control surgery, etc.

Some clinics may find that engaging a participant's PCP (only if allowed by IRB) is an acceptable and effective means of maintaining contact with a certain participant, and may include this strategy in the above hierarchy.

Locating Participants

Introduction

This section of the manual describes methods of finding and relocating individuals selected for LABS-2 participation. This procedure is often referred to as "tracing" or "tracking".

Longitudinal cohort studies, such as LABS, require periodic contact with the study participant at specific time intervals in order to look at changes in health, behaviors and life circumstances. The LABS-2 study was designed to collect data annually from all study participants for a period of up to 3 years. The ability to follow all study participants over time directly affects the amount of information collected and that, in turn, affects how confident investigators can be that the information accurately reflects patterns of changes among study participants. It is important to re-contact the participants, and retain their participation throughout the life of the study.

Some study populations present greater tracking difficulties than others. The problem of locating, interviewing, and retaining participants may be increased when participants are concentrated in geographically mobile, youthful, aged or poor populations. Longitudinal cohort studies require close attention to the issues of locating and tracking participants.

This section discusses methods that could be used at your site to find and retain participants who are initially hard to recruit, and difficult to locate at follow-up.

Contact Information

In a cohort study requiring re-contacts, effective follow-up depends in part on information obtained at the first interview. In addition to giving their current address and telephone number at baseline, participants should supply the name and telephone number of a relative, friend, or other contact (e.g. work colleague, social worker, neighbor or clergy) not living in their household, who will most likely remain in close contact with the participant over time. This information should be recorded in the **LABS-2 Contact Form (see Appendix A)** and kept in participant's research file. **This information should be updated at each follow-up visit.** It is important to assure the participant of the confidentiality of this information and to remind them that these contacts will only be used if you are unable to locate the participant directly. If the coordinator or other study staff is unsuccessful in reaching participants, the contact which the participant provided at the initial interview can be used to locate the participant. Coordinators may also make in-person "field" visits to a participants address when contact by telephone proves

unsuccessful.
It is important to protect the confidentiality rights of the participant at all times. Do not divulge the name of the study with anyone other than the participant.

Tracking Procedures
Despite a study's best efforts to remain in contact with every participant, inevitably some participants will move without notifying the research team and will need to be traced. Many of those who move remain in the same metropolitan area, perhaps even in the same neighborhood. The first objective of tracking is to verify that the participant has moved and to follow every possible lead to locate him/her at their new address.

Start with the most obvious, least time-consuming step, and proceed logically from there. Begin with the telephone. Call the participant's number if you have it and use telephone directories and directory assistance if you don't. Follow every lead you have at the outset or receive along the way until all leads are fully exhausted, this includes:

calling phone numbers of the participant for home and work if available;
calling listed contacts;
contacting the participants employer or physician; and
utilizing data sources like the Department of Vital Statistics or the Department of Motor Vehicles.

Thoroughly document every contact attempt made, whether successful or not. This will assist other staff members who continue the search after you and prevent needless repetition. If your efforts are finally unsuccessful, it will assure supervisory staff that every possible avenue has been pursued.

The process of tracking missing participants utilizes the resources and follows the guidelines listed above. Begin with the most obvious step first and follow an order based on previous tracking experience while following the most productive lead at all times.

Postal Tracking Procedures
Re-contacting participants by mail is often a cost-effective method of maintaining contact and acquiring information on changes of address compared to telephone contacts. Such a postal contact is often a first option in reaching the participant to explain the purpose of the study and invite participation.

The inclusion of stamped return envelopes with pre-printed cards enables participants to provide information on change of address, change of phone number, and preferred times to be contacted. Special letters can even be sent to participants without listed phone numbers requesting that they send their telephone number or number where they may be reached at certain specified times. Understandable, many participants are reluctant to send unpublished numbers on open postcards through the mail, so the pre-printed cards with postage-paid envelopes may elicit a better response. Some participants prefer to send a work telephone number or prefer to call you directly. The letter should

always tell participants to call in "collect". Whenever possible, a "1-800" toll free telephone number is preferable.

All participant envelopes should be stamped with "**Address Correction Requested"**. This indicates to the post-office that the letter should not be forwarded, rather it should be returned to the sender with a forwarding label attached. Unfortunately, this request is not always honored. In situations where the participant has taken out a restraining order, the postal service will not provide this information. Forwarding information is usually kept on file at the post office in the zip code area of the place of former residence for up to **one year** after the participant moves.

Telephone Tracking Procedures

If there is no telephone number on file, or if the listed number is not available, the next step is to consult the current telephone directory. Look up numbers for the same name and address or, failing that, the same last name and address. In addition, record numbers for slight variation in name and address. These may be nearby relatives or the result of spelling variations and can be checked out by calling these numbers if other leads prove fruitless.

If this fails to produce a usable number try Directory Assistance. Dial 411 or 1+ (area code) 555-1212 for long distance numbers. Operators will often tell you that there is a non-published number for a participant at a verified address, indicating that the participant is likely to be living at that address and can be traced by mail contact.

When communicating with the operator, always spell the last name and verify the address. For example, "last name of Doe, D-O-E: first name Mary, located at 9 Galen Street in Watertown. Could you please verify the address?" Directory Assistance should supply you with two telephone numbers at each call. Tell the operator at the outset that you will need two telephone numbers, and to ensure that you are not cut off before you make the second request, ask for the first listing.

Operators sometimes make mistakes or are reluctant to scan a long list of names for a specific address. If you have particularly uncooperative operator, you can always hang up and call again. Most likely, you will reach a different operator.

If you are unable to contact the participant by telephone, attempt to reach the contact the participant listed at the baseline interview, following the same procedures listed above. If you reach a contact person who does not know where the participant is, ask if they have any suggestions as to who might know the participant's whereabouts, and offer to tell the initial contact that you will re-contact her/him if you do not locate the participant.

Other Resources

Public record searches can provide information on the whereabouts of the participant. Vital statistics and Voter Registration records are public, and do not require consent

forms in order to review them. Both agencies should be called before requesting specific information to determine what procedures are required to initiate a search. Make sure to get the name of the person who gives you the specific protocol, in case there are questions later on in the process.

The Voter Registration Office can provide updated address information when given name, date of birth and social security number, but only if the participant has re-registered within the same voting district.

The internet may be able to provide assistance in locating participants. Some websites that may be useful are:

http://people.yahoo.com
www.USSEARCH.com
www.anywho.com
www.allonesearch.com

Strategies for Locating Participants Who Are Lost to Follow-up Revised 5/21/10 (Please contact the DCC to report a link that is not working)

1) Identify one or more clinic staff who will be responsible to conduct search (program coordinator, retention, outcomes staff, other). This may vary across clinics.
2) Set up a process at your clinic to identify which participants are "lost to follow-up", at the present time (beginning with "Summary of Inactive Participants Report"), and a process to identify participants, over time, as they become "lost".
3) Suggestions for locating participants who are lost to follow-up.
   a) Gather information from all clinic staff that may have information on the participant (clinic notes, phone calls, etc). Be careful with this step when blinded staffs are involved.
   b) Tips for locating participants
      i) Each case is different and may require different actions
      ii) Look for clues in recent hospital records (e.g., was participant discharged to a nursing home or other medical facility?)
         (1) Online resources for locating medical facilities
            (a) The American Hospital Directory - www.ahd.com/
            (b) Medical facilities in the US and abroad - http://www.hospitalsoup.com/hospitalsearch.asp
      iii) Contact proxy (requires having proxy information on file or locating proxy)
      iv) Send mail requesting forwarding address
      v) Contact physician's office
      vi) Check real estate (i.e., has ownership changed?). Some states will list current address if ownership has not changed.
      vii) Check public records

viii) Has there been a name change (e.g., was participant planning to marry or divorce)?
ix) Keep track of all steps taken to locate the participant and record what happened (including names of people with whom you have spoken).

c) Resources on the World Wide Web:
   i) www.ancestry.com/
      (1) This is a search by name and provides general information for a fee. See website for details.
      (2) Annual membership is $14.95 per month, billed in annual payments of $179.40, as of 12/30/2005
      (3) Monthly membership is $23.95 per month, billed in monthly payments, as of 12/30/2005
      (4) Be sure to read the "Terms and Conditions"
   ii) http://ssdi.genealogy.rootsweb.com/cgi-bin/ssdi.cgi?o_xid=0031936443&o_lid=0031936443&o_xt=31936443
      (1) This is another SSDI search option and will provide DOB, date of death, last residence, and social security number for decedent free of charge.
      (2) Index purportedly updated semi-annually.
   iii) http://www.ancestorhunt.com/prison_search.htm
      (1) This is a prison inmate search. Scroll down to select state and begin search. Search will provide DOB, picture, location, sentence, etc. free of charge for some states. Other states may provide instructions for verifying that a person is incarcerated.
   iv) http://www.whitepages.com/
      (1) E-White pages is a good tool for locating contact information for participants, proxies, and other contacts
      (2) Free information
   v) http://www.yellow.com/
      (1) E-Yellow pages is a good tool for locating physicians or other professionals/business owners.
      (2) Free information
   vi) http://www.zabasearch.com/
      (1) Name search provides name, address, and date of birth free of charge
      (2) Search by telephone number requires payment of a fee.
         (a) Instant report, $14.95 (as of 01/05/2006)
      (3) Search by social security number requires payment of a fee.
         (a) Background report, $49.95 (as of 01/05/2006)
   vii) http://www.google.com/
      (1) A tool to locate people and medical facilities.
      (2) Free information
   viii) Websites specifically for your city, county, or state.
         (a) Check local medical center websites for physician directories.
         (b) Check local newspaper websites for obituary information. Information, search options, and length of time available will vary by website.

(c) Check county website for real estate or geographic information system. This will allow you to search the database by property address.

4) Log actions taken to locate participants on a central LABS tracking system (Lost to Follow-up and Inactive Participant Tracking Form).
5) If participants have requested no further contact from LABS then check their status (dead or alive) every six months using alternative methods.
   a) Social security death index (2 web options are listed above)
   b) Obituaries
      i) If possible, check the local obituaries every morning to determine whether or not LABS participants are listed. (Note: Obituaries usually list next of kin which might be helpful.)

The Options Letter

NOTE: THE WGT FORM IS REQUIRED TO BE INCLUDED WITH THIS OPTIONS LETTER

Date
Address

Dear _____,

We understand that your life is very busy and, at times, it is difficult to do all of the things that you would like to do. We are especially honored that you have agreed to be a part of the LABS study. The information collected as part of this research study will help to better understand the effects of surgical weight loss.

You have recently reached another bariatric surgery anniversary and we at the LABS study would like to see how you are progressing, update your information, and provide you with your personalized Progress Profile (example included).

Because the deadline to complete this assessment is quickly approaching, we would like to offer you some flexible options. **Please see the sheet attached to this letter, mark the option(s) which would best fit with your current schedule, and return the sheet in the enclosed envelope.**

Thank you again for your continued support of this project. The only way the study goals will be reached is through continued participation by you and others who have had this type of surgery. As always, please do not hesitate to contact us with any concerns or questions you may have using the phone or email information below. We look forward to hearing from you soon!

Best regards,

LABS Annual Visit Options

Instructions: Please review the below options, select those which would best fit with your current schedule, fill in the necessary blanks, and return this page in the enclosed envelope. Thank you!

Name: _____

I would like to schedule a LABS research visit.
Please call me at ( ) _____ - _____ to arrange.

I am not able to come for a LABS research visit, but I am willing to complete the questionnaires and return them by mail.
Please send the questionnaires to: _____
_____

I am not able to come for a LABS research visit, but I am willing to complete portions of the visit over the phone.
The best number to reach me is: ( ) _____ - _____
A convenient time to call is ___:_____ AM/ PM (circle one).
A convenient day for me is (circle all that apply): Monday /Tuesday/ Wednesday/Thursday/Friday/ Saturday.

As a thank you for your time, we will reimburse you for parking and provide you with $50 in gift cards if you are able to come in and complete the research visit and questionnaires. If you prefer to complete the visit and questionnaires by phone and/or mail, we will provide you with $25 in gift cards.

Longitudinal Assessment of Bariatric Surgery (LABS-2)

Version 7 post 6/1/2013

Design Synopsis

Primary Objectives

1. To describe surgical risks and changes in clinical, metabolic, and psychosocial measures among patients undergoing bariatric surgery. Risks and changes occurring within 3 years of surgery will be assessed using standardized techniques and measures in a multi-center cohort of patients.

2. To determine the associations of clinical and demographic patient characteristics, components of the surgical procedure, and peri-operative and post-operative care with post-operative risks and changes in clinical, metabolic, and psychosocial measures.

Secondary Objectives

1. To assess health care utilization of patients undergoing bariatric surgery for treatment of obesity and related co-morbidities.

2. To obtain and store biospecimens (serum, plasma, whole blood) for research related to the aims of this study, and for future research into the pathophysiology and genetics of obesity and obesity related complications.

Type of Study

- Prospective cohort

Inclusion Criteria

- Patients who are at least 18 years of age and undergo bariatric surgery by a LABS certified surgeon
- Selected by algorithm to be included in LABS-2

Exclusion Criteria

- Informed consent not obtained
- Prior bariatric surgery
- Unlikely to comply with follow-up protocol
- Unable to communicate with local study staff

Sample Size

- Approximately 2,400 patients recruited over a 3 year period

Duration of Follow-up

- Up to 7 years following bariatric surgery

Outcomes

- Death
- Complications
- Changes in clinical, metabolic, and psychosocial measures

Data Collection Schedule

- The LABS-2 baseline data will be collected within 30 days prior to bariatric surgery.
- Follow-up assessments will occur approximately 30 days, 6 months and 12 months following date of bariatric surgery and annually thereafter.

1 Introduction

1.1 Background. Obesity has become one of the leading health concerns in the United States (US) (Mokdad 2004). The traditional approach to weight loss consisting of diet, exercise, and medication generally achieves no more than a 5-10% reduction in body weight (Yanovski 2002, McTigue 2003) and regain to or above baseline after such weight loss occurs in more than 90% of people undergoing non-operative therapy within five years (Safer 1991, Wadden 1989).

Bariatric surgical procedures, which restrict stomach size or lead to decreased absorption of nutrients, are being increasingly performed to treat extreme obesity. These procedures often result in substantial weight loss and can have a dramatic effect on co-morbidities associated with obesity, such as improved control of blood sugar or even reversal of type 2 diabetes**.** However, bariatric surgical procedures also carry substantial risks, including death.

Extreme or Class 3 obesity (BMI >40) has dramatically increased in prevalence over the past several decades, now affecting almost 5 percent of the US adult population. Although an increasing number of people with extreme obesity and obesity-related complications are undergoing bariatric surgical procedures, there has been little systematic research to help determine the risks and benefits of bariatric surgery, or to provide guidance on appropriate patient selection. Of the several different types of bariatric procedures performed in the US, the Roux-en-Y gastric bypass (RYGB) (Howard 1995, MacLean 1995, MacLean 1993, Sugerman 1987, Laws 1981, Lechner 1981, Naslund 1986, Naslund 1987, Naslund 1988a, Naslund 1988b, Pories 1982, Hall 1990) is the most commonly performed. The restrictive adjustable gastric band is increasing in use in the US and is the leading procedure performed outside of the US (Johnson 2004). The biliopancreatic diversion (BPD) with or without the duodenal switch (BPD DS) has also grown in use but is performed by a smaller number of practitioners. Growth in the use of any type of bariatric procedure over the last decade has been truly remarkable with over 120,000 procedures performed in 2003 compared to less than 20,000 performed in 1993 (Johnson 2004, Pope 2002). This growth may be related to the reported efficacy of these procedures, the availability of less-invasive laparoscopic procedures, a 10-12% yearly increase in the pool of surgical candidates (as defined by the 1991 National Institutes of Health (NIH) consensus conference criteria), by increased media exposure of celebrity patients who had successful bariatric procedures (Johnson 2004), and the identification of morbid obesity as a life-threatening disease (Calle, 1999; Flegal, 2005).

One of the more challenging issues facing health care providers and patients considering bariatric surgery is a lack of comprehensive and reliable data concerning risk stratification, effectiveness, and global outcomes. To facilitate and accelerate research in this area, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), with the support of the NIH Office of Research On Women's Health, established a Bariatric Surgery Clinical Research Consortium, now known as the Longitudinal Assessment of Bariatric Surgery consortium (LABS). LABS is comprised of six clinical centers and a Data Coordinating Center (DCC) working in cooperation with NIDDK scientific staff to plan, develop,

and conduct coordinated clinical, epidemiological, and behavioral research in the field of bariatric surgery.

Investigative centers in LABS include the University of Pittsburgh Medical Center (Pennsylvania), Columbia-Presbyterian Hospital and Cornell University (New York), East Carolina Medical Center (North Carolina), Neuropsychiatric Research Institute (North Dakota), Oregon Health & Science University and Legacy Good Samaritan Hospital (Oregon), and the University of Washington / Virginia Mason (Washington). The Data Coordinating Center is at the University of Pittsburgh, Graduate School of Public Health.

The overarching goal of LABS is to bring together researchers with expertise in bariatric surgery, obesity research, internal medicine, endocrinology, behavioral science, outcomes research, epidemiology, and other relevant fields to plan and conduct studies that will ultimately lead to a better understanding of bariatric surgery and its impact on the health and well-being of patients with obesity and obesity-related diseases. To achieve this goal, LABS will create and implement standardized measures and data collection instruments for patients undergoing bariatric surgery at participating clinical centers. Rigorously collected information on patient characteristics, surgical procedures, clinical and psychosocial outcomes, and health care utilization will ultimately lead to developing rational recommendations for clinical care. LABS is intended to develop evidence-based information regarding the risks and benefits of bariatric surgery. LABS will also submit serum and plasma specimens to the NIDDK-supported biospecimens repository. These specimens will be used to address the research aims of this study, and to be stored for future research into the pathophysiology of obesity and its complications.

LABS has designed a prospective, longitudinal cohort study with three components. LABS-1 includes all patients who are at least 18 years of age and who undergo bariatric surgery by LABS certified surgeons prior to December 31, 2007, with the primary goal of evaluating the short-term **safety** of bariatric surgery. Important adverse outcomes (i.e., death, rehospitalization, reintervention) occurring within 30 days of surgery are recorded to assess the relationship between short-term morbidity and mortality rates and various patient, operative, and post-surgical care characteristics. LABS-2, described in this protocol, will include a subset of patients from the LABS-1 cohort, with the primary goal of evaluating the longer-term **efficacy** of bariatric surgery. More extensive data collection (i.e. demographic, anthropometric, surgical, clinical, and behavioral) and longer follow-up will allow LABS-2 to identify longer-term safety and efficacy (up to 7 years) outcomes, both risks and benefits, and to determine their associations with patient, surgical, and post-surgical care characteristics. Finally, LABS-3, which will be developed in a series of future protocols, will include selected subsets of patients from the LABS-2 cohort to conduct detailed studies of **mechanisms** involved in weight loss and weight gain, energy expenditure, glucose control, and other aspects of the pathophysiology of obesity and obesity-related complications.

This protocol refers specifically to the LABS-2 component (**efficacy**) of LABS. A detailed description of the LABS-1 and LABS-3 components are addressed in separate protocols.

2 Objectives and hypotheses

2.1 Primary Objective

The primary objective of LABS-2 is to use standardized techniques and measures to assess the longer-term safety and efficacy of bariatric surgery by:

1. comparing post-surgical outcomes to pre-operative status
2. examining risks and benefits of surgery.

LABS-2 will determine the associations between clinical/demographic patient characteristics, components of the surgical procedure, and peri-operative and post-operative care with post-operative risks and changes in patient status.

The principal domains of research interest are delineated below and relate to achieving weight loss and changes in clinical and metabolic co-morbidities of obesity, psychosocial parameters, and quality of life. Additionally, post-operative sequelae as a result of undergoing surgery will be examined. These outcomes will be assessed prospectively for up to 7 years across a multi-center cohort of participants.

Weight Loss and Body Composition. The primary intent of bariatric surgery is to induce weight loss. The ability of bariatric surgery to meet this goal will be assessed by maximum weight loss and long-term patterns of weight loss or regain. LABS-2 will examine differences in weight loss, fat mass and fat-free mass, and waist and neck circumferences based on gender (hypothesizing greater weight loss in men (Ballantyne 2003)), diabetes mellitus (hypothesizing less weight loss among patients with diabetes (Perugini 2003, Schauer 2003)), pre-operative and post-operative physical activity level (hypothesizing a direct relationship between activity and weight loss (Boan 2004)), and surgical technique (hypothesizing greater weight loss maintenance with longer length of the bypass limb in gastric bypass surgery (Choban 2002, Brolin 2002)).

Diabetes Mellitus and Insulin Resistance. Type 2 diabetes mellitus (T2DM), the metabolic syndrome, and insulin resistance (IR) are common metabolic co-morbidities of obesity (Curtis 2005). Assessing the longer-term efficacy of bariatric surgery with respect to T2DM will be based on a clinical history of medication use and on serial measurements of HbA1c. Assessing efficacy for metabolic syndrome and IR will be based on changes in fasting glucose, insulin, lipoprotein profiles, resting blood pressure, waist circumference and clinical history of medications for treatment of hyperglycemia, hypertension, and dyslipidemia.

It is hypothesized that improvement of T2DM, metabolic syndrome, and IR will be related to maximal weight loss, maximal loss of fat mass, nadir BMI and physical activity level (Sjostrom 1999, Cummings 2004, Sugerman 2003, Greenway 2002, Orchard 2005).

Cardiovascular and Pulmonary Disease. Obesity is a risk factor for cardiovascular diseases (CVD) and sleep apnea (Guisti 2004, de Leiva 1998, Koch 1999, Valencia-Flores 2004, Vendrell 2004, Infanger 2003, Buchwald 2004). To assess the efficacy of bariatric surgery with respect to CVD, changes in the traditional factors listed above for IR as well as high-sensitivity C - reactive protein (hsCRP), a marker of systemic inflammation, will be measured. It is hypothesized that improvement of

CVD factors will be related to maximal weight loss, maximal loss of fat mass, and nadir BMI post surgery (Christ 2004, Reinehr 2004, Blumenthal 2000, Stefanick 1998, Schotte 1990). In addition, change in cardiac function will be measured by the time to complete a 400 meter corridor walk. It is hypothesized that the time to complete the 400 meter corridor walk will be directly related to age, degree of obesity (body mass index [BMI]), sex (longer in females), physical activity level, measures of diabetes mellitus (DM) and insulin resistance (IR), blood pressure (BP), liver function tests, inflammatory markers, and sleep apnea (Newman 2003). Furthermore, the time to complete the corridor walk is hypothesized to predict future events such that increased time or inability to complete the walk is related to subsequent cardiovascular clinical events and mortality (Miyamoto 2000, Zugck 2000). We will also evaluate the incidence of coronary heart disease, defined as sudden death, myocardial infarction or need for coronary revascularization post surgery. It is hypothesized that patients who are male and patients who have unchanging metabolic profiles associated with diabetes or PCOS will be at higher risk (Talbot 2004, Kannel 1979).

The prevalence of sleep apnea and changes from baseline status will be assessed by self-report via the Berlin Sleep Questionnaire and by use of continuous or bilevel positive airway pressure machines (CPAP or BiPAP). It is hypothesized that weight loss and reductions in neck circumference will be associated with improvements in sleep apnea.

Renal Disease. Obesity causes and complicates diabetes and hypertension, the two most common causes of kidney failure (Wiggens 2005). Furthermore, obesity in its own right can cause renal disease and may accelerate injury in glomerulonephritides (De Jong 2002). The mechanisms for the adverse effects of obesity on the kidney include its hypertensive and diabetogenic effects. Additionally, adipogenic hormones may have direct injurious actions in the kidney (Coresh 2004). Thus, weight loss is likely to improve indices of renal function. However, bariatric surgery itself has been associated with progressive renal disease through a variety of mechanisms (Khurana 2004). Renal function will be measured by serum creatinine and cystatin and urinary albumin and creatinine (spot urine).

It is hypothesized that albuminuria, the most sensitive index of chronic kidney disease, will diminish after successful bariatric surgery and that the renal function as reflected by serum creatinine will remain stable after successful bariatric surgery (Holzwarth 2002).

Liver Function and Size. The apparent increased prevalence of various forms of non-alcoholic fatty liver disease (NAFLD) in the obese population (Haynes 2004), and the growing identification of NAFLD when sought by liver biopsy among patients undergoing bariatric surgical procedures (Abrams, 2004) have both been the subject of recent publications. The limited data available thus far indicate that it would be important to determine the presence of NAFLD and define the prevalence of advanced forms, such as non-alcoholic steatohepatitis (NASH) and cryptogenic cirrhosis, by systematic intra-operative liver biopsy in a well defined bariatric surgical population. When a liver biopsy is taken during surgery as part of the clinical institution's standard practice, a portion will be studied by LABS investigators. The thickness of the left lobe of the liver will be assessed using a standardized measuring technique.

It is hypothesized that the prevalence and severity of the spectrum of non-alcoholic fatty liver disease are underestimated by traditional laboratory parameters, clinical assessment, and intra-operative visual inspection of the liver (Gholam 2002, Spaulding 2003). Additionally, it is hypothesized that severity of

the liver disease detected on intra-operative biopsy will correlate with short-term post-operative morbidity and mortality and that significant steatohepatitis detected on intra-operative biopsy will correlate with clinical and biochemical worsening of liver disease during periods of rapid post-operative weight loss (Capron 1982, Bradbury 2004). It is also hypothesized that hepatic iron accumulation in the fatty liver disease of the bariatric surgery population will be associated with more severe fibrosis (George, 1998). Furthermore, it is hypothesized that the prevalence and severity of fatty liver disease, controlled for age, BMI, and diabetes, will vary across racial and ethnic groups with the prediction that the most severe findings will occur in patients of Hispanic ethnicity, followed by non-Hispanic Caucasians, followed by African Americans, and that a multivariable combination of traditional clinical, demographic and laboratory assessments can be helpful in predicting the severity of NAFLD in obese patients (Ruhl, 2004).

We also hypothesize that increased liver size at the time of operation is associated with a higher rate of failed laparoscopic procedures due to problematic visualization of the gastroesophageal junction, a higher rate of intraoperative bleeding complications and that presurgical weight loss is associated with decreased liver size. To test these hypotheses we will assess the relationship of liver thickness, the rate of failed laparoscopic procedures secondary to visualization, the rate of liver bleeding and repair and pre-operative weight loss.

Behavioral Factors. Evidence suggests that pre-existing psychological and behavioral problems influence the outcomes, both short-term and long-term, of bariatric surgery (Herpertz 2004). In particular, it is hypothesized that subjects who have active untreated problems with alcohol or drug abuse, problems with binge eating, or problems with untreated depression will experience higher rates of surgical post-operative medical complications, less weight loss (Hsu 1998, Hsu 1996, Hsu 1997, Green 2004, Averbukh 2003), and less relative improvement in social functioning, quality of life, depression, and overall psychological status (Green 2004), while those who intentionally lose weight pre-operatively (van de Weijgert 1999) and those with more family/social support (Ray 2003, Hildebrandt 1998) will achieve greater weight loss. Furthermore, it is hypothesized that bariatric surgery will result in substantial improvements in social functioning (Choban 1999), quality of life (Dymek 2001), depression (Dixon 2003, Dymek 2001), and overall psychological status (Hsu 1998). The magnitude of the improvement in these parameters will positively correlate with the degree of weight loss. Additionally, depression that reoccurs or develops post-operatively will be associated with decreased improvement in quality of life (Moore 2005).

Gender Issues. Potential gender differences in longer-term efficacy of bariatric surgery for weight loss, maintenance of weight loss, prevalence of T2DM, parameters of metabolic syndrome, insulin resistance and magnitude of CVD risk factors will be examined. It is hypothesized that baseline insulin resistance severity will be more important than gender as a predictor of efficacy of bariatric surgery for DM and CVD risk factors. LABS-2 will also examine whether changes in sexual functioning are related to weight loss (Larsen 1990, Camps 1996, Trischitta 2003)

Women's Health. Women constitute the majority of patients who undergo bariatric surgery. Obesity is a risk factor for several health conditions specific to, or more common among, women, such as menstrual abnormalities (Norman 2004), infertility (Norman 2004), and urinary incontinence (Kapoor 2004). It is hypothesized that menstrual abnormalities (Crosignani 2003), fertility (Gerrits 2003), symptoms of polycystic ovarian diseases (Crosignani 2003), and urinary incontinence (Sugerman 2001)

will resolve following bariatric surgery. However, menstrual abnormalities may increase or show no improvement in the first 12 months following surgery when weight loss is often rapid (Schuetz 2004).

Risks of Bariatric Surgery. Bariatric surgeries impart potential long-term risks that are not necessarily faced by those who do not undergo such procedures or that differ depending on aspects of the surgical procedure (Deveney 2004). Thus, potential adverse outcomes such as death, outlet obstruction, wound complications, and surgical revisions and re-operations will be tracked. Pre-operative characteristics including demographics (e.g., sex, race), BMI, and co-morbidities will be examined for their relationships with these outcomes (Perugini 2003, Liu 2003, Livingston 2002). Additionally, the occurrence of stomal ulcer, PE/DVT, and dehydration will be examined in relationship to limb length, pouch size, and types of anastomoses used in the gastric bypass procedure. Hypotheses related to surgical risk are that males will have higher mortality than females, wound infections are more common among patients who undergo an open or laparoscopic converted to open bariatric surgery than among patients undergoing a laparoscopic procedure, that nutritional complications, including re-admission to hospital, will be more common in patients undergoing more malabsorptive operations than among those undergoing a more restrictive operation, that total morbidity is higher in males than females and is positively associated with pre-operative BMI, that African-Americans will have lower percent excess weight loss results following bariatric surgery than patients in other racial groups, and that patients who undergo bariatric surgery without any pre-operative thromboembolism prophylaxis will experience a higher deep vein thrombosis or pulmonary embolism rate than patients who do receive pre-operative prophylaxis.

Nutrient Deficiencies. Another potential long-term risk of bariatric surgery is nutrient deficiency (Alvarez-Leite 2004). LABS-2 will investigate micro-nutrient and macro-nutrient deficiencies by surgical procedure, hypothesizing more frequent occurrences with malabsorptive procedures (Brolin 2002, Ortega 2004, Skroubis 2002, Coates 2004, Faintuch 2004) and by various components of surgery (e.g., limb length, pouch size, and type of anastomoses in bypass surgeries (Brolin 2002, Chobin 2002)). Specifically, protein malnutrition secondary to deficient intake or malabsorption is hypothesized to occur from rapid weight loss, clinically important anemias are hypothesized to be due to a deficiency of vitamin B12 or iron, fat soluble vitamin deficiencies are hypothesized to be more frequent in patients undergoing duodenal switch procedures, and deficiencies of micronutrients related to bone health are hypothesized to be more frequent among patients with malabsorptive operative procedures.

Work Productivity and Activity. Obese workers have the highest prevalence of work limitations (6.9% vs. 3.0% among normal-weight workers) (Hertz 2004) and weight reduction interventions appear to increase productivity (Sartorio 2003). Severe obesity increases the number of work loss days and is an important factor in the workplace (Pronk 2004, Bungum 2003). The effects of weight loss surgery on productivity at work, absenteeism and presenteeism have not been well studied. It is hypothesized that patients undergoing bariatric surgery will have fewer days lost to work secondary to obesity compared with presurgery, that productivity at work, as measured by absenteeism and presenteeism, will be improved after surgery, and that the size of these effects will be associated with the extent of weight loss and the degree of initial obesity.

2.2 Secondary Objectives

1. To assess health care utilization of patients undergoing bariatric surgery for treatment of obesity and related co-morbidities.

2. To obtain and store biospecimens (serum, plasma, urine and tissue) for research related to the aims of LABS-2, and for future research into the pathophysiology of obesity and obesity related complications.

Specific hypotheses to be investigated from these secondary objectives are described below:

Health Care Utilization. Patient outcome following bariatric surgery is variable, and hence, so is subsequent use of health services. It is hypothesized that higher levels of BMI pre-surgery will be associated with higher post-surgery health services utilization; hospital readmission rates will be higher for patients who undergo BPD-DS compared to other surgical procedures; and patients who are more physically active following surgery will utilize fewer health services.

Biospecimens. Approximately, 55.5mL of blood and 4.5 of urine will be obtained from LABS-2 participants at pre-specified intervals (see §3.4). Fasting insulin, high sensitive C-reactive protein, lipid profile (HDL, LDL, total cholesterol, triglycerides), HbA1C, serum creatinine, cystatin C, urine creatinine, and urine albumin will be measured at a central laboratory. Aliquots of plasma and serum will be banked for future investigations into parameters such as changes in metabolic parameters and markers of risk. An additional 24mL of whole blood will be drawn to be used for DNA analysis. Additionally, if a liver biopsy is taken during surgery as part of the clinical institution's standard practice, a small portion will be studied by LABS investigators. Non-LABS investigators may access biospecimens through application via the LABS ancillary studies process or a process to be developed by the NIDDK Biospecimens Repository, where the specimens will be stored indefinitely. A spot urine test will be obtained and sent to a central laboratory for creatinine and albumin determinations. Aliquots of urine will be stored at the NIDDK Repository for use in future substudies on nutrition (e.g. – to measure bone markers).

3 Study Design

3.1 Study Summary. The primary goal of LABS-2 is to evaluate the efficacy and safety of bariatric surgery over a longer term than LABS-1, i.e., more than 30 days. Approximately 2,400 patients, will be recruited over 3 years. LABS-2 will include clinical assessments and detailed interviews and questionnaires pre-operatively and at several post-operative time points (30 days, 6 months, 12 months following surgery, and annually thereafter) to assess risks of surgery, and changes in clinical, metabolic, and psychosocial characteristics in patients, and health care utilization following bariatric surgery. Detailed data about the surgical procedure and peri- and post-operative care will also be collected to determine if components of the surgical procedure, and peri-operative and post-operative care as well as clinical/demographic patient characteristics are associated with post-operative risks and changes in patient status. Patients enrolled in LABS-2 will provide blood specimens pre-operatively and post-operatively to address LABS-2 hypotheses and additional samples will be stored at the NIDDK tissue repository for serologic, pathologic and genomic testing of other hypotheses.

3.2 Study Population

3.2.1 Sources of Patients. LABS-2 patients will be selected from people undergoing bariatric surgery at participating sites.

3.2.2 Inclusion Criteria

- Patients at least 18 years of age who undergo bariatric surgery by a LABS-certified surgeon
- Selected by a site-specific sampling algorithm to be approached for inclusion in LABS-2

3.2.3 Exclusion Criteria

- Informed consent not obtained
- Prior bariatric surgery
- Unlikely to comply with follow-up protocol (e.g., travel time from home too long to make visits feasible, unwilling to return for follow-up visits)
- Unable to communicate with local study staff

3.2.4 LABS-certified surgeon

- Performs bariatric surgery at one of the LABS clinical centers
- Has undergone training on the LABS protocol and data collection
- Has successfully completed a certification examination
- Agrees to adhere to LABS protocol and provide required data

3.2.5 Criteria for Study Withdrawal

- Patient withdraws consent
- NIDDK ends the study

3.2.6 Target composition of the database population. LABS-1 (see §1.1) will consist of patients aged 18 years and older undergoing bariatric surgery performed by LABS certified surgeons. Based on current patient demographics and surgeon practices in the participating clinical centers:

- approximately 84% of the patients are expected to be women
- approximately 25% are expected to have a BMI at least 50 kg/m^2
- approximately 18% are expected to be African American
- approximately 15% are expected to be Hispanic or Latino
- approximately 25% are expected to have type 2 diabetes
- approximately 2.5% are expected to undergo bariatric surgery with a BPD
- approximately 5% of patients are expected to have a laparoscopic adjustable gastric band placed
- approximately 20% of patients will have an anastomotic sealant used
- approximately 25% of patients will be prescribed low molecular weight heparin
- approximately 25% of patients will be prescribed subcutaneous heparin and
- approximately 25% will have both low molecular weight heparin and subcutaneous heparin
- approximately 22% will be planned open procedures

The goal of LABS-2 is to accrue 2,400 patients. This goal will provide a large enough sample of patients to detect odds ratios of at least 2.0 for categorical outcomes and small effect sizes for continuous outcomes (see § 4.2.4).

3.3 Study Visits and Database Contents. Pre-operative data will be collected (SITE SPECIFIC)… Patients will be seen 1-30 days prior to surgery for their LABS-2 baseline evaluation. Follow-up data collection will occur at approximately 30 days, 6 months, and 12 months following surgery, and annually. Starting with the 6-year visits, every other year during follow-up, a reduced battery will be collected during a minimal assessment visit in lieu of the standard in-person visit. During the odd years, participants will be asked to come in for the full LABS visit. There will also be data collected about the surgery and at hospital discharge following the bariatric surgery procedure. All data are collected during an in-person visit or via chart review. The tables below indicate the schedule of measures by study visit. A copy of all measures are included in the Appendix (see §10).

3.3.1 Clinical Forms and Biospecimen Collections

Measure/Test	Form Details	Contact time points						
		Pre-surgery/baseline	Pre-surgery/baseline Update	At time of initial discharge	30-days	6-month follow-up	12-months/full visits (odd years beginning Year 6)	Minimal Visits (even years beginning year 6)
Biospecimen collection*	Central (includes blood & urine)	X					X	
	Local	X				X	X	
	Genetics Repository	X					X	

	Biospecimen Repository (includes blood & urine)	X					X	
400 meter corridor walk	400 Meter Eligibility Form	X					X	
	400 meter corridor walk form	X					X	
Medication Collection	Medication form	X	X			X	X	X
Stepwatch Activity Monitor	Stepwatch Activity Diary	X					X	
Surgeon/Clinician Administered Forms	Surgeons/Clinician Medical Assessment	X					X	
	Post-surgical Hospital Discharge Questions			X				
	Post-Operative Evaluation Form				X			
	Health Care Utilization Form**					X	X	X
	6-month Follow-up Form					X		
	Research Coordinator Assessment	X	X				X	X***
	Short Form						X	X
	Minimal Visit Follow-up Form							X
	Events & Complications Form						X****	X
Self Assessment Forms	Demographic Information Questions	X					X	
	Pre-Bariatric Weight Loss Questions	X	X					

* Central Laboratory results will be provided to the DCC electronically and will neither require the completion nor entry of this form by the clinical sites. Local labs, at 6-months, will include ALT and AST only.

** The Health Care Utilization form will be administered if the patient reports being hospitalized or having an out-patient procedure. Protocol Amendment (V.7 / July 1, 2013): As of the local IRB approval date for this amendment, sites will forego the collection of the Health Care Utilization form beyond 48-months. Moving forward, information on events and complications after bariatric surgery will be captured through the Events and Complications (EC) and Short Form.

***The Research Coordinator Assessment Follow-up Form will only be completed if a participant comes in for the visit or there is not participant contact and weight and medications are obtained from medical charts.

**** Protocol Amendment (V.7 / July 1, 2013): As of the local IRB approval date for this amendment, sites will administer the Events & Complications Form.

Form Details	Contact time points						
	Pre-surgery/baseline	Pre-surgery/baseline Update	At time of initial discharge	30-days	6-month followup	12-months/full visits (odd years beginning Year 6)	Minimal Visits (even years beginning year 6)
Selected questions from Goals and Relative Weights Questionnaire (GRWQ)	X	X					
Weight Control Practices	X					X	
Questionnaire on Eating/Weight Patterns (QEWP-R)	X					X	
Weight Loss Practices & Eating Habits (L, AHEAD)	X					X	
Eating Beyond Satiation	X					X	
Tobacco use	X					X	
Alcohol use (AUDIT)	X					X	
Substance Abuse	X					X	
Beck Depression Inventory (BDI)	X				X	X	
Interpersonal Support Evaluation List (ISEL-12)	X					X	
Short Form Health Survey (SF-36)	X				X	X	
Work Productivity and Activity Impairment (WPAI:GH)	X					X	
Psychiatric & Emotional Test Survey	X					X	X
Impact on Weight Questionnaire (IWQOL – Lite)	X					X	
Gastrointestinal Symptoms Response Scale (GSRS)	X					X	
Urinary Incontinence Questionnaire	X					X	
Selected Questions from the Berlin Sleep Questionnaire	X					X	
Sexual Function Questionnaire	X					X	
Reproductive Health Questionnaire	X					X	
Self-assessment Medical Assessment	X					X	
Western Ontario and McMaster's University (WOMAC) Osteoarthritis Index	X					X	

Michigan Neuropathy Screening Instrument	X					X	
Cancer Diagnosis						X	
Excess Skin Questionnaire						X	
Suicide Behavior Questionnaire						X	
Weight Form						X	X
Reproductive Health Pregnancy							X
Cancer Follow-up							X

3.3.2 Surgical forms. Surgical forms will be completed by LABS certified surgeons and study coordinators.

Surgical forms:

- Adjustable Gastric Band
- Roux-en-Y Gastric Bypass
- Biliopancreatic Diversion (BPD)
- Biliopancreatic Diversion with Duodenal Switch (BPD-DS)
- Gastric Sleeve
- Vertical Banded Gastroplasty
- Adjustment to Gastric Sleeve
- Surgeon's Questionnaire

3.3.3 Other forms

- The **Surgeon's Experience Form** will be completed by LABS surgeons following certification.
- When a liver biopsy is taken as part of usual care during surgery, a liver sample will be processed and sent to a pathology laboratory for LABS-2, at which time, a liver **Pathology Evaluation form** will be completed by the central hepatopathologist.
- The **Adjudication Forms** (mortality and unconfirmed cause) will be completed by the Adjudication Committee. The information will include reason(s) for an intervention within 30-days of surgery if the reason could not be confirmed at the site. Criteria for confirmation are provided in the Manual of Operations. The Adjudication Committee will also determine all causes of deaths using information provided by the clinical sites through the Data Coordinating Center.
- The **Off-Protocol Form** will be completed by the study coordinator to report deviation(s) from study protocol (e.g., missed visit, incomplete data collection).
- An **Inactivation Form** will be utilized to report patient drop-outs or inactivations and reason(s) for dropping out or inactivation.
- An **Enrollment Form** will be completed to report those participants who are enrolled into LABS-2. This form reports whether patients provided consent to LABS-2 and whether they provided genetic consent, along with dates of consent. If the patient does not consent, the reason why is reported.

3.3.4 Corridor Walk. After a brief medical screening, eligible participants will be asked to complete a 400 meter corridor walk at their usual walking pace at baseline and annual study visits. Details are outlined in the manual of operations.

3.3.5 Stepwatch Activity Monitor. Participants will be asked to wear a StepWatch Activity Monitor (SAM) during the day for one week following baseline and annual study visits. The SAM is a highly accurate instrument the size of a small pager that is worn on the ankle. Consisting of a sensor, electronics and battery inside a polycarbonate case, the SAM is sealed and requires no adjustment by the wearer. The case is contoured to fit comfortably against the leg and an elastic attachment strap or soft cloth sleeve are used to ensure that the SAM remains securely attached to the ankle without irritating the skin. The SAM will continuously record the number of steps per minute over a week, allowing for a calculation of the amount of low, moderate and vigorous activity performed each day. After wearing the monitor for a week, the monitor will be returned to the study clinic by mail in a pre-addressed stamped envelope. Details are outlined in the manual of operations.

3.3.6 Biospecimens. Serum, plasma and urine will be collected pre-operatively and at scheduled LABS annual follow-up visits. Serum and plasma will be aliquoted into approximately 40 separate cryovials (20 serum and 20 plasma) in volumes of 0.5 mL for storage at the NIDDK repository for future research. Blood and urine will be collected from the pre and post-operative visits for fasting insulin, high sensitive C-reactive protein, lipid profile (HDL, LDL, total cholesterol, triglycerides), HbA1C, serum creatinine, cystatin C, urine creatinine, and urine albumin determinations as well as uncommitted specimens for the repository. Urine will be sent for storage at the NIDDK repository for future research. Also, three 8mL tubes of whole blood will be shipped to the NIDDK Genetics Repository and stored for DNA analysis. Participants in LABS-2 must agree to serum, plasma, and urine collection, but may opt out of specimens for DNA analysis.

Liver biopsies will only be collected as part of standard care at some of the clinical centers participating in LABS and not as a research procedure. Slides will be shipped to the study hepatopathologist for central reading.

3.4 Biospecimens Collection and Transmission to Repository. Samples will be collected and initially stored at the clinical centers. They will be sent in batches to the NIDDK Central Repositories, a research resource supported by the National Institutes of Health. Patients will be asked to provide urine samples and approximately three or four tablespoons of blood. Some samples will be sent to central laboratories and to the clinical institution's laboratory for testing. Other samples will be stored at the NIDDK Central Repository for future evaluation.

4 Data Analysis and Statistical Power

4.1. Data Analysis. The analytic approach to be used in LABS-2 centers principally on evaluating the efficacy of bariatric surgery across a broad range of patient outcomes, both short- (within 30 days) and longer-term (31 days-3 years), and within varying surgical procedures and specific patient subgroups. Given this wide scope of analysis, as exemplified by the large number of study hypotheses (section 2.1) and variety of anticipated data sources and data types, a broad range of statistical models shall be

utilized. The final analytic approach for a given hypothesis or area of investigation will be what is most appropriate given the nature of the data.

4.1.1. Data Description and Exploration. Descriptive and exploratory data techniques will form a critical first stage of the analytic process, illuminating data patterns, guiding further modeling, and aiding in data quality control. For both collected (raw) and created variables, graphical techniques such as histograms and boxplots will be examined to assess distributional forms, variability, and extent of outliers. Change over time (e.g., extent of weight loss), and bivariate relationships will be examined by scatter plots, side-by-side boxplots, or contingency tables depending on the types of variables.

4.1.2. Summary of Primary Statistical Methods. The LABS-2 longitudinal study design proposed, coupled with the time-varying nature of both predictor (e.g., eating patterns) and outcome (e.g., comorbidity resolution) permits analysis of study hypotheses at both a patient- and visit-level of analysis. Table 4.1 defines the primary statistical methods to be used to evaluate the wide range of LABS-2 hypotheses.

Table 4.1. Primary Analytic Methods Used to Evaluate LABS-2 Hypotheses

Outcome Variable	Measurement	Predictor Variable(s)	Measurement	Unit of Analysis	Primary Method(s) Of Analysis
Weight Loss and Body Composition:					
Max. weight loss	Continuous	Gender, diabetes, surgical technique	Categorical	Patient	Analysis of covariance (ANCOVA)
Max. Δ in fat mass	Continuous			Patient	
Max. Δ in fat free mass	Continuous			Patient	
Max. Δ in waist circumference	Continuous	Physical activity level (pre-op and post-op)	Continuous	Patient	Linear regression
Max. Δ in neck circumference	Continuous			Patient	
Patterns of weight loss	Continuous	SAME AS ABOVE	SAME AS ABOVE	Visit	Linear mixed models, piece-wise linear mixed models, non-linear hierarchical models
Pattern of weight regain	Continuous			Visit	
Diabetes Mellitus & Insulin Resistance:					
Reduction in diabetes	Categorical	Maximal weight loss, maximal loss of fat mass, nadir BMI	Continuous	Patient/Visit	Logistic regression, Discrete-time proportional hazards (pooled logistic regression)
Reduction in met. syndrome	Categorical			Patient/Visit	
Δ in insulin resistance	Continuous			Patient/Visit	Spearman correlation, linear regression, linear mixed models
CVD and Pulmonary Disease:					
Corridor walk time	Continuous	Age, BMI, insulin resistance, blood pressure, liver function, inflammatory markers	Continuous	Patient	Spearman correlation, linear regression
Corridor walk time	Continuous	Gender, diabetes, sleep apnea	Categorical	Patient	ANCOVA
Incident CVD, mortality	Categorical	Corridor walk time	Continuous	Patient	Survival analysis, Cox regression
Renal Disease:					
Δ in albuminuria	Continuous	Pre/post bariatric surgery	Continuous	Patient	Paired t-tests or analogous non-parametric methods
Δ in GFR	Continuous	Pre/post bariatric surgery	Continuous	Patient	

Table 4.1. (continued). Primary Analytic Methods Used to Evaluate LABS-2 Hypotheses

Outcome Variable	Measurement	Predictor Variable(s)	Measurement	Unit of Analysis	Primary Method(s) Of Analysis
Liver Function:					
Prevalence/severity of non-alcoholic fatty liver disease (NAFLD) (based on histology)	Categorical	Traditional assessment of NAFLD (labs, clinical assessment, visual inspection)	Categorical	Patient	Kappa statistic, predictive value negative
		Race/ethnicity, traditional demographic, clinical, and laboratory assessments	Categorical and continuous	Patient	Binomial and ordinal logistic regression
Short-term post-operative morbidity and mortality	Categorical	Severity of liver disease (biopsy)	Categorical	Patient	Poisson regression
Δ in liver disease (clinical and biochemical)	Continuous	Steatohepatitis (detected on biopsy), weight loss	Categorical	Patient/visit	Linear regression / linear mixed models
Liver fibrosis severity	Categorical	Hepatic iron accumulation	Continuous	Patient	Ordinal logistic regression
Behavioral Factors:					
Surgical post-discharge medical complications	Categorical	Pre-op untreated alcohol/drug abuse, binge eating, untreated depression	Categorical	Patient	Logistic regression
Δ in body weight	Continuous			Patient/Visit	ANCOVA, linear mixed models,
Δ in social functioning	Continuous			Patient/Visit	piece-wise linear mixed models,
Δ in quality of life	Continuous	Time since surgery, degree of	Continuous	Patient/Visit	non-linear hierarchical models
Δ in psychological status	Categorical	weight loss		Patient/Visit	Logistic regression, generalized estimating equations (GEE)
Δ in body weight	Continuous	Intentional pre-op weight loss	Continuous	Patient/Visit	Linear regression, linear mixed
		Extent of family/social support	Continuous	Patient/Visit	models, piece-wise linear mixed models, non-linear hierarchical models
Δ in quality of life	Continuous	Re-occur/post-op depression	Categorical	Patient/Visit	ANCOVA, linear mixed models
Gender Issues:					
Reduction in diabetes	Categorical	Gender	Categorical	Patient/Visit	Logistic regression, GEE
Δ in CVD risk factors	Categorical	Insulin resistance severity	Continuous	Patient/Visit	
Δ in sexual functioning	Continuous	Weight loss	Continuous	Patient/Visit	Linear regression / mixed models
Urinary incontinence	Categorical				Logistic regression / GEE

Table 4.1. (continued). Primary Analytic Methods Used to Evaluate LABS-2 Hypotheses

Outcome Variable	Measurement	Predictor Variable(s)	Measurement	Unit of Analysis	Primary Method(s) Of Analysis
Women's Health:					
PCOS, menstrual abnormalities, infertilty	Categorical	Time: PCOS, menstrual abnormalities, and infertility status before surgery and during follow-up after surgery	Categorical	Patient	McNemar's chi-square test
Risks of Bariatric Surgery:					
Complications – death, outlet obstruction, wound complications, surgical revision, re-operation	Categorical	Sex, race, pre-op comorbidities Pre-op BMI	Categorical Continuous	Patient	Survival analysis, Cox regression
Stomal ulcer, PE/DVT, dehydration	Categorical	Type of anastomoses used, limb length, pouch size	Categorical Continuous	Patient	Survival analysis, Cox regression
Nutrient Deficiencies:					
Protein malnutrition (albumin)	Categorical	Δ in body weight	Continuous	Patient	Logistic regression, GEE
Anemia	Categorical	Limb length, pouch size	Continuous	Patient	
Fat soluble vitamin deficiency	Categorical	Type of surgical procedure	Categorical	Patient	
Micronutrient deficiency related to bone health	Categorical	Type of anastomoses used	Categorical	Patient	
Health Care Utilization:					
Post-surgery health services utilization	Continuous	BMI pre-surgery Physical activity post-surgery	Continuous Continuous	Patient Patient	Linear regression
Hospital readmission rates	Categorical	BPD-DS versus other surgery	Categorical	Patient	Poisson regression

4.1.3. Analytic Issues. Given the large volume and wide range of data to be collected in LABS-2, coupled with repeated measurements over time, several analytic issues are germane to insuring valid assessment of the efficacy of bariatric surgery.

4.1.3.1. Assessment and Control of Confounding. Most, if not all, of the comparisons of efficacy will be based on non-randomized comparisons of patients with certain characteristics, specific operative techniques, or both. Hence, there will invariably be imbalances in characteristics predictive of outcome between the comparator groups of interest that must be adjusted for statistically to obtain valid estimates of effect. In general, the primary strategy to identify potential confounding variables will be to fit an initial basic predictor/outcome model (e.g., type of surgery performed and extent of long-term weight loss achieved) and then add individual covariates (potential confounders) singly in separate models to assess the relative change in the parameter estimate of interest (e.g., beta coefficient). If $\geq$10% change in the parameter estimate is observed for a particular covariate, this suggests the presence of appreciable confounding and need for statistical adjustment (Mickey 1989). This approach is favored since it is relatively invariant to sample size, a feature not present in standard stepwise selection procedures.

4.1.3.2 Assessment of Effect Modification. Many analyses anticipated will involve subgroup comparisons of the efficacy of bariatric surgery – in other words, do all patients achieve the same degree of benefit from weight loss surgery? To assess whether the effect of bariatric surgery is modified by specific patient characteristics, two primary approaches will be employed. These include stratified analyses to compare estimates of effect across levels of patient characteristics, and more formal tests of interaction. Formal tests of interaction are not selected as the primary analytic approach for the simple reason that they are heavily influenced by the sample size of the subgroups involved, and hence, often underpowered to detect meaningful interactions.

4.1.3.3. Loss to Follow-up and Missing Data. In LABS-2, as with many longitudinal studies, participant dropout or censoring, as well as missing data points, will likely be informative. For example, sicker patients and those with sub-optimal or conversely excellent post-surgery results may opt to discontinue participating or providing particular samples or questionnaire responses. Thus, the probability of missing outcome data may be dependent on covariate data and, hence, "non-ignorable" (Rubin 1976, Laird 1988). In circumstances when missing covariate and outcome data are missing completely at random (MCAR), the principle net effect of conducting a complete case analysis is loss of precision, whereas with other types of missing data, biased effect estimates may result. To assess the probable type of missing data, baseline covariates among patients with and without missing data will be compared. If missing data are judged as MCAR, the typical strategy will be to conduct a complete case analysis, recognizing a loss of precision. The exception to this strategy will be when considerable data (i.e. >15%) are missing on a particular covariate that is judged to be critical for inclusion in the analysis. In this instance, imputation will be considered (see below). This may be accomplished by unconditional or conditional mean imputation; these relatively simple approaches perform well when the overall percentage of missing data is low (Barzi 2004). In unexpected rare instances when the percentage of missing data is not low (i.e. >15%), more sophisticated multiple imputation methods may be employed (Rubin 1987. Strategies to account for missing outcome data will also be considered. For example, participants who drop out may be more likely to have weight

gain than those who return for all visits. One possible analytical approach would be to impute 0 weight loss for these individuals. When imputation schemes are employed, sensitivity analyses will be conducted to assess the robustness of findings to various imputation schemes and strategies for handling missing data.

4.2. Sample Size Estimates. As listed in Section 2.1, LABS-2 will evaluate the efficacy of bariatric surgery using a wide range of patient outcomes with various scales of measurement and across many scientific disciplines. Moreover, additional hypotheses regarding the efficacy of bariatric surgery will be developed and evaluated during the course of the study. For these reasons, sample size calculations have been provided for both binary and continuous outcome measures, assuming either single or repeated measurements, and assuming varying proportions of patients within subgroups to be compared. For simplicity, patient and surgical characteristics to be compared are based on two-group comparisons, recognizing that some characteristics may be evaluated using more than two groups and with alternative statistical methods, such as linear tests of trend. Finally, to be conservative, all calculations are based on desired power of at least 90% and two-sided alpha of 0.05.

4.2.1. Comparisons of Proportions Based on Single Outcome Measurement. Table 4.2.2 presents odds ratios detectable at 90% power for comparing binomial proportions of outcome occurrence given various sample sizes, event rates in the reference (control) group, and percentage of all subjects as controls. As seen, with an effective sample size ranging from 1200 to 3200 patients, detectable odds ratios range from 1.32 to 3.10. With the goal of having sufficient statistical power to detect odds ratios of 2.0 or higher, an effective sample size of 2000 patients is sufficient for all conditions with the exception of when a low event rate of 5% is observed in the reference subgroup coupled with a highly imbalanced design in which 90% of all subjects reside within the reference subgroup. Of note, these binomial comparisons of event rates and detectable odds ratios are conservative with respect to the frequent anticipated use of alternative survival analysis methods, when appropriate.

Table 4.2.2. Odds Ratios Detectable at 90% Power Given Various Sample Sizes, Event Rates in Control Subjects (Reference Group) and Proportions of Subject in Reference Group*

Sample Size	5% event rate in reference group			10% event rate in reference group			20% event rate in reference group		
% of reference group →	50%	75%	90%	50%	75%	90%	50%	75%	90%
1200	2.13	2.33	3.10	1.78	1.91	2.44	1.57	1.67	2.05
1400	2.03	2.21	2.90	1.71	1.83	2.30	1.52	1.61	1.95
1600	1.95	2.11	2.74	1.65	1.77	2.19	1.48	1.56	1.88
1800	1.88	2.03	2.61	1.61	1.71	2.11	1.45	1.53	1.81
2000	1.83	1.97	2.50	1.57	1.67	2.04	1.42	1.49	1.76
2200	1.78	1.91	2.41	1.54	1.63	1.98	1.40	1.47	1.72
2400	1.74	1.86	2.34	1.52	1.60	1.93	1.38	1.44	1.68
2600	1.71	1.82	2.27	1.49	1.58	1.88	1.36	1.42	1.65
2800	1.67	1.79	2.21	1.47	1.55	1.84	1.35	1.41	1.62
3000	1.65	1.76	2.16	1.45	1.53	1.81	1.33	1.39	1.60
3200	1.62	1.73	2.12	1.44	1.51	1.78	1.32	1.38	1.57

*Based on chi-square test with continuity correct and assuming 2-sided alpha of 0.05.

4.2.3. Comparisons of Proportions Based on Repeated Outcome Measurements. Table 4.2.4 presents odds ratios detectable at 90% power for comparing binomial proportions of repeated outcome measurements given various sample sizes, event rates in the reference group, and correlations between repeated measurements. These estimates illustrate the increase in variance that occurs (and hence required sample size) with correlated observations over time. The impact of this within-person correlation on the odds ratio that is detectable for a given sample size is illustrated in the formula below, as described by Diggle (2002).

$$m = \frac{\{z_\alpha(2p^*q^*)^{1/2} + z_Q(p_Aq_A+p_Bq_B)^{1/2}\}^2 (1+(n-1)\rho)}{nd^2}$$

where m = number of subjects needed per group
α = type I error rate
p = binomial proportion in each group (A, B), $p^* = (p_A + p_B) / 2$
$q = 1 - p$, $q^* = 1 - p^*$
$Q = 1$ – desired power (proportion)
n = number of repeated observations per person
ρ = correlation among repeated observations
d = smallest meaningful difference to be detected between groups A and B

All of the above estimates assume equal distribution of patients in the two groups being compared and four repeated outcome measurements. As seen, with an effective sample size ranging from 1200 to 3200 patients, detectable odds ratios range from 1.22 to 1.99. By way of comparison with single outcome measurements and equal distribution of patients in the two groups being compared (previous table 4.2), corresponding detectable odds ratios range from 1.32 to 2.13, indicating the gain in power achieved by use of repeated measurements.

Table 4.2.4. Odds Ratios Detectable at 90% Power Given Various Sample Sizes, Event Rates in Control Subjects (Reference Group), and Correlations Between Repeated Measurements*

Sample Size	5% event rate in reference group			10% event rate in reference group			20% event rate in reference group		
Correlation→	0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6
1200	1.71	1.86	1.99	1.50	1.60	1.69	1.37	1.44	1.51
1400	1.65	1.79	1.89	1.46	1.55	1.63	1.34	1.41	1.46
1600	1.61	1.72	1.84	1.43	1.51	1.58	1.32	1.38	1.43
1800	1.56	1.68	1.78	1.40	1.48	1.55	1.30	1.35	1.40
2000	1.53	1.64	1.73	1.38	1.45	1.51	1.28	1.33	1.38
2200	1.51	1.60	1.69	1.36	1.43	1.49	1.27	1.32	1.36
2400	1.48	1.57	1.66	1.34	1.41	1.47	1.25	1.30	1.34
2600	1.46	1.55	1.63	1.33	1.39	1.44	1.24	1.29	1.33
2800	1.44	1.53	1.61	1.31	1.37	1.43	1.23	1.28	1.32
3000	1.42	1.51	1.58	1.30	1.36	1.41	1.22	1.27	1.30
3200	1.41	1.49	1.56	1.29	1.35	1.40	1.22	1.26	1.29

*Assuming 2-sided alpha of 0.05, equal number of subjects in the two groups being compared, and a total of four outcome measurements per subject. The Correlation row in the table indicates the within subject correlation between repeated outcome measurements.

4.3. Comparisons of Continuous Outcome Variables Based on Single Outcome Measurement. Table 4.4 presents effect sizes (difference in mean scores between the 2 groups being compared / common standard deviation) detectable at 90% power given various sample sizes and proportion of all subjects in the control (reference) group. As seen, with an effective sample size ranging from 1200 to 3200 patients, detectable effect sizes range from 0.11 to 0.31. In general, effect sizes less than 0.2 are considered "small" and those from 0.2 to <0.5 are considered "medium" (Cohen 1988). Thus, an effective sample size of 1800 subjects will be sufficiently powered to detect "small" effect sizes under all conditions with the exception of a highly imbalanced design in which 90% of all subjects reside within the reference subgroup.

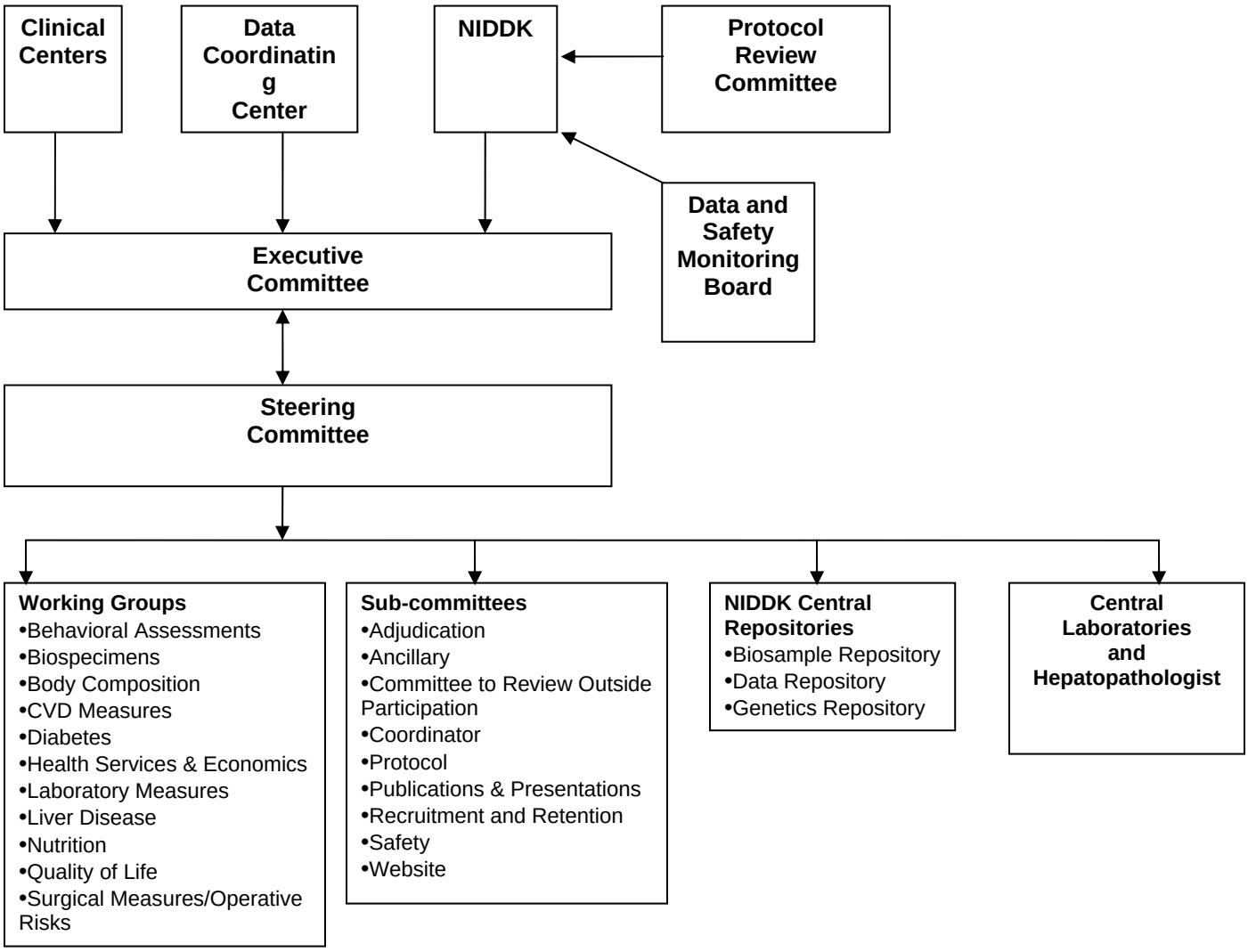
Table 4.4. Effect Sizes for Continuous Outcome Measures Detectable at 90% Power Given Various Sample Sizes and Proportions of Subjects in the Reference Group*

	% of All Subjects in Reference Group				
Sample Size	**50%**	**60%**	**70%**	**80%**	**90%**
1200	0.19	0.19	0.20	0.23	0.31
1400	0.17	0.18	0.19	0.22	0.29
1600	0.16	0.17	0.18	0.20	0.27
1800	0.15	0.16	0.17	0.19	0.25
2000	0.15	0.15	0.16	0.18	0.24
2200	0.14	0.14	0.15	0.17	0.23
2400	0.13	0.14	0.14	0.17	0.22
2600	0.13	0.13	0.14	0.16	0.21
2800	0.12	0.13	0.13	0.15	0.20
3000	0.12	0.12	0.13	0.15	0.20
3200	0.11	0.12	0.13	0.14	0.19

*Based on Student's *t* test and assuming 2-sided alpha of 0.05.

4.4.1. Target Sample Size. Based on the above sample size calculations and the desire to be able to detect odds ratios of at least 2.0 for categorical outcomes and "small" effect sizes for continuous outcomes, a target sample size of 2,400 patients is proposed. This exceeds the estimates of 2,000 patients for discrete outcomes under most circumstances (table 4.2) and 1800 patients for continuous outcomes (table 4.4) so as to conservatively allow for loss to follow-up ranging from approximately 16% to 25%.

5 Study Organization



5.1 Sites

Clinical Centers

- East Carolina University
- Neuropsychiatric Research Institute, Fargo ND
- New York Columbia-Presbyterian / Cornell / Valley Hospital
- Oregon Health & Science University / Legacy Good Samaritan Hospital
- University of Pittsburgh Medical Center
- University of Washington / Virginia Mason

Data Coordinating Center

- University of Pittsburgh, Graduate School of Public Health

5.2 Central pathology

- Project Hepatopathologist

5.3 NIDDK

- Project Scientist

5.4 Committees

Executive Committee: Manages day-to-day issues of the study; makes decisions required between the Steering Committee meetings as needed for efficient progress of the study, and reports its actions to the Steering Committee on a regular basis; organizes and sets agendas for Steering Committee meetings. Members consist of the two Steering Committee co-chairpersons, the Data Coordinating Center PI, and the NIDDK Project Scientist.

Steering Committee: Serves as the primary governing body of the study; responsible for policy decisions; votes on and approves all major decisions, provides oversight in planning the overall study design, approves protocols and subsequent amendments, facilitates study conduct and reporting of study results. Members consist of principal investigators of the clinical centers and the Coordinating Center, and the NIDDK project scientist. Two co-chairpersons were appointed by the NIDDK from among the clinical center investigators.

5.5 Subcommittees and Workgroups. Subcommittees work on specific areas of the study and make recommendations to the Steering Committee. Members consist of investigators from the clinical sites, Data Coordinating Center, and NIDDK, including individuals with expertise in the relevant areas.

Adjudication Committee (AC): The AC periodically reviews and classifies deaths and specified post surgical interventions for which the reason for the intervention could not be confirmed at the site (criteria for confirmation are detailed in the Manual of Operations). The AC will use information provided by the clinical sites through the Data Coordinating Center (DCC). Data, masked with respect to patient and medical staff (physician, surgeon, etc.) will be sent to the DCC from the clinical center at which the death or unconfirmed event occurred. The

AC will not interact directly with the LABS clinical investigators concerning the results or the classification of events.

Ancillary Studies Subcommittee (ASC): The ASC evaluates protocols that enhance the ability of LABS: [1] to document the efficacy and complications of bariatric surgery and its role in the overall management of obesity; and [2] to address other important questions related both to clinical aspects of obesity and its co-morbidities and underlying mechanistic and other basic science issues. The LABS Steering Committee has designated the ASC to conduct an initial review of all proposed ancillary studies. The Steering Committee must ultimately approve all ancillary studies recommended for its consideration by the ASC to ensure that they do not impose an unacceptable burden on LABS staff or participating patients or conflict with the aims of LABS. Data collection for funded ancillary studies may not proceed without the approval of the Steering Committee.

Committee to Review Outside Participation (CROP): The CROP supports and develops LABS through industry relationships while maintaining the integrity of LABS research. The CROP works together with the NIDDK to solicit and oversee sponsored research agreements, materials transfer agreements and cooperative research and development agreements. Through these relationships, LABS hopes to further its mission to provide a platform for future bariatric surgery research.

Coordinators Subcommittee: The Coordinators Subcommittee attends to the day-to-day operations of the study including recruitment, protocol adherence, consistent and complete data collection at each clinical center; and makes recommendations to the Steering Committee regarding any study issues that may require modification or resolution.

Protocol Subcommittee: The Protocol Subcommittee prepares the final written protocol and thus prepares summary, background information, study design, inclusion and exclusion criteria, definitions for surgical methods, monitoring schedule, adverse event grading, statistical analysis, patient protection, and references sections of the protocol; develops details of the protocol and study design for Steering Committee and DSMB approval. A subcommittee of the Protocol Committee will prepare the template consent forms for the study.

Publications/Presentations Subcommittee: Develops the policy for publications regarding preparation of abstracts, presentations, and manuscripts; policy as regards to requesting data analysis, authorship policy, and other issues related to publications; prepares a formal publication policy for full manuscripts and abstracts; prepares a list of possible publications that will arise from this study, and prepares paragraphs regarding the scope of each and how they intersect with the designated final major manuscript to arise from this study.

Recruitment and Retention Subcommittee: Attends to all facets of participant recruitment and retention. Committee members prepare strategies that can be implemented study wide to maximize recruitment and to maintain participants in the study.

Safety Committee: The Safety Committee provides on-going review of safety issues related to all of LABS studies. In defining the role of the Safety Committee, it is important to emphasize

that LABS- -2 is observational cohort studies so that the decision to perform bariatric surgery, the type of bariatric surgery and related pre-operative and post-operative management of the individuals who agree to be study participants in LABS is governed by clinical decision making and is not specified by the study protocol *per se*. The Safety Committee will be kept apprised of the summary findings of the Adjudication Committee, but the main charge of the Safety Committee is to focus upon the risk of procedures specific to the various LABS protocols, including LABS-3 mechanistic studies and separately funded ancillary studies.

The procedures specific to LABS pertain to the gathering of research data, and include blood drawing, the 400 meter corridor walk, and a variety of self-report questionnaires, many of which concern potentially sensitive personal information. The Safety Committee will be comprised of a chair, a representative from each clinical site, from the DCC and from the NIH.

The Safety Committee is charged:

- To establish safety parameters and procedures for collecting data pertaining to the safety of participation in the LABS protocols and related Ancillary studies, so that the relevant information can be gathered at clinical sites and collated by the DCC for review by the Safety committee;
- To review at regular intervals data related to the overall safety of study participation in LABS (protocols 1 through 3) and in any Ancillary studies;
- To review at regular intervals summary findings from the Adjudication committee for areas that may relate to the overall safety of LABS or the safety at an individual clinical site;
- To develop reports, with the assistance of the DCC, for presentation to the Steering Committee and to the Data and Safety Monitoring Board related to participant safety; and
- To address IRB issues that arise related to participant safety; and

Website Subcommittee: Recommends design of the website for research use and for public consumption. The latter includes general information about obesity and bariatric surgery, a description of LABS, including the goals of the study, the core information database, clinical projects and ancillary study guidelines; and contact information at the clinical sites for persons interested in enrolling in the LABS.

Working Groups:
Behavioral Assessments
Bio-Specimens
Body Composition
CVD Measures
Diabetes
Executive Committee
Health Services & Economics
Laboratory Measures
Liver Disease
Measures/Operative Risk

Nutrition
Quality of Life
Steering Committee

5.6 Advisory Groups to the NIDDK. The Data and Safety Monitoring Board (DSMB) will act in an advisory capacity to the National Institute of Diabetes, Digestive and Kidney Diseases (NIDDK) to monitor conduct of the studies undertaken by the Longitudinal Assessment of Bariatric Surgery consortium (LABS).

DSMB Responsibilities. The initial responsibility of the DSMB will be to approve the initiation of each study. After this approval, and at periodic intervals during the course of the study, the DSMB responsibilities are to:

- review the research protocols, including all proposed revisions, informed consent documents and plans for data and safety monitoring;
- evaluate the progress of the studies, including periodic assessments of data quality and timeliness, participant recruitment and retention, participant risk versus benefit, performance of the clinical sites, and other factors that may affect study outcome;
- consider factors external to the study when relevant information becomes available, such as scientific or therapeutic developments that may have an impact on the safety of the participants or the ethics of the study;
- evaluate and report the safety of the study participants;
- make recommendations to the NIDDK, the LABS Executive Committee, and, if required, to the Food and Drug Administration (FDA) and the Institution Review Boards (IRB) concerning continuation, termination or other modifications of the studies;
- ensure the confidentiality of the study data and the results of monitoring; and
- assist the NIDDK by commenting on any problems with study conduct, enrollment, sample size, or data collection.

Membership. The DSMB consists of at least eight members (See Appendix 2) Five members will constitute a quorum. The members have been appointed by the NIDDK in consultation with the LABS Executive Committee. Members of the DSMB shall have no financial, scientific, or other conflict of interest with the study. Collaborators or associates of the investigators in this study are not eligible to serve on the DSMB. Written documentation attesting to absence of conflict of interest is required.

Patrick O'Neil, PhD, has been selected by the NIDDK to serve as the DSMB Chairperson. He is responsible for overseeing the meetings and developing the agenda in consultation with the NIDDK Project Scientist, Mary Horlick, MD, and the LABS Executive Committee. Ms. Rebecca Torrance will serve as the DSMB Executive Secretary (ES). The Chairperson is the contact person for the DSMB. Other NIDDK official(s) may serve as an *ex-officio* member(s) of the

DSMB. The Data Coordinating Center (DCC), University of Pittsburgh, shall provide the logistical management and financial support for the DSMB.
The Chair of the LABS Safety Committee James Mitchell, MD, will be the LABS contact for reporting any safety issues to the DSMB, including adverse event reporting. Procedures for notifying the Chair of the DSMB and the NIDDK Project Scientist will be discussed and approved by the DSMB. Those procedures will be part of, and included in, the data and safety monitoring plan.

Board Process.The DSMB will meet a minimum of twice a year at the call of the Chair, with advance approval of the NIDDK Project Scientist. An NIDDK representative will be present at every meeting. Meetings shall be closed to the public because discussions may address confidential patient data. Meetings are attended, when appropriate, by members of the LABS Executive Committee, members of DCC staff, study Principal Investigators, and members of their staff. Meetings may be convened as conference calls as well as in person. An emergency meeting of the DSMB may be called at any time by the Chairperson or by the NIDDK Project Scientist should questions of patient safety arise. The DSMB Chairperson should contact the NIDDK Project Scientist prior to convening the meeting.

Meeting Format. An appropriate format for DSMB meetings consists of an open, closed and executive session. This format may be modified as needed.

Open Session:
The voting members of the DSMB, the NIDDK staff, the LABS Executive Committee, and members of the Data Coordinating Center staff including a study biostatistician will attend the open session. Issues discussed will include the conduct and progress of the studies, including patient recruitment, data quality, compliance with protocol, safety issues, and any other logistical matters that may affect either the conduct or outcome of the studies. Proposed protocol amendments will also be presented in this session.

Closed Session:
The closed session will be attended only by voting DSMB members, the NIDDK Project Scientist, other NIDDK representatives as appropriate, the DSMB executive secretary, and a study biostatistician. **The discussion at the closed session is completely confidential.**
Site-specific data on patient characteristics and outcomes will be presented in closed session. Subgroup data for the mechanistic studies (LABS-3) will be reviewed in closed session. This may include any or all of the following: baseline characteristics, primary and secondary outcomes, adverse events, adherence, and dropouts. Interim analyses (if done) will be reviewed in closed session.

Executive Session:
The executive session will be attended by voting DSMB members, the NIDDK Project Scientist, other NIDDK representatives as appropriate, and the DSMB executive secretary.
The DSMB will discuss information presented during the closed and open sessions and decide whether to recommend continuation or termination, protocol modification or other changes to the conduct of the studies.

Should the DSMB decide to issue a termination recommendation, full vote of the DSMB will be required. In the event of a split vote, majority vote will rule and a minority report should be appended. Reasons for early termination include:

- Serious adverse effects resulting from participation in LABS studies
- Logistical or data quality problems so severe that correction is not feasible.

Final Open Session (optional):

The final session may be attended by voting DSMB members, Executive Committee members, the LABS-3 Principal Investigators, a study biostatistician or other DCC members, and the NIDDK staff. Other participants may attend at the discretion of the NIDDK Project Scientist. The Chairperson of the DSMB, the NIDDK Project Scientist, or the Executive Secretary shall report on the recommendations of the DSMB regarding study continuation and concerns regarding the conduct of the study. Requests regarding data presentation for subsequent meetings will be made. Scheduling of the next DSMB meeting may be discussed.

REPORTS

Interim Reports to the DSMB: Interim reports will be prepared by the Data Coordinating Center.. The reports will be distributed to the DSMB and the NIDDK Project Scientist at least 10 days prior to a scheduled meeting. These interim reports are numbered and provided in sealed envelopes within an express mailing package or by secure email as the DSMB prefers. The contents of the report are determined by the DSMB. Additions and other modifications to these reports may be directed by the DSMB on a one-time or continuing basis. Interim data reports generally consist of two parts:

Part 1 (**Open Session Report**) provides information on study aspects such as accrual, baseline characteristics, safety reports, and other general information on study status. This report is generally shared with all investigators involved with the study. The reports contained in this section will include:

- Comparison of Target Enrollment to Actual Enrollment by Month
- Comparison of Target Enrollment to Actual Enrollment by Site
- Overall Subject Status by Site, including: Subjects Screened, Enrolled, Active, Completed and Terminated
- Aggregated Demographic and Key Baseline Characteristics of Participants
- Adverse Events/Serious Adverse Events by Site and Subject

Part 2 (**Closed Session Report**) may contain data on outcomes and safety data. Mechanistic study data should be reported by subgroup in the closed report. The Closed Session Report is considered confidential and should be destroyed at the conclusion of the meeting.

Reports from the DSMB: A formal report containing the recommendations for continuation or modifications of the study, prepared by the executive secretary with concurrence from the DSMB, will be sent to the Executive Committee. This report will also contain any recommendations or requirements from the NIDDK in reference to the

DSMB recommendations. It is the responsibility of the Executive Committee to distribute this report to all co-investigators and to assure that copies are submitted to all the IRBs associated with the study.

Each report should conclude with a recommendation to continue or to terminate each of the studies. This recommendation should be made by formal majority vote. A termination recommendation may be made by the DSMB at any time by majority vote. The NIDDK is responsible for notifying the Executive Committee of a decision to terminate the study. In the event of a split vote either in favor of, or opposed to, continuation, a minority report should be contained within the regular DSMB report. The report should not include any confidential data.

Mailings to the DSMB: On a quarterly basis, site-specific recruitment, retention, and safety data should be communicated to all DSMB members, the NIDDK Project Scientist, and the DSMB executive secretary. Any concerns noted by the DSMB should be brought to the attention of the NIDDK Project Scientist.

Confidentiality. All materials, discussions and proceedings of the DSMB are completely confidential. Members and other participants in DSMB meetings are expected to maintain confidentiality.

6 Human Subjects Issues

6.1 Overview. The study protocol, consent forms, and data collection forms will be submitted to each clinical center's Institutional Review Board (IRB) and to the DCC's IRB. Additionally, each clinical center will submit any recruitment materials to be used at their site to their IRB. A site may not initiate any patient contact for LABS-2 until the site has IRB approval. All study personnel will have completed training in the Protection of Human Subjects per NIH guidelines.

6.2 Institutional Review Board Approval. It is the investigator's responsibility to ensure that the LABS-2 protocol and informed consent documents are reviewed and approved by the appropriate IRB. Each clinical site must obtain a letter of approval from the IRB prior to enrolling patients into this study. Sites must provide the DCC with copies of the initial IRB approval notice prior to enrolling the first patient, and subsequent renewals, as well as copies of the IRB approved consent. Additionally, the NIDDK must review the IRB approved informed consent prior to enrollment.

The IRB must also review and approve any other written information provided to the patient prior to any registration of patients.

If, during the study, it is necessary to amend either the protocol or informed consent document, the investigator will be responsible for ensuring the IRB reviews and approves the amended documents. IRB approval of the amended informed consent document must be obtained before new patients consent to participate in the study using the new version of the consent.

The informed consent document will inform patients of their right to refuse any release of their protected health information.

6.3 Informed Consent

6.3.1 Informed Consent Document. A sample informed consent document has been provided at the end of this protocol (see Appendix). Each clinical site, according to local IRB requirements, is allowed to modify this informed consent document and make any necessary editorial changes as long as the meaning or intent of any section is not changed.

6.3.2 Informed Consent Process. The investigator or his/her designee (i.e., research coordinator or study nurse) will inform the patient or the patient's legally authorized representative of all aspects of the study pertaining to the patient's participation in the study.

The process for obtaining informed consent will be in accordance with all applicable regulatory requirements. The informed consent document must be signed and dated by the investigator or his/her designee and the patient BEFORE the patient can participate in the study. Once a candidate for LABS 2 has been identified, details will be carefully discussed with the subject. The subject will be asked to read and sign the two sections of the IRB-approved LABS-2 informed consent document. The first informed consent grants permission to collect information on a participant's health via questionnaires, laboratory values and urine samples while the second section allows for the collection, storage, and use of DNA for genetic research from his/her blood samples. Refusal to sign the genetic informed consent section will not preclude a participant from participating in LABS-2 as long as the primary consent form document is signed. The patient will receive a copy of all signed and dated documents and the originals will be retained in the patient's study file or medical record.

6.3.3 Research Study Costs: Remuneration:. Subjects will not be paid remuneration to participate in this study. Subjects will be reimbursed for some expenses related to the burden of participating in the study.

6.4 Confidentiality of Patient Data. The clinical site is responsible for the confidentiality of the data associated with patients enrolled in this study in the same manner that it is responsible for the confidentiality of any patient information within its sphere of responsibility. All forms used for the study data will be identified by coded identification number, which will be generated at the clinical center, to maintain subject confidentiality. All records will be kept in locked file cabinets at the clinical centers with access limited to LABS-2 study staff, and all study staff will identify patients via their unique identifier. Clinical information will not be released without written permission of the participant, except as necessary for monitoring by the IRB or Data & Safety Monitoring Board (DSMB). Clinical information may be reviewed during site visits by the DCC and the NIDDK Project Scientist. The patient grants permission to share research data with these entities in the consent document. Federal regulations govern the protection of patient's rights relative to data confidentiality and use of research data.

Consent procedures and forms, and the communication, transmission and stoppage of patient data will comply with individual site IRB and NIH requirements for compliance with The Health

Insurance Portability and Accountability Act (HIPAA). The Privacy Rule of HIPAA governs the protection of an individual's identifiable health information. The DCC will ensure that clinical centers associated with the project are complying with HIPAA regulations by requiring documentation from the IRBs with the appropriate authorization or consent form. The DCC will maintain copies of all relevant documents from each clinical center. If IRB approvals are not current, data will not be accepted by the DCC. The LABS-2 data management system will ensure the confidentiality of electronic protected health information. The DCC will work with the NIDDK Data and Specimen Repositories to determine their requirements for maintaining participant confidentiality.

6.5 Risk/Benefit Ratio. The risk of physical harm associated with participating in the LABS-2 study is limited. Blood drawing can cause temporary discomfort or bruising at the skin puncture site and in, rare instances (less than 1%), fainting or an infection can occur. The 400 meter corridor walk may cause chest pain, tightness or pressure in the chest, shortness of breath, feeling faint, lightheaded or dizzy, or leg pain. The test will be stopped immediately if any of these symptoms do occur. During the 400 m walk tests, a fully stocked crash cart is available with all necessary emergency equipment (drugs, defibrillator, and airway management).

Of minimal risk to patients is the possible inconvenience of reporting medical status to the research coordinator. Some of the questions may be upsetting. For example, questions will be asked regarding alcohol and drug abuse, sexual practice and emotional problems such as depression. You will be informed that you can decline to answer any questions you wish not to answer. Another possible risk is a breach of confidentiality, although steps have been taken to minimize such an occurrence. All information collected for this research study will be kept confidential. Patients' names will be used only for the informed consent form and medical chart reviews. Patients will be given unique study identifiers, which will be written on all data collection forms. In addition, data collection forms will be kept in a locked file cabinet or locked room and a secure database that can only be accessed by the investigators (and their research staff) listed on the consent form. Patient names will not be recorded in the computerized study database. There will be close communication between the PI, the data entry personnel and the clinic and research staff to ensure the quality and accuracy of the data collected. Each member of the study team will meet with the PI and review confidentiality issues, prior to having contact with research subjects. Blood and urine samples will be labeled with unique patient identifiers and not patients' names before shipment to central facilities. To help us protect patients' privacy, we have obtained a Certificate of Confidentiality from the National Institutes of Health. Known breaches of confidentiality will be reported to NIDDK.

There will be no direct benefits to patients who participate in LABS-2 only nominal remuneration (see § 6.3.3). Clinically relevant measurements will be made available to the patient and their physician with their permission. Participation may benefit other patients who undergo weight-control surgery.

6.5.1 Data and Safety Monitoring Plan. A data and safety monitoring committee will oversee the study. Their main tasks are to ensure that there are no changes in the risk/benefit ratio during the course of the study, that the study is implemented appropriately, and that the confidentiality of research data is maintained. Investigators and study personnel will meet routinely to discuss

the study (e.g., study goals and modifications of those goals; subject recruitment and retention; progress in data entry; documentation, identification of adverse events or research subject complaints; violations of confidentiality) and address any issues or concerns at that time. Minutes will be kept for these meetings. The yearly IRB renewal for this study will include a summary report of the Data and Safety Monitoring Board recommendations from the prior year.

7 Adverse Event Reporting

Any instances of adverse events occurring as a result of procedures performed solely for research purposes, as opposed to standard clinical care, will be reported immediately to the local site IRB using the standard forms and procedures that have been established by the IRB.

7.1 Definitions

Serious Adverse Event
An adverse reaction is considered serious if it is fatal or life-threatening; requires or prolongs hospitalization; produces a disability; or results in a congenital anomaly/birth defect.

Severity of Adverse Event
An adverse reaction is considered to be of moderate or greater severity if it requires medical evaluation (such as additional laboratory testing) or medical treatment; or if it is a serious adverse reaction.

Unexpected Adverse Event
An adverse reaction is considered to be unexpected if it is not identified in nature, severity or frequency in the current IRB-approved research protocol or informed consent process

Adverse Event Associated with Research Intervention
An adverse reaction is considered to be associated with the research intervention if there is a reasonable possibility that the reaction may have been caused by the research intervention (i.e., a causal relationship between the reaction and the research intervention cannot be ruled out by the investigator(s)).

Relatedness
With respect to the research intervention, an adverse event can be considered to be definitely, probably, possibly, or unrelated, or relatedness may be indeterminate.

7.2 Guidelines for Adverse Event Reporting. Investigators involved in LABS-2 will report to their local IRB, the DCC, NIDDK and the DSMB, serious adverse events which are a result of a research-specific procedure or intervention (i.e., venipuncture, corridor walk, StepWatch monitoring). All deaths, regardless of relationship to the study, are deemed serious and must be reported as a serious adverse event. Moreover, investigators involved in LABS-2 will report to their respective IRB, external adverse events which are unexpected, serious and associated with a research-specific procedure or intervention. Any instances of adverse events that necessitate reporting as defined above will be reported immediately to the local IRB using the standard forms and/or procedures that have been established by that IRB.

Adverse reactions which are determined by the investigator to be unrelated to research-specific procedures or interventions need not be reported to the local IRB, unless the local IRB requires otherwise.

8 Other Considerations

8.1 Clinical site eligibility. The clinical site must be formally part of or affiliated with one of the six institutions (East Carolina University, Neuropsychiatric Research Institute [Fargo ND], New York Columbia-Presbyterian / Cornell / Valley Hospital, Oregon Health & Science University, University of Pittsburgh Medical Center, University of Washington / Virginia Mason) participating in the LABS consortium.

8.2 Clinical Site Audits. All clinical sites at which patients are enrolled are subject to an on-site audit by the Data Coordinating Center.

8.3 Performance Monitoring The DCC will perform statistical analyses and prepare materials for monitoring study progress (e.g., recruitment, retention, data processing timeliness and accuracy) and protocol adherence (e.g., proportion of follow-up visits completed on time). For example, reports of observed vs. expected recruitment, and timeliness of data collection and data entry by site will be routinely posted in the private area on the project web site. The pre-established amount of time expected for completing forms will be compared to the actual amount of time required to process the forms.

Problems with adhering to study protocols, data collection, entry, and management will be identified and addressed. Site visits will provide a means for the DCC to become familiar with personnel and basic practices and procedures at each center. With problems identified, solutions can be found and proper procedures implemented to prevent future problems.

Another critical dimension will be the quality of data entry. During data audits at the clinical centers, the DCC will visually check randomly selected source documents, as well as source documents selected because of suspected problems, against the computerized version. The number and nature of errors will be tabulated. These audits will also provide information about the accuracy of data collection.

Inadequate performance in any aspect of the study (e.g., protocol adherence, data collection, data entry, data completeness, data accuracy) will be reported to the site principal investigator and NIDDK project scientist. A subsequent evaluation will be performed to determine whether corrections have been made. Should problems persist, the Steering Committee will be notified and recommendations will be made for resolving persisting inadequacies.

8.4 Inclusion of Women and Minorities. Based on current referral rates of patients undergoing bariatric surgery, LABS expects a ratio of female to male patients at approximately 4 to 1, reflecting surgical populations at the LABS sites. It is anticipated that approximately 18% of the LABS-2 cohort will be African-American and 13% will be Hispanic. The proportions of

other minority groups are expected to be less than 1%, reflecting the surgical populations at the LABS sites.

8.5 Remote Visits to Enhance Retention. To enhance retention, LABS coordinators may utilize Examination Management Services, Inc. to conduct remote study visits. The field representative from Examination Management Services, Inc. will be a trained healthcare professional, subject to confidentiality rules and will be required to become certified on the LABS protocol prior to performing a subject visit. LABS participants who agree to a remote visit will sign an addendum consent form to indicate their permission to provide data to EMSI.

The EMSI representative will be responsible for obtaining data collection forms, weight and physical measurements (waist and neck circumferences) and biospecimens including blood and urine. The EMSI representative will transmit collected data and biospecimens back to the originating clinical center for data entry and biospecimen processing.

In the event of an adverse event or unexpected problem during the visit, the EMSI examiner must report it to EMSI National Service Center (NSC) immediately by phone. EMSI NSC will notify the site coordinator and DCC central study coordinator immediately.

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10 Appendix

Data and Safety Monitoring Board Roster
for Longitudinal Assessment of Bariatric Surgery

Chair:
Patrick O'Neil, Ph.D.
Professor and Director, Weight Management Center
Department of Psychiatry
Medical University of South Carolina
Charleston, SC
Expertise: Psychology, behavioral science, obesity and weight management

Members:
John Alverdy, M.D.
Professor of Surgery
Department of Surgery
University of Chicago
Chicago, IL
Expertise: Bariatric Surgery

Walter T. Ambrosius, Ph.D.
Associate Professor
Section on Biostatistics, Department of Public Health Sciences
Wake Forest University School of Medicine
Winston-Salem, NC
Expertise: Statistics

Daniel Bessesen, M.D.
Associate Professor
Division of Endocrinology, Department of Medicine
University of Colorado Health Sciences Center
Denver, CO
Expertise: Endocrinology, obesity, clinical nutrition, and metabolism

Hari Conjeevaram, M.D.
Assistant Professor
Department of Internal Medicine
Division of Gastroenterology
University of Michigan Health System
Ann Arbor, MI
Expertise: Hepatology, epidemiology, and clinical trials design

Robert Kushner, M.D.
Medical Director, Wellness Institute and Nutrition, and Fitness and Weight Management Programs
Northwestern Memorial Hospital
Professor of Medicine
Northwestern University Medical School
Chicago, Illinois
Expertise: Clinical obesity management, effects of diet and exercise on body weight, body composition and energy expenditure, physician education in obesity

Aviva Must, Ph.D.
Associate Professor
Department of Public Health and Family Medicine
Tufts University School of Medicine
Boston, MA
Expertise: Epidemiology

Harry Sax, M.D.
Department of Surgery
The Miriam Hospital
164 Summit Avenue
Providence, RI 02906
Expertise: Baratric surgery, clinical nutrition, enteral and parenteral nutrition

NIDDK Representatives:
Mary Horlick, MD.
Project Scientist
Division of Digestive Diseases and Nutrition
NIDDK
National Institutes of Health
6707 Democracy Blvd.
Room 679
Bethesda, Maryland 20892-5450
(For UPS, FedEx: use 20817)
Phone: 301-594-4726
Fax: 301-480-8300
Email: horlickm@niddk.nih.gov

Rebecca Torrance, RN, MSN (Executive Secretary)
Clinical Trials Specialist
Division of Digestive Diseases and Nutrition
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
6707 Democracy Blvd., Rm 646
Bethesda, MD 20817

Phone: 301-594-7024
Fax: 301-480-8300 (Fax)
Email: torrancer@niddk.nih.gov

Consent Form

[local institution]

LABS-2 CONSENT FORM

Please Note: This is NOT the consent for your surgery

Longitudinal Assessment of Bariatric Surgery (LABS)

Local Personnel

Principal Investigator
Surgical Investigators
Research Coordinators

National Sites

East Carolina University
Neuropsychiatric Research Institute
New York Columbia-Presbyterian / Cornell University Medical Center
Oregon Health & Sciences University / Legacy Good Samaritan Hospital
University of Pittsburgh Medical Center
University of Washington / Virginia Mason

Data Coordinating Center

University of Pittsburgh, Graduate School of Public Health

Emergency Phone (24 hours): (XXX) XXX-XXXX. This is the XX paging operator; ask that [local investigator] be paged. Please note that this number is for emergencies related to your participation in the study and should not be used to contact emergency personnel regarding your surgical procedure. In the event that you experience problems resulting or related to your surgery, please dial 911 to seek immediate assistance.

INTRODUCTION:

You have been asked to participate in a bariatric (weight loss) surgery study. Before you decide to take part, please read this form. It describes the purpose of the study. It also explains that you can choose not to take part. ***Your choice will not impact whether or not you have bariatric surgery. In addition, your choice will not impact your benefits.*** You can drop out of the study at any time. You will be given the choice to learn about future research projects. It is important that you understand this form. Please tell the study staff if anything is unclear.

RESEARCHER'S STATEMENT

The purpose of this consent form is to give you information to help you decide if you want to be in this research study. Please read the form carefully. You may ask any questions about this study. For example: What is the purpose of the research? What are we asking you to do? What are the possible risks and benefits? What are my rights as a volunteer? After we have answered all your questions, you can decide if you want to be in the study. This process is called 'informed consent.'

PURPOSE OF THE STUDY

Why is this research being done?

The goal of this study, LABS-2, is to assess **how well** weight control surgery reduces your body weight and improves health conditions related to obesity. LABS-2 examines what types of patients do best after surgery and what kinds of treatment are most helpful. It also looks at longer-term safety issues. LABS-2 includes data collection and long-term follow-up. If you choose to take part in LABS-2, researchers will collect hospital information about your procedure and your health. They will also ask you questions about your health in the future.

Who is being asked to take part in this research study?

Patients who are above the age of 18 and have not had previous bariatric surgery.

Who is doing the research study?

The LABS-2 study is being done by researchers at six medical centers in the United States. The [local center] is one of the six centers. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health (NIH) and the Office of Research on Women's Health (ORWH) at the Department of Health and Human Services are providing the funding for the study.

How many people will take part in the research study?

About 2,400 men and women will participate in LABS-2. We hope to enroll about X patients at the [local center].

STUDY PROCESS

What information will be collected for this study?

Information about your health before, during and after surgery will be collected by your surgeon and his/her research staff. This information will come from your medical records, questionnaires that you complete and clinical assessments. Questionnaires that you complete include questions about your health, quality of life, and other issues. In addition, your surgeon will complete a questionnaire about your surgery. There will also be an interview, a 400 meter (1/4 mile) walk, and measurements of your neck, waist, and percent body fat. Your neck and waist will be measured with a tape measure. You will step on a special scale which will measure body fat percentage. Also, you will wear a small physical activity monitor (the size of a pager) around your ankle for one week.

You will be asked to provide approximately 55.5mLof blood (about 3 to 4 tablespoons) and 5mL of urine (about one teaspoon). Blood will be drawn to test your cholesterol, glucose and iron levels and your liver function. A urine sample will be used to test your kidney function.

During surgery, if a surgeon notices that you have signs of liver disease such as nonalcoholic steatohepatitis (a nonalcoholic fatty liver disease), it may be medically necessary to take a liver biopsy. If a liver biopsy is taken as standard of care, a local doctor will examine the results and inform you of the results. With your permission, any biopsy tissue not used for clinical care will be sent to a Central Pathologist who will examine the biopsy on behalf of the LABS

study. This will not require any additional specimen collection. At the end of this consent document you will be given the option to have the study doctor examine the liver biopsy.

Study information will first be collected no more than 30 days before your surgery. Study information will also be collected at several time points after your surgery: 30 days, 6 months, 12 months, and then annually for the length of the study. The study is planned to be three years long, but it may be longer. If you do not return to the [local institution] about 30 days after your surgery, we will call you. Over the phone we will ask about how you have been doing since your surgery. You will be asked to come to the [local institution] for all other study visits. Your 30-day post-surgery visit or telephone call and 6-month post-surgery visit to the clinic are expected to only last about 15 minutes. Your pre-surgery visit, 12-month visit and annual visits, which include questionnaires, interviews and a clinical assessment, will take approximately 2 hours.

Please see the table below for times when information about your health will be collected.

	Time points				
Procedures	Within 30 days before surgery	During surgery	30 days after surgery	6 months after surgery	12, 24 and 36 months after surgery
Questionnaires	Yes		Yes	Yes	Yes
Clinical Assessment	Yes			Yes	Yes
Blood draw/urine sample	Yes			Yes	Yes
Physical activity monitor	Yes				Yes
Surgeon assessment		Yes			
Expected time for visit	2 hours	None	15 minutes	15 minutes	2 hours

Where will my blood samples be kept?
Samples will first be collected and stored at the [clinical center]. Samples will be sent to [local institution's] laboratory and central laboratories for testing. In addition, some samples (blood and urine)will be stored at the NIDDK Central Repository. These samples may be used for future testing.

The NIDDK Central Repository is a research resource supported by the National Institutes of Health. The Central Repository collects, stores, and distributes biological samples and associated data from many studies, including this one. The purpose of a Central Repository is to make samples and information available for research after this study is completed. Sending samples to the Central Repository may give scientists valuable research material. This material may help scientists develop new medical tests, treatments, and ways to prevent diseases.

What will happen to the information collected if I decide not to have bariatric surgery?
Your involvement in this research project will end if you do not have bariatric surgery performed by a LABS surgeon. In this case, your information will be removed from the research records and destroyed. Also, you will not be contacted again concerning this research study. If you do have surgery performed by a LABS surgeon in the future, you may again have the option of being a part of this study.

What if I decide not to take part in this research project?
You do not have to take part in this research study to have bariatric surgery. Whether or not you decide to participate in this study, you will receive the same medical care.

You have the right to take away your permission to access to your personal health information. If you chose to take away this permission you must inform [local investigator] in writing. This will not result in any loss of benefits to you. Any information collected before you take away your permission will be used.

How does my participation in this study affect my ability to participate in other research studies?
You may also be invited to participate in other research studies about weight and bariatric surgery. You do not have to participate in those studies. Participating in this study may prevent your eligibility to participate in some other research studies now or in the future.

CONFIDENTIALITY OF RECORDS
Your participation in this study will be kept confidential. Your name, address, social security number or other information that can identify you will only be seen by study personnel at the [local institution]. Data collection forms will be kept in a locked file cabinet or locked room at the [local institution]. Your research information will be sent to the Data Coordinating Center at the University of Pittsburgh, Graduate School of Public Health in Pittsburgh, Pennsylvania. This information will only be labeled with an ID number and code, which cannot be linked to you. In addition, samples sent to central laboratories or the NIDDK Central Repository will be given a code number and will not include personal identifying information.

Your rights as a research participant will be monitored by representatives of the National Institutes of Health, and the Data Coordinating Center. Your rights will also be monitored by the [local institution] Institutional Review Board (IRB) which reviews all research involving human subjects. As an additional measure of protection, the study has received a Certificate of Confidentiality from the National Institutes of Health, which allows us to resist any demands for your health records; however, the Certificate cannot be used to resist a demand made by the U.S. Government for auditing or evaluating federally funded projects. The Certificate does not prevent you or a member of your family from releasing information about your involvement in the research. Please note that even with the Certificate of Confidentiality, investigators are able to take steps to prevent serious harm to you or others. For example, if the study staff learns of possible suicidal tendencies or other risk of harm to yourself or others, we are required to notify the proper medical providers or legal authorities. However, the information you provide to the research staff for this study may, but does not necessarily go into the medical record that

your surgeon and clinic staff use to monitor your health. Accordingly, you should be sure to report any health problems or concerns to your surgeon or nursing staff at your clinic visit. Otherwise they may not learn of any health problems that you report only to the study staff.

You will receive a copy of this consent form for your personal records. A copy will also be placed in your hospital medical record so that doctors treating you will know that you are taking part in the study.

Who will know about my participation in this research study?

All records related to this research study will be stored in a locked file cabinet. Your name will appear on some study related forms such as this consent form. It will also appear on our private study information records kept at the [local institution]. However, your name will not be written on your research forms. Instead, we will use a study identification number. Your study identification number will be kept separate from the research records. Your name, this consent form and any information that could identify you will be kept separate from the research records. During quality assurance visits, the study's sponsor (NIDDK) (or designee), may review your medical record. A representative from the Institutional Review Board may also review your medical record. The representatives from these agencies will be supervised by one of the investigators and will not record your name anywhere.

Who will have access to information related to my participation in this research study?

The research team and individuals listed below may have access to identifiable information related to your participation in this research study. This may include your identifiable medical information.

Authorized representatives of the [local institution] Research Conduct and Compliance Office may review your identifiable research information (which may include your identifiable medical information) for the purpose of monitoring the appropriate conduct of this research study. In unusual cases, the investigators may be required to release identifiable information (which may include your identifiable medical information) related to your participation in this research study in response to an order from a court of law.

Authorized representatives of the Data Coordinating Center will view medical information related to your participation in this study, and authorized representatives of the sponsor of this research study, the NIDDK, may request medical information related to your participation in this research study. The purpose of providing this information is to monitor the accuracy and completeness of the research data.

Authorized representatives of the [local institution] or other affiliated health care providers may have access to identifiable information (which may include your identifiable medical information) related to your participation in this research study for internal hospital operations (called quality assurance).

RISKS, STRESS, OR DISCOMFORT

What are the possible risks, side effects, and discomforts of this research study?

Physical harm associated with participating in the LABS-2 study is limited. In this study we are asking to collect a blood sample and a urine sample. Drawing blood can cause temporary

discomfort or bruising at the skin puncture site and in rare instances (less than 1%), fainting or an infection can occur. Precautions will be taken to avoid these difficulties. There is no risk associated with giving a urine sample. Additionally, as part of this study we may ask that you attempt a 400 meter (1/4 mile) corridor walk which may cause chest pain, tightness or pressure in the chest, shortness of breath, feeling faint, lightheaded or dizzy, or leg pain. The test will be stopped immediately if any of these symptoms do occur.

Of minimal risk to you is the possible inconvenience of taking the time to report your medical status to the research coordinator or to complete questionnaires. In addition, some of the questions on the questionnaires are personal and may be upsetting. For example, questions will be asked regarding alcohol and drug abuse, sexual practice and emotional problems such as depression. You do not have to answer every question. Another possible risk is a breach of confidentiality, although, as previously described, steps have been taken to keep this from happening.

INCENTIVES TO PARTICIPATE IN RESEARH

What are possible incentives from taking part in this study?

Remuneration: Subjects will not be paid to participate in this study. Subjects will be reimbursed for some expenses related to the burden of participating in the study.

In addition, the knowledge gained from your participation may help other patients who are considering having this procedure to understand better the risks and benefits of weight-control surgery. Because other researchers will not have access to your identity, neither you nor your physician will get the eventual results of studies that might be performed using your sample. It is possible that data resulting from use of your sample may eventually be used in a research publication. In that event, your name or other identifying information will not be included, as this information will not be available to the researchers.

Sometimes, research results in findings or inventions that have value if they are made or sold. These findings or inventions may be patented or licensed, which could give a company the sole right to make and sell products or offer testing based on the discovery. Some of the profits from this may be paid back to the researchers and the organizations doing this study, but you will not receive any financial benefits.

OTHER INFORMATION

Will my insurance provider or I be charged for the costs of any procedures done as part of this research study?

No. There will be no costs to you or your insurance provider for participating in this study. This includes procedures that are only for research purposes.

Who will pay if I am injured as a result of taking part in this study?

The [Local Institution Name] and their associates recognize the importance of your participation in their research studies. Investigators and study staff will make efforts to control and treat any injuries that may result from this research. If you are injured as a result of research procedures, please contact the Principal Investigator listed on the first page of this form right away.

Emergency medical treatment for injuries that directly result from your participation in this research study will be provided to you by the [local institution]. It is possible that the [local institution] may bill your insurance provider for the costs of this emergency treatment. Still, none of these costs will be charged directly to you. If your research-related injury requires medical care beyond emergency treatment, you will be responsible for the costs of follow-up care. You will not receive any monetary payment for any research-related injury that you suffer.

May I have access to my medical information that results from my participation in this research study?
Yes. You are allowed to access medical information contained in your medical records. This includes information resulting from your participation in this research study.

Will my information for this study be used for any other studies?
Yes. Other researchers may use your study information for their studies in the future. However, they will not be given any personal identifiers, such as your name or social security number.

What if I decide later that I no longer want to participate in the study?
You may tell us at any time that you no longer wish to participate in this study. You may also tell us that we can not use your information for this study. Any information collected before you take away your permission may still be used.

At any time you may choose to take away Authorization to use your health records, as provided under the Health Insurance Portability and Accountability Act of 1996 (HIPAA). To do this, write a statement to LABS-2 study staff at the [local institution] that you wish to take away this Authorization. Your withdrawal of this Authorization will be effective immediately. Your Protected Health Information can no longer be used or disclosed for research purposes by [local institution] and the other persons or entities that are identified in the "Confidentiality of Records" section of this consent, except to the extent that [site] or the other persons or entities identified above have already taken action in reliance upon your consent.

If you agree to have your sample(s) stored in the Central Repository, you can change your mind before the end of the LABS-2 study. When study researchers receive written instructions from you, they will destroy your sample and all information that identifies you. After the LABS-2 study ends, you will not be able to withdraw your sample because the Central Repository will not know which one is yours. The sample will stay in the Central Repository indefinitely.

What do I do if I have any problems or questions about the study?
If you have any questions about this study, contact [local investigator][telephone number]. Also, call this number if you think you may have experienced a problem related to this research study, or if you would like to quit the study.

PERMISSION TO COLLECT GENETIC SAMPLES

Genetic research helps us understand diseases that are passed on in families. With your permission, a research clinician will draw an additional 24mL of blood (approximately 2 tablespoons) for genetic research. This sample will be sent to a genetic research bank for future research. If you agree, these specimen(s) will be kept to learn more about obesity as well as other diseases.

The research that may be done with your specimen(s) will not have an effect on your care. In addition, the research probably will not benefit you directly. However, it might help people with obesity and other diseases in the future. For example, it might help identify gene(s) that influence how much people weigh or how well bariatric surgery helps with weight loss. This research may also help researchers develop drugs to help treat obesity or prevent or treat other diseases. Any reports about the research, done with your specimen(s), will not be shared with you or your doctor and the reports will not be put in your health record. No identifying information such as your name, address or phone number will be indicated in any research report.

RISKS, STRESS, OR DISCOMFORT SPECIFIC TO GENETIC TESTING

Physical harm associated with participating in the LABS-2 study is limited. In the genetic study we are asking to collect blood samples. Drawing blood can cause temporary discomfort or bruising at the skin puncture site. In rare instances (less than 1%), fainting or an infection can also occur. Precautions will be taken to avoid these difficulties.

"Genetic diseases" are a result of a complex mixture of genes, environment, behavior and other factors. The presence of a genetic marker does not necessarily mean that a patient will develop a disease. On the other hand, the absence of a marker does not mean that someone will not get the disease. Informing people of all such markers can cause unnecessary anxiety. Therefore, personal genetic information from this study will not be given to you. This research will not have an effect on your care. Therefore, you, your family, or your doctor will not receive results of the genetic testing. In addition, the genetic testing results will not become a part of your medical record.

May I have access to my genetic information that results from my participation in this research study?

No. As described above, personal genetic information from this study will not be given to you.

Please initial one of the following:

_____ I give permission for my blood samples to be used for genetic testing. Specimens may be stored for as long as they can be used. Specimens can be used for genetic research that is not yet planned and may be performed after the completion of the LABS study.

_____ I **do not** give permission to collect or store my blood as described above for genetic research.

PERMISSION TO CONTACT PRIMARY CARE PHYSICIAN AND EMERGENCY CONTACT

Sometimes people move or change phone numbers while they are participating in a research study. In order to make sure we can contact you during this study we would like to be able to contact your primary care physician or another person you know. If you do not wish us to contact anyone except you, it will not affect your ability to participate in this study. Please mark your choice below:

Yes: ____ I will allow the investigator to contact my primary care physician and/or an emergency and secondary contact if I am not able to be reached.

No: ____ I will <u>not</u> allow the investigator to contact my primary care physician, or emergency or secondary contact if I am not able to be reached.

If you marked yes above please give us the name, address and phone number of 2 people who will always know how to contact you. If possible, please choose people that are not likely to move.

Contact 1 Name:
How do you know this person?
Street Address:
City, State, Zip
Phone #:
Contact 2 Name:
How do you know this person?
Street Address:
City, State, Zip
Phone #:
Primary Physician Name:
Street Address:
City, State, Zip
Phone #:

RESEARCHER'S STATEMENT

I have explained this study to this patient. Based on my clinical judgment, this patient is able and competent to independently consent to participation in this research study.

_____ _____

Signature of researcher Date

_____

Printed name of researcher

SUBJECT'S STATEMENT

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research subject, I can call the Human Subjects Division at [phone number of Human Subjects]. I give permission to the researchers to use my medical records as described in this consent form. I will receive a signed copy of this consent form.

_____ _____

Signature of subject Date

_____

Printed name of subject

Copies: Subject
Investigator's file
Medical Record

Permission for study doctor to examine the clinically indicated liver biopsy:

Yes _____ No_____

_____

Signature of subject

Permission to contact subject regarding future studies:

I give permission to the researcher to contact me at a later date to discuss future studies that I may wish to participate in.

_____ _____

Signature of subject Date

_____

Printed name of subject

4.1 QUALITY CONTROL PRINCIPLES

The purposes of quality control are:

- *to ensure the quality of the LABS-2 data;*
- *to provide constructive feedback to LABS staff performing data collection for quality performance in their data collection efforts; and*
- *to document the quality of the data for historical record.*

The LABS Data Coordinating Center (DCC) has primary responsibility for development and implementation of quality control measures including:

- *training and certification of staff in standardized protocols prior to beginning data collection; maintenance of databases of completed certification;*
- *designing and implementing protocols and procedures for periodic site visits;*
- *developing quality control report forms and protocols for regular use by the clinical centers and the LABS affiliated laboratories;*
- *analyzing data collected with quality control protocols to: (i) ensure the quality of the performance of interviewers, technicians or other staff, (ii) ensure standardized data collection equipment, and (iii) ensure prompt notification of deviations from clinical centers;*
- *identifying problems in reporting or handling data from LABS affiliated laboratories and repository;*
- *reporting of pertinent information to the Data Safety and Monitoring Board (DSMB), Executive & Steering Committee, as well as other pertinent groups when necessary;*
- *Maintaining current or historical data and documents to describe the quality and performance of the entire LABS study.*

The role of the clinical centers in the Quality Assurance/Quality Control (QA/QC) plan for LABS is to implement quality control protocols, and to collaborate with and assist the DCC in the performance of its responsibilities by maintaining required records and logs and by notifying the DCC of any problems/issues that require assistance.

The role of the Coordinators Subcommittee is to monitor retention rates and evaluate protocol and data quality issues as they relate to recruitment and retention. Specific responsibilities include:

- regular review of monthly reports generated by the DCC;
- review of the specific quality control issues identified either by the sites, the Executive Committee or the DCC and the recommendations from the Steering Committee (SC) for resolution of such issues;
- regular communication with the DCC, the SC regarding efficacy of quality control procedures and protocol.

4.2 QUALITY CONTROL PROCEDURES

4.2.1 Overall Procedure

LABS-2 utilizes a series of certifications to assure that research study processes and procedures are being completed consistently and accurately within and across all sites. These certification processes have been developed in conjunction with LABS-1 and are required. Anyone collecting or managing data for LABS-2 (e.g., data managers, coordinators, surgeons) must be certified in the relevant portions of the protocol. Anyone collecting data for LABS-2 must be certified in both the LABS-1 and LABS-2 protocol. Anyone entering, managing, or accessing data must be certified in the data management system (MATRIX). Surgeons must be familiar with the LABS-2 protocol and the LABS-2 Operative forms. In addition, surgeons must meet the minimum LABS qualifications, be LABS-1 certified and adhere to the list of requirements as outlined in Section 9 of the LABS-1 MOP.

4.2.2 Individual Measures Certification

Coordinator Protocol Training:

1) Read the LABS-2 Manual of Operations (MOP) completely. .

2) Review the **LABS-2 Coordinator Protocol Review** PowerPoint presentation.

3) Review the LABS-2 MOP with a LABS-2 protocol-certified coordinator at your site. This review should address the following items:

- study design (objectives, inclusion/exclusion criteria, recruitment and visit schedule)
- database enrollment procedures (recruitment, consent, patient confidentiality)
- LABS-2 data collection flow chart
- all forms (Self-assessment, Clinician Assessment) utilized by LABS-2 and associated question by question (QxQ) form completion instructions
- practice at least once, completing each of the study components (administering the self-assessment forms, taking physical measures, medication collection, chart review for prior clinical tests, administration of Stepwatch, 400-meter corridor walk, blood draw process, urine collection)

4) Observe a protocol-certified coordinator recruit and obtain patient consent.
5) Observe a protocol-certified coordinator collect pre-operative data from at least one patient.
6) Submit a help desk request via the LABS website to schedule a training call. *A training call with the DCC is required to become certified in the LABS-2 Protocol.*

The certification module will be activated following the training call. After the module is completed successfully, coordinators will be able to use his/her certification number (received when certified for LABS-1) on associated LABS-2 forms. As in LABS-1, this number is to be recorded on all forms completed by the certified individual.

Surgeon Protocol Training:

1) Read the LABS-2 Manual of Operations (MOP) completely. Particular attention should be paid to section 1 – Study Overview, section 2.1-2.3 – Scheduling and Visits, section 3 – Protocol & Consent and section 10 – Surgeons section 2) Review the **LABS-2 Surgeon's Training Outline** with a surgeon who is already LABS certified from your site. This review should address the following items:

study design (objectives, criteria for LABS-2 visit schedule, target composition of database population, inclusion/exclusion criteria)

- LABS bariatric surgeon qualifications
- surgeon's requirements for participation in LABS
- LABS bariatric operation definitions (primary operations, second stage: conversions/revisions/reversals of bariatric operations, exclusions)
- Operative forms and related Question by Question (QxQ's)

3) Review the **LABS-2 Surgeon's Certification Review** PowerPoint presentation.

Note: the LABS-2 surgeons training outline and the LABS-2 surgeon's certification review PowerPoint presentation.

4) Submit a help desk request via LABS website to request access to the Surgeon's Certification Module for LABS-2. *A training call with a surgeon trainer (Drs. Anita Courcoulas, Dave Flum, or Bruce Wolfe) is not mandatory for surgeon protocol certification, but is available upon request.*

After the module is completed successfully, surgeons will be able to use his/her certification number (received when certified for LABS-1) on associated LABS-2 forms. As in LABS-1, this number is to be recorded on all forms completed by the certified individual.

PHYSICAL MEASUREMENT PROTOCOLS

*It is essential that **ALL TECHNICIANS FOLLOW THE PROTOCOL AS WRITTEN**, since even a seemingly unimportant omission or variation in technique can make a significant difference in the measurements recorded. If you must deviate from the protocol it is important that you send a request for assistance via the LABS helpdesk for instructions on how to proceed.*

5.1.1 Blood Pressure (BP) & Resting Heart Rate

BP equipment must be inspected and validated on a weekly basis as detailed in the equipment's user manual. The operator needs to be trained and certified. All BP readings should be recorded on the right arm that has been bared from the shoulder. Long sleeves must be pushed up or removed to avoid interference with the cuff.
If for any reason (e.g., mastectomy, arterial-venous fistula, lymph dissection, or other reason) the participant's blood pressure cannot be measured using the right arm then take the measurement using the left arm. If blood pressure cannot be measured using either arm, record -5 (not done) for both diastolic and systolic values.

Materials Needed:

- Welch Allyn Spot Vital Signs monitor 4200B
- Regular adult arm, large adult arm, and thigh blood pressure cuffs
- Gullick II Tape Measure (model 67020)
- Dark-colored cosmetic pencil is also helpful for marking the skin when finding the location of the arm circumference measurement.

Preparation:

The proper cuff size must be used to avoid under- or over-estimating BP when using indirect methods of measurement. To determine the proper cuff size, the operator must measure the arm circumference at the midpoint of the right arm. The midpoint of the arm is the point located half-way between the elbow and shoulder.

With the participant standing and holding the arm bent at the elbow with hand resting lightly on hip, fingers forward with thumb pointing to the rear, the arm length is measured from the acromion (or bony extremity of the shoulder girdle) to the olecranon (or the tip of the elbow), with a tape measure, allowing the tape to hang freely over the olecranon. The midpoint is marked on the dorsal surface. (A cosmetic pencil may be used to make this mark and can be easily removed later). The participant should then relax the arm along the side of the body. Pull an appropriate amount of tape out of the housing. Ensure that tape is in contact with but not indenting soft tissues. Align the tape at zero "zero line", along side of the tape graduations. Place one end of the tape around the mark on participant's arm. Wrap the tape around the participant's arm. Care must be taken to keep the tape horizontal. Pull on the end of the tensioning mechanism until the calibration point can be seen.

Calibration Point: When you pull slightly harder and harder on the tensioning device, two colored beads will be seen, separated by a silver disk separating the two beads. When you see one of the two, you are at the "calibration point". ***Four ounces is approximately equal to the force required to lift a stack of U.S. quarters. If the beads start to disappear into the end cap of***

the tensioning device, you are using too much force.

Cuff size is then determined from the chart below. The sizes for cuffs overlap to provide flexibility in cuff-size selection. The first choice for cuff should always be for the larger size. Because it is often difficult to fit a cuff correctly on an obese person's upper arm, an incorrect fit can result in readings that are too high or too low. If a participant's upper arm circumference indicates use of the thigh cuff, but the arm is too short for the cuff, or the cuff does not remain secured when inflated, the long arm cuff or a conical (curved) thigh cuff should be used.

If it is not possible to take an upper arm blood pressure due to cuff size, and the participant's arm circumference is between 32-44 cm, a forearm blood pressure is acceptable if calculated using the following equation (Pierin 2004):

systolic pressure = 33.2 + (0.68 x forearm systolic pressure)
diastolic pressure = 25.2 + (0.59 x forearm diastolic pressure)

The participant's arm circumference and equation must be written on the paper LABS collection form if using this method. The re-calculated blood pressure is acceptable for both the Research Coordinators Assessment Form (RCAB, RCAF) and the 400 Meter Corridor Walk Eligibility form (WEF).

If the participant does not meet the arm circumference criterion (32-44cm), the forearm measurement is not acceptable and blood pressure must be recorded as -5 (not done).

NOTE: Cuff size must be determined at each visit.

CUFF SIZE INDICATED BY MEASURED ARM CIRCUMFERENCE

CUFF SIZE (cm)	**ARM CIRCUMFERENCE (cm)**
11 (Regular)	25.3-34.4cm
12 (Large)	32.1-43.4cm
13 (Thigh)	40.7-55.0

Measurement:

1. The measurement of heart rate and BP should be performed after the participant has been seated quietly, with feet flat on the floor, in an erect but comfortable posture for at least five minutes, and for at least thirty minutes since the participant has smoked or consumed caffeine-containing beverages.

2. Blood pressure should not be taken immediately after a blood draw. Preferably, the participant's blood pressure should be taken prior to the blood draw if being completed during the same part of the visit. If this is not possible, a minimum of 10-15 minutes should elapse after the blood draw before the blood pressure measurement is performed.

3. Place the blood pressure cuff, as determined in the arm measurement procedure, around the bare upper right (or left, if right can not be used) arm so that the midpoint of the length of the bladder lies over the brachial artery and the mid-height of the cuff is at heart level. The lower

edge of the cuff, with its tubing connections, should be placed about one inch above the natural crease across the inner aspect of the elbow. The cuff is wrapped snugly about the arm, with the palm of the participant's hand turned upward. The wrapped cuff should be secured firmly by applying pressure to the locking fabric fastener over the area where it is applied to the cuff.

3. Record the blood pressure on the data collection instrument.

HEART RATE

4. Record the heart rate on the data collection instrument. Note: Heart Rate is determined as an adjunct to the blood pressure measurement.

5. Remove the cuff and store the equipment safely after the last reading.

5.1.2 Heart Rate (HR) (Polar Heart Monitor/Manual instructions)

Special note: *Prior to using the Polar Heart Monitor, it is important to read the entire instructions as outlined in the user manual.*

I. Setting Alarm with lower limit and upper limit on the wrist unit:

Before using the wrist unit, make sure that the heart rate limits and alarm is set. **You should make sure that it is set with a lower limit of 40 and upper limit of 135 before each 400 meter walk test.**

1. In the Time of Day display, press the front button until **ZONE** is displayed. Wait for three seconds to enter the target zone alarm setting.

2. **BEEP** is displayed for two seconds. **ON** or **OFF** is flashing. Press the front button to select **ON**. Wait until **OK?** is displayed. To approve your choice press the front button. The wrist unit goes to the manual setting of the heart rate limits.

3. **HIGH** is displayed for two seconds: When (-)/(+) is on the display, change the upper limit to 135.

4. When the desired value is on the display, wait until **OK?** is displayed. Press the front button to approve your choice.

5. **LOW** is displayed for two seconds: When (-)/(+) is on the display, change the lower limit to 40.

6. When the desired value is on the display, wait until **OK?** is displayed. Press the front button to approve your choice.

II. How to wear the transmitter:

1. Moisten the two grooved electrode areas on the back of the transmitter.

2. Attach one end of the transmitter to the elastic strap. Secure the strap around the participant's chest, just below the chest muscles, adjusting the strap length to fit snugly and comfortably. Attach the strap to the other end of the transmitter – *see diagram below or the instructions included with the monitor.*

3. Check that the wet electrode areas are firmly against the participant's skin and that the Polar logo is in a central, upright position.

III. Measuring resting heart rate:

1. Have the participant wear the wrist unit and the transmitter.

2. In the Time of Day display, press the front button to enter the menu. EXE (exercise) is displayed.

3. After three seconds the wrist unit goes into exercise mode and the stopwatch starts. The stopwatch is displayed and the outline of the heart symbol will flash until the participant's heart rate is detected.

4. The participant's heart rate and the heart symbol will appear within 15 seconds. A flashing heart symbol indicates an ongoing heart rate measurement. The heart symbol flashes at the pace of your heart.

NOTE:

- Please allow sufficient time for signal pick up.
- If the wrist unit does not receive your heat rate, the stopwatch keeps running the and flashing heart frame symbol disappears. Check that the transmitter electrodes are wet and the strap is snug enough.

IIIi. Suggested steps to assist participants in positioning of the Polar Heart Rate Monitor

1. Explain to the participant that the heart rate monitor will be worn during the quarter mile walk, and say, "I will step out of the room while you get the monitor situated."
2. Explain that the monitor will go directly on the skin, and will need to be placed right underneath their breast line (demonstrate the placement).

3. Note that the thick part of the monitor will be aligned with the heart, so it will be a little to the left.
4. Tell the participant that he/she should adjust the strap to make sure it is as tight as possible while still being comfortable.
5. Have the participant make sure that the back part of the monitor is as flat on the skin as possible, even if this means slipping it up underneath the participants' bra (if applicable).
6. Explain that the watch can go on either wrist.
7. Once the participant has the equipment in place, turn on the watch – If the HR is not detected:
    1. Ask the participant to point to the thick part of the monitor over their clothing.
    2. If the monitor needs to be adjusted, ask the participant to adjust it so it sits right underneath the breast line and aligned with the heart (a little to his/her left). Participants are usually okay with lifting up shirts to assist them. If participants are not comfortable, try to make adjustments without showing skin.
8. If the adjustment doesn't work, take an alcohol wipe and ask them to wipe the skin directly underneath the monitor making sure to wipe underneath the thick part of the monitor.
9. If the HR is still not detected, ask the participant to take off the monitor and perform the HR manually.

IV. Measuring Average Heart Rate

1. In the Time of day display press the front button until **FILE** is displayed.

2. Wait for three seconds to enter the file. Total exercise duration is displayed.

3. Press the front button. The <u>average heart rate</u> of the session is displayed.

V. Maintenance

- The Polar Heart Rate Monitor is water resistant and can be cleaned using mild soap and water solution. Dry it carefully with a soft towel. NEVER USE ALCOHOL or any abrasive material, such as steel wool or cleaning chemicals. This may damage the electrodes. The straps provided with the monitor should also be cleaned between each use by washing it with mild soap or dipping it in alcohol. Allow it to drip dry.
- Never store the transmitter wet. Sweat and moisture can keep its electrodes wet and the transmitter activated, which shortens the battery lifespan.
- Store your heart rate monitor in a cool and dry place. Do not store it in any kind of non-breathing material, such as a plastic bag if it is wet.
- Keep your heart rate monitor out of extreme cold and heat. The operating temperature is 14 ^{o}F to 122 ^{o}F/ -10 ^{o} C to +50 ^{o} C.
- Do not expose the heart rate monitor to direct sunlight for extended periods, such as by leaving it in a car.

VI. Interference during exercise

Electromagnetic Interference may occur near high voltage power lines, motor-driven exercise equipment, cell phones or when walking through electric security doors. Details are provided in the Polar User Manual.

VII. Measuring Heart Rate Manually

If you are unable to measure heart rate using the pulse monitor, the resting heart rate may be measured indirectly by placing the fingertips on a pulse site. To determine the number of beats per minute, take the resting pulse rate for a full minute, or for 30 seconds and then multiply by two. One of the points at which the resting pulse can be accurately measured by palpation is at the radial pulse on the wrist, in line with the base of the thumb. Place the tips of your index and middle fingers (not the thumb, which has a pulse of its own) over the artery and lightly apply pressure.

5.1.3 Neck Circumference

Materials Needed:

- Gulick II Tape Measure (model 67020)

Preparation:

All participants are being asked to have this measurement taken over bare necks. Explain the procedure to the participant. Ask the participant to remove only the clothing necessary to complete the measurement, such as turtle necks or other high collar shirts. Every measure should be taken to protect the participant's sense of dignity.

Measurement:

1. Verify that the participant is standing erect, weight split between feet, arms at side with feet together

2. Pull an appropriate amount of tape out of the housing.

3. Visually assess the midpoint between the participant's chin and clavicle. Have participant hold tape at midpoint. Take the neck measurement in horizontal plane. Ensure tape is snug, but not indenting soft tissues.

4. Align the tape at zero along side of the tape graduations. You will want to pull gently on the end of the tensioning mechanism until the calibration point can be seen. Have the participant inhale and exhale normally. When they exhale take the measurement. Warn the participant that they may experience slight discomfort from the slight pressure that you will add to get an accurate measurement.

5. Release the tape measure and repeat the above steps. If the two measures are within 2 cm of each other, the measurement is complete. Record both measurements on the **Data Collection Form.** If the two measures are not within 2 cm of each other, a third measurement should be taken and recorded on the form.

5.1.4 Waist Circumference

Materials Needed:

- Gulick II Tape Measure (model 67020)

- Washable marker or cosmetic pencil

Preparation:

Explain the procedure to the participant. Ask the participant to remove only the clothing necessary to complete the measurement in non-restrictive garments (i.e., girdles, control top panty hose, etc.). Every measure should be taken to protect the participant's sense of dignity.

Measurement:

1. Have the participant stand erect with their abdomen relaxed, arms at sides and feet together.

2. Face the participant. The waist measurement should be taken around the abdomen horizontally at the midpoint between the highest point of the iliac crest (hip bone) and lowest part of the costal margin (ribs) in the mid-axillary line – imagine a vertical line going through the participant's head and into their feet, standing erect. Mark the midpoint on both sides of the participant using a washable marker or cosmetic pencil. It may be helpful to have the participant identify these reference points.

3. Pull an appropriate amount of tape out of the housing. Ensure that tape is in contact with, but not indenting soft tissues.

4. Align the tape at zero "zero line", along side of the tape graduations. Place one end of the tape on the mark made on the participant's right side. Have the participant secure that end of the tape to the mark by placing your finger tip on the end of the tape in order to secure it on the mark. Wrap the tape around the participant's waist, making sure that the tape is horizontal and crosses over the mark on the left side of the participant, until the tape reaches the secured end of the tape.

5. Pull on the end of the tensioning mechanism until both colored beads can be seen. Note that this is more tension than what is used for the neck, which is measured using the calibration point on the tape measure.

6. When the tape is positioned in the horizontal plane at the correct height, ensure that the zero end of the tape is below measurement value.

7. Ask the participant to keep their arms at their sides and breathe naturally. After the participant exhales, read the measurement next to the tape's "zero line" and record the circumference to the nearest 0.1 centimeter.

8. Release the tape measure and repeat the above steps. If the two measures are not within 2 cm of each other, a third measurement must be taken and recorded on the form.

5.1.5 Body Composition

Materials Needed:

- Tanita Scale
- Printer/Paper for printer

Preparation:

Because the Tanita body composition analyzers send a weak electrical current through the body, participants who have a pacemaker or other internal electronic medical device are excluded from the body composition measurement because the weak electrical signal may cause such internal devices to malfunction. The Tanita must be restarted in manual mode to obtain a weight only measurement, without the electrical current. Women that may be pregnant should also be weighed without using the body composition function.

Participants are also excluded from the Tanita Scale if they exceed 600 lbs. since that is the weight limit.

To restart the Tanita Scale in ***manual mode:***

Directions may also be found below or under "WEIGHT ONLY FUNCTION" in the Tanita Manual.

1. **After turning on the unit, press the [WEIGHT ONLY] key.**
   After a momentary display check, "0.0" will appear on the LCD. If measuring units need to be changed, do so at this time by pressing the [kg/lb] key.
   An arrow on the LCD will follow the selection of weighing units.

2. **Weight Measurement**
   Step on the weighing platform. Weight will be displayed on the LCD.

3. **When measuring is complete, press the [ON/OFF] key to turn off the power.**
   - No printer is available when measuring weight only.
   - If body composition analysis is desired, turn the unit off and then on, using the [ON/OFF] key.

   Important Note: There is no automatic weight lock function.

Measurement:

1. The Tanita scale should always be used on a flat, stable surface.

2. Ask participant to remove shoes and socks/hose. Because the body composition analyzer uses a minor electric current to measure impedance, best results will be observed when measurement is taken in bare feet. Poor contact between the feet and electrodes may produce an error message. Also, the sole of the feet should be free of excess dirt, as this may act as a barrier to the electric current. ***Please note that if there are calluses on the soles of the feet accurate measurement may still be possible. Place 0.5cc of saline or water in the center of each electrode. This will act as a conductive material and may allow the current to pass freely through a thin barrier.***

3. Press the [ON/OFF] key to turn on the Power. Adjust measurements by pressing [kg/lb] if needed, to record participant's weight in lbs.

4. You will then be prompted to enter participant's clothes weight. **For the purposes of LABS-2, the participant's clothes weight must be listed as 0 lbs.**

5. Select either standard male or standard female. *LABS will not be using the athletic male or athletic female settings from the four listed gender and body types.*

6. Enter participant's age.

7. After age is entered, the arrow will automatically advance to height. Using Feet and Inches, measurement is made to the First Decimal Place by 0.5 inch increments, example 5 ft. 7.5 inches, press the [5] [7] [.] [5] keys and for 6 ft 0 inches, press [6] [0] [.] [0] keys. When using the lb. mode, height will automatically round up or down to the nearest .5 inch or whole number. ***Note that coordinators will collect the height from the LABS-1 Pre-Operative Evaluation Form. If height is missing from that form, coordinators should measure the height of the participant as outlined in the LABS-1 MOP.***

8. After entering the above data, the flashing arrow will appear next to STEP ON, after the LCD displays "8888".

10. Participant should be asked to step slowly onto the weighing platform. If the participant's inner thighs are touching (which is very likely), a thin piece of cardboard or towel should be placed between the thighs because touching legs may affect the measure. Heels should be placed directly on top of the posterior electrodes, while the front part of the foot needs to be in contact with the anterior electrodes.

11. After weight stabilizes, impedance measurement is taken. This is denoted by four "bubbles" which appear on the bottom half of the LCD. As the measurement is being taken, the bubbles will begin to disappear one by one. ***The participant must remain on the platform until the final bubble has disappeared and the display emits a short beep.***

12. Weight and percent body fat will be displayed on the LCD and detailed results will print out. It is suggested that you print this report twice; with one copy being given to the participant and the other being kept in the participants research file for reference at later visits. The weight and percent body fat will remain on the screen for ten seconds before returning to gender and body type screen.

13. If all measurements are complete, press the [ON/OFF] key to turn off the power.

14. After each use, the weighing platform should be cleaned with alcohol pads or appropriate disinfectant. Follow directions for cleaning the platform as outlined in the instruction manual provided with your equipment.

Repeating the Measurement:

If the value is below the baseline or follow-up cut point (see below), the body fat % measurement must be repeated. The repeat measurement value should be recorded on the appropriate LABS-2 form regardless of whether it is the same or different from the original measurement. Copies of both measurement printouts should be placed in the research chart (indicate on each printout whether it is the original or the repeated measurement).

For all LABS-2 primary bariatric surgeries, a body fat % of **less than 40%** must be repeated. The repeat measurement should be recorded on the LABS-2 form.
For all LABS-2 subsequent surgeries, revisions or reversals and follow-up appointments, a body fat % of **less than 25%** must be repeated. The repeat measurement should be recorded on the LABS-2 form.

When repeating the body fat measurement:

1) check to make sure that the soles of the feet are free of excess dirt, as this may act as a barrier to the electric current.
2) If there are calluses on the soles of the feet, place 0.5cc of saline or water in the center of each electrode. This will act as conductive material and may allow the current to pass freely through a thin barrier.
3) If it appears that the skin of a participant's inner thighs are touching, a thin piece of cardboard or towel should be placed between the participant's thighs. Tanita customer service has indicated that the electrical current that measures body fat % flows up one leg, across the trunk and back down the opposite leg. It is possible that the electrical current may not complete its full path if inner thighs are not separated.
4) Make sure that heels are placed directly on top of the posterior electrodes, while the front part of the foot is in contact with the anterior electrodes.

Weight may and should be taken on the Tanita scale, without utilizing the body composition mode. Directions may be found below or under "WEIGHT ONLY FUNCTION" in the Tanita Manual.

1. **After turning on the unit, press the [WEIGHT ONLY] key.**
   After a momentary display check, "0.0" will appear on the LCD. If measuring units need to be changed, do so at this time by pressing the [kg/lb] key. An arrow on the LCD will follow the selection of weighing units.

2. **Weight Measurement**
   Step on the weighing platform. Weight will be displayed on the LCD.

3. **When measuring is complete, press the [ON/OFF] key to turn off the power.**
   - No printer is available when measuring weight only.
   - If body composition analysis is desired, turn the unit off and then on, using the [ON/OFF] key.

   Important Note: There is no automatic weight lock function.

6.1 Central Laboratory

LABS clinical sites will be drawing and sending serum, whole blood and urine specimens to the Northwest Lipid Metabolism and Diabetes Research Laboratories ("Central Lab") for every patient pre-operatively (baseline), 12-month, and annually thereafter. NOTE: the 72-month and 96-month post-operative visits were modified to be phone visits and, therefore, do not include specimen collection.

The following samples will be sent to the Central Lab:

HbA1c: 2.0 mL
Lipid Profile/Creatinine: 3.0 mL
CRP/Cystatin: 0.5 mL
Insulin: 0.5 mL
Albumin/Creatinine: 3.0 mL

In February 2010, the Albumin/Creatinine aliquot was decreased to 2.5 mL so that the amount of urine to be stored at the Biosample Repository could be increased to 2.0 mL.

Blood should be drawn in the established priority order.

	Specimen Collection Tubes/Vials	Processing and Transfer Serum/Plasma to cryovials and store	Storing/ Shipping to Laboratory/Repository	Order of Draw
Central Laboratory				
HbA1c	2.0 mL Purple-top (EDTA) vacutainers	• Mix by inverting gently 8-10 times. • **DO NOT CENTRIFUGE.** • Freeze whole blood at -70°C. • Label: HbA1c.	Store at -70°C and batch ship to the Central Lab for analyses at the Northwest Lipid Metabolism & Diabetes Research Laboratories, Seattle, WA 98109.	1
Lipid Profile Creatinine C-reactive Protein Cystatin C Insulin	8.5 mL Red Gray (Tiger-top) SST	**Processing:** • Mix by inverting gently 5 times. • Let stand upright at room temperature for at least 30 mins; no more than 45 mins. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C. **Transfer:** • 3.0 mL into a 3.5 mL cryovial. Label: Profile/Creatinine. • 0.5 mL into a 2.0 mL cryovial. Label: CRP/Cystatin. • 0.5 mL into a 2.0 mL cryovial. Label: Insulin.	Store at -70°C and batch ship to the Central Lab for analyses at the Northwest Lipid Metabolism & Diabetes Research Laboratories, Seattle, WA 98109.	2
NIDDK Biosample Repository				
Serum	three 7.5 mL Red Gray (Tiger-top) SST vacutainers *Note: Possible lab values for serum include Non-esterified fatty acids, PTH, Calcium, Vitamin D, Vitamin B12*	**Processing:** • Mix by inverting gently 5 times. • Let stand upright at room temperature for a minimum of 30 minutes but no more than 45 minutes. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C. **Transfer:** 0.5 mL into a 2.0 mL cryovial (approximately 20 cryovials). Label: Serum	Store at -70°C and batch ship to NIDDK Biosample Repository at Fisher BioServices in Germantown, MD 20874	3
Plasma	• two 10 mL Purple-top (EDTA) vacutainers • one 3 mL Purple-top (EDTA) vacutainer	**Processing:** • Mix by inverting gently 8-10 times. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C (may put on ice for up to 45 mins prior) **Transfer:** 0.5 mL into a 2.0 mL cryovial (approximately 20 cryovials). Label: Plasma.	Store at -70°C and batch ship to NIDDK Biosample Repository at Fisher BioServices in Germantown, MD 20874	4
NIDDK Genetics Repository				
DNA	Three 8 mL Purple-top EDTA vacutainers	• Mix by inverting gently 8-10 times. • Keep tubes at room temperature. • **DO NOT CENTRIFUGE.**	Ship overnight the same day as the blood draw to NIDDK Genetics Repository at Rutgers University	5

Blood collection for analysis: 8.5 mL blood in a Red Gray (Tiger-top) SST vacutainer and 2 mL whole blood in a Purple-top EDTA-containing vacutainer

Urine: spot collection

Analysis	Unit of measure	Sample Type	Volume Required	Fasting Required
Lipid Profile (cholesterol, HDL, LDL, triglycerides) and Creatinine	mg/dL	Serum	3 mL	Yes
Insulin	µU/mL	Serum	0.5 mL	Yes
C-reactive protein/ Cystatin C	mg/dL	Serum	0.5 mL	Yes
HbA1c	%	Whole blood	2 mL	Yes
Urine albumin, creatinine and albumin/creatinine ratio	mg/dL	Urine (spot)	2.5 mL	Non-fasting acceptable

Shipment to the Central Laboratory

Central Laboratory Shipment Form

Specimens will be shipped overnight on dry ice to the Central Lab on the first Monday, Tuesday or Wednesday of the month. The shipment should include all specimens collected to date regardless of whether or not the Revco boxes are full. Each shipping container will contain a maximum of two Revco boxes (a 2" and a 3" box).

6.2 NIDDK Biosample Repository

LABS will be drawing and sending plasma and serum specimens to the NIDDK Biosample Repository (Biosample Repository) for every patient pre-operatively (baseline), 12-month, and annually thereafter. NOTE: the 72-month and 96-month post-operative visits were modified to be phone visits and, therefore, do not include specimen collection. Both serum and plasma will be shipped to the Biosample Repository. 10 mL of serum will be aliquotted into 20 .5 mL cryovials; 10 mL of plasma will be aliquotted into 20 .5 mL cryovials.

In 2007, urine collection was added to the Biosample Repository protocol. Two 0.5 mL cryovials of urine are to be aliquotted and sent to the repository for storage. The urine will be aliquotted AFTER the required 3.0 mL is aliquotted for the Central Laboratory. The two cryovials of urine will be placed in the specimen boxes along with the serum and plasma vials.

In February 2010, urine collection was increased from two 0.5 mL cryovials to four 0.5 mL cryovials. The urine should be aliquotted AFTER the required 2.5 mL aliquot for the Central Laboratory. The four cryovials of urine are placed in the specimen boxes along with the serum and plasma vials.

Blood should be drawn in the established priority order.

	Specimen Collection Tubes/Vials	Processing and Transfer Serum/Plasma to cryovials and store	Storing/ Shipping to Laboratory/Repository	Order of Draw
Central Laboratory				
HbA1c	2.0 mL Purple-top (EDTA) vacutainers	• Mix by inverting gently 8-10 times. • **DO NOT CENTRIFUGE.** • Freeze whole blood at -70°C. • Label: HbA1c.	Store at -70°C and batch ship to the Central Lab for analyses at the Northwest Lipid Metabolism & Diabetes Research Laboratories, Seattle, WA 98109.	1
Lipid Profile Creatinine C-reactive Protein Cystatin C Insulin	8.5 mL Red Gray (Tiger-top) SST	**Processing:** • Mix by inverting gently 5 times. • Let stand upright at room temperature for at least 30 mins; no more than 45 mins. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C. **Transfer:** • 3.0 mL into a 3.5 mL cryovial. Label: Profile/Creatinine. • 0.5 mL into a 2.0 mL cryovial. Label: CRP/Cystatin. • 0.5 mL into a 2.0 mL cryovial. Label: Insulin.	Store at -70°C and batch ship to the Central Lab for analyses at the Northwest Lipid Metabolism & Diabetes Research Laboratories, Seattle, WA 98109.	2
NIDDK Biosample Repository				
Serum	three 7.5 mL Red Gray (Tiger-top) SST vacutainers *Note: Possible lab values for serum include Non-esterified fatty acids, PTH, Calcium, Vitamin D, Vitamin B12*	**Processing:** • Mix by inverting gently 5 times. • Let stand upright at room temperature for a minimum of 30 minutes but no more than 45 minutes. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C. **Transfer:** 0.5 mL into a 2.0 mL cryovial (approximately 20 cryovials). Label: Serum	Store at -70°C and batch ship to NIDDK Biosample Repository at Fisher BioServices in Germantown, MD 20874	3
Plasma	• two 10 mL Purple-top (EDTA) vacutainers • one 3 mL Purple-top (EDTA) vacutainer	**Processing:** • Mix by inverting gently 8-10 times. • Centrifuge at 1200 RCF (g) for 15 minutes at 4°C (may put on ice for up to 45 mins prior) **Transfer:** 0.5 mL into a 2.0 mL cryovial (approximately 20 cryovials). Label: Plasma.	Store at -70°C and batch ship to NIDDK Biosample Repository at Fisher BioServices in Germantown, MD 20874	4
NIDDK Genetics Repository				
DNA	Three 8 mL Purple-top EDTA vacutainers	• Mix by inverting gently 8-10 times. • Keep tubes at room temperature. • **DO NOT CENTRIFUGE.**	Ship overnight the same day as the blood draw to NIDDK Genetics Repository at Rutgers University	5

Serum storage: Collect blood in three 7.5 mL Red Gray (Tiger-top) SST vacutainers for a total of 22.5 mL of blood yielding approximately 10 mL of serum.

Plasma storage: Collect blood in two 10 mL Purple-top (EDTA) vacutainers and in one 3 mL Purple-top (EDTA) vacutainer for a total of 23 mL of blood yielding approximately 10 mL of plasma.

Urine storage: After the 2.5 mL of urine is aliquotted for the Central Laboratory, approximately 2.0 mL of urine is to be aliquotted (four 0.5 mL cryovials) for biosample repository storage.

Shipment to the Biosample Repository

Vials will be frozen and stored on site. When the 3 boxes are full and can fill a shipper box, the site will prepare the vials for overnight shipment to the Biosample Repository. Each shipper must contain a report listing details of every cryovial contained in the shipper (a maximum of 243 vials).

6.3 NIDDK Genetics Repository

LABS clinical sites will be drawing and sending blood specimens to the NIDDK Genetics Repository (Genetics Repository) for every consenting patient as indicated on the LABS-2 Enrollment Form. This draw should occur, ideally, pre-operatively (baseline) but can be drawn at any subsequent visit if blood could not be drawn at baseline. Three 8 mL tubes will be drawn once unless the Genetics Repository requests a re-draw.

Shipment to the Genetics Repository

Samples must be shipped overnight to the Genetics Repository on the day that the sample is drawn. Samples should be stored at room temperature. When possible, sample draws and shipments should be limited to Monday – Thursday.

6.4 Local Laboratory

LOCAL LABORATORY ASSAYS WERE NO LONGER REQUIRED TO BE DOCUMENTED AND ENTERED INTO THE RESEARCH DATABASE AS OF 2010.

LABS clinical sites will be responsible for ensuring that samples are drawn and assayed at a local laboratory. The assay values will be included in the LABS database.

The following laboratory results are required for every patient pre-operatively (baseline), 12-month, and annually thereafter:

- Fasting Glucose (plasma or serum)
- Hematocrit
- Total Bilirubin
- ALT
- AST
- Albumin
- Alkaline Phosphatase
- Platelet
- Total White Count

At the 6-month follow-up visit, the following are required for every patient:

- ALT
- AST

Samples for the baseline results must be drawn within 180 days prior to the surgery date.

The 6-month and annual follow-up sample draws will follow the established visit windows (see Section 2).

6.5 Liver Biopsy Protocol

Recommended Type of Biopsy

From the point of view of obtaining optimal histology, the preferred type is a core needle biopsy obtained from the right lobe of the liver, using as wide a bore needle (ideally 16 gauge) as can be done safely. Whenever possible, the specimen should be at least 2 cm long. *However, a wedge biopsy is better than no biopsy.* Accordingly, when surgeons have a strong preference for performing a wedge biopsy, either on the grounds of safety or for other reasons, the following steps should be taken to provide the most useful sample.

1. The biopsy should involve removal of a wedge that goes well into the parenchyma, and is not simply a small snip from the liver edge. The latter may exhibit extensive collagen deposition that reflex on its sub-capsular location and confuses the issue of steatosis-related fibrosis.

2. The biopsy must be obtained with a sharp cutting instrument. Never use a heat- or coagulation based instrument to obtain a liver biopsy.

Special Notes:

1. Biopsies should be obtained as early as possible in the procedure in order to avoid the confounding inflammation that occurs in the liver during any abdominal operation.
2. Biopsies should be fixed immediately, in the operating room, in neutral buffered formalin or whatever alternative is routinely used at the particular site.

General StepWatch™ Information and Care

What is the StepWatch?

The StepWatch™ Step Activity Monitor (US Patent # 5,485,402) (SAM) is a research and clinical tool for long-term assessment of ambulatory function in the real world. It is an ankle-worn, microprocessor-controlled step counter which unobtrusively measures how mobile a person is throughout daily life. Step counts are recorded every minute between downloads. The SAM is attached to a person's ankle using a comfortable elastic band. The SAM works with a docking station and software for data downloading, analysis and display on either an IBM-compatible or MAC personal computer.

The SAM detects steps for a wide variety of normal and abnormal gait styles and cadences ranging from a slow shuffle to a fast run. When properly used, accuracy typically exceeds 98%.

Care of the Monitor

The SAM is a very durable instrument, but should not be thrown against hard surfaces, torqued, crushed or punctured. The case is permanently sealed to prevent tampering and to insure that the monitor is waterproof. The anticipated battery life is at least 7 years with continuous use and longer with non-continuous use. The SAM can be returned to Cyma to have the battery replaced. To preserve the integrity of the battery, the SAM should not be left in temperatures exceeding 110 degrees Fahrenheit (such as on the dashboard of a car in warm weather, an oven or clothes dryer) or in temperatures below 0 degrees Fahrenheit.

Cleaning the Monitor and Strap

The SAM is designed for multi-participant use. It should be cleaned by wiping it with a germicidal wipe between each use. The PDI Super Sani-Cloth is recommended. Do not use any other solvents. Do not autoclave. The docking station is NOT waterproof; to clean it, wipe with a soft cloth moistened with mild soap and water.

The straps provided with the monitor should also be cleaned between each use by first washing it with antibacterial hand soap (such as a surgical scrub) and then dipping it in alcohol. Allow it to drip dry.

In highly infectious situations (i.e. a participant reports he had poison ivy or ring worm near his ankle while wearing the SAM) discard the strap.

Setting up the StepWatch Program and Data Files:

The StepWatch system is for use with Windows 98 / ME / 2000 / XP.

Installing the USB driver for the StepWatch Dock:

1. Using the enclosed USB cable, plug in your dock to your USB equipped PC.

2. Your PC will recognize that a new USB device has been plugged in and ask you to insert the disk with the driver. Upon inserting the CD it will search and find the driver. If it does not find the driver, choose to install the driver from a location and then browse to the folder on the CD labeled "StepWatch USB Driver 33 for Windows". Select and continue.

3. You may be prompted with a warning that the USB driver has not been Windows approved. Choose to continue and install the driver.

4. A second installation will occur very similar to the last one, which will install a virtual port called "StepWatch Dock".

5. You may again be prompted with a warning that the driver has not been Windows approved. Choose to continue and install the driver.

Installing the StepWatch Software:

1. The StepWatch Analysis Software was originally sent to you on a CD. However, an updated version of the software (Version 3.2) became available in February, 2010 and should be used from this point forward.

2. It is important that the new version of the StepWatch Analysis Software is installed in a consistent physical location on all computers so we can use DataStream (FTP) application to find participant files. Therefore, please install the StepWatch software in “C:\Program Files\StepWatch”.

3. To download the new software go to the following address: files.me.com/stepwatch/x9mjj9 Password: whynot
The "Download" should begin automatically, and click on the "Save" option, not "Run" if prompted by the browser. If you have problems saving to “C:\Program Files\StepWatch” please contact the LABS DCC . If you have problems installing the new software in general please contact Orthocare.

4. If you require a new software serial number please contact Orthocare:

5. After installing the new software (version 3.2), please delete any old versions of the StepWatch Analysis Software that you already have.

StepWatch Library

Your StepWatch Library will automatically be created when you install the StepWatch software: C:\Program Files\StepWatch Library

The StepWatch Library should contain two folders or directories - Program Files and Client Files: C:\Program Files\StepWatch Library\Client Files

DO NOT move your StepWatch application or your Library.

Program Files

The Program Files folder or directory exists within your StepWatch Library. This contains files essential to your program set-up and database.

Never alter, delete or move your Program Files out of your StepWatch Library unless instructed to do so by Cyma technical support personnel.

Participant Files

Your Client Files folder or directory exists within your StepWatch Library. You should save your StepWatch data files to the main Client Files folder. StepWatch data files should only be downloaded to the one computer your site designated for SAM download (the DCC installed the necessary file transfer software on that computer). Unattended transfer of these files (DataStream) will occur once a day at 12:00 PM as long as the computer is on at that time. The DataStream process will rename all files in the Client Files folder by adding a date stamp to the file name, transfer them to the DCC and move them to the Archive folder that is in the Client Files folder of the SAM computer. Please contact the LABS DCC with any questions regarding transferring the data.

Using the Dock

You may find it convenient to always leave the SAM docking station plugged in to your computer. If you plug and unplug it between use, be sure the StepWatch application is not running when you plug-in or unplug the dock.

The StepWatch is placed on the dock face down (red side down) so that it fits into the indentation on the top of the dock. The docking station does not require battery power. It draws power from the USB connection.

The System 3 Dock features lights that indicate its communications status:

- **Fading blue light** - The dock is plugged into the computer and has power. It is OK to unplug the dock when the light is like this but not during any other light condition.
- **Steady Green and Blue Lights** - The program is running and the correct USB port is selected in StepWatch program preferences so that the software can communicate with the dock. If the blue light is steady but the green light is not on, the correct port has not been selected. It is OK to take a StepWatch monitor off the dock is in this state.
- **Steady Red and Blue Lights**- There is a monitor on the dock and the dock is communicating with it. DO NOT REMOVE THE MONITOR. Wait until the green light comes on again before removing the monitor.
- Flashing **Red and Blue lights** - Error (See “Troubleshooting”).

Communications

After installation if your computer is not registering the SAM dock, use the pop-up menu in **Communications** to specify the port into which you plugged the dock. (To find the Communications page go to “Edit”, then “Preferences” and from there choose the “Communications” tab.) If you are not sure which port to choose, try all choices. You may verify whether your selection is correct with the check dock function in the “Communications Test” of the Monitor menu or by looking to see that the green light is showing on the dock.

Setting Preferences for Stepwatch Version 3.2.0

Before you start to collect data, you need to set the Preference options which affect how the data are recorded, displayed and analyzed. You access the Preference options from "Tools" (between "Monitor" and "Window"). Once you initially set the preference options (as described below) you should not change them during the course of LABS-2. You only need to set them once. However, if you set up the SAM software on multiple computers it is important that you set the Preference options on each computer.

Start with the "Programming" tab:

Measurement Units

Select **English** units. This will affect both height measurements (inches) and date formats (order of day and month, and characters separating day, month and year). The date format you choose should be the same as what is used by your computer operating system. If you are currently using the European date style, change to English units if you experience problems.

LED Flashes at start

The red LED blinks each time a step is detected. Set the LED to blink **100 times** at the beginning of a recording session. You will use the LED flashes to quickly assess the appropriateness of your settings by watching your participant walk and making sure the light blinks once for each step.

Preferred recording duration

Set the default running time for each monitoring session to **15 days**. Unless downloaded earlier, the StepWatch will always run at least this number of days, and may run slightly longer.

Estimated Percent Time Active

Set this to **35%**.

StepWatch 3 Programming Options

Preferred recording interval: **60 seconds**
Require data entry for: **Notes**

Next, go to the "Presentation" tab:

Data Presentation Options:

Check the box for **double counts** to estimate (number of steps) for both legs.

Auto-exclusions:

Specify that days **with less than 5% of the average step count** will be automatically excluded from analysis when your data are downloaded. The function only applies when data are first downloaded. Auto-excluded days may later be included by editing the time selection for the day in the Edit Time window. Do not select other options in this section.

Activity Level Definitions:

Set **30** for Low, which means that all intervals with 1 - 30 steps/minute will be counted as Low Activity.
Set **80** for Medium, which means that all intervals with 31- 80 steps/minute will be counted as Medium Activity. Set **150** for High, which means that all intervals with over 80 steps/minute will be counted as High Activity. The High value **(150)** does not set an upper limit for High Activity. Instead, this number controls the scale of the y-axis for plotting of the step data on your screen and for printing.

Select the "**Draw grid lines for step rates**" option so that horizontal step rate grid lines are drawn in the daily step plots on your screen and in printing. Do not select the "**Display activity level as color bands**" option which controls whether color bands for Low and Moderate activity are shown in the step plots on your screen and in printing.

Finally, go to the "Reports" tab:

Enter report title as: **LABS-2 StepWatch Activity Report**. It will appear on pages printed from the StepWatch software. There is also an option of typing a Footer and subtitle. However, you should leave these blank.

Do not make any changes under the "Communications" tab

Programming the Monitor: Easy Start Programming:

There are two ways to program the SAM to record data. You will use the **Easy Start** method.

Easy Start is accessed through the "Start Recording Activity" command in the Monitor menu. This option provides enough flexibility to set up the SAM appropriately for most participants and applications, while protecting you from unexpected results.

To initiate Easy Start Programming place the monitor face down on the dock and select “Start Recording Activity...” from the Monitor menu. The software will read some information from the SAM, and the docking station will show a red light while it is communicating. DO NOT MOVE THE STEPWATCH WHILE THE RED LIGHT IS ON. This will take a few seconds. The Start StepWatch screen will then appear. Complete the participant description (see directions below).

Tips

*Running email, an internet browser, or intensive networking software in the background when you are programming or downloading your SAM can occasionally cause errors. It is always best to **quit such background applications before initiating communications**.*

Participant Description

Height

Please enter the participant’s height in inches from their LABS 1 pre-op form.

Quick Stepping

The Quick Stepping setting allows you to accurately measure activities such as running or jogging with a short and/or rapid stride. However, indicating YES for the Quick Stepping setting has a fairly strong affect on the StepWatch performance, so it **should be used with caution.** We anticipate that you will never answer “yes” to the Quick Stepping questions for LABS participants at baseline; however, at follow-up visits this feature may occasionally need to be accessed.

A key to accurately identifying quick stepping activities is to distinguish overall walking or running speed from how quickly steps are being taken. Some activities - like running with long strides - involve traversing the ground rapidly without taking steps much more quickly than walking. Other activities - like vigorous dancing - involve moving the feet quickly without the body traversing the ground quickly.

It is also important to distinguish activities the participant likes or knows how to do from those they are likely to undertake during the monitoring session. For instance if a participant does an activity like spinning twice a week for an hour but otherwise does no quick stepping, it is better to try to accurately measure the majority of their movement for the week and thus quick stepping would not be appropriate. Please note that indicating YES for the Quick Stepping setting has a fairly strong affect on the StepWatch performance, so if you are uncertain, choose NO. If you are in question about whether an activity qualifies, have the participant "demonstrate their moves."

Examples of quick stepping activities might be:
• running or jogging with a short and/or rapid stride
• vigorously playing sports such as basketball, soccer, volleyball, racquetball, tennis
• jumping rope (with more than one jump per rope cycle)
• romping energetically with a child or dog
• fast dancing
• "spinning" on a bicycle
• high-impact aerobics

Walking Speed

Evaluating a person's normal walking speed relative to their height is likely an unfamiliar concept. The intent is to identify how quickly steps are being taken rather than the absolute speed at which a person traverses the ground. Comparing extremes in height helps illustrate the concept. Consider a small child, an average height mother, and a very tall father walking together at the same speed. If they are maintaining the mother's normal comfortable speed (and all are unimpaired), the child would be walking quite quickly relative to his height, and the father would be walking slowly relative to his height.

Apply that concept to your participant. For her height, is her normal walking speed slow, average, or fast? Most people will fall in the average category.

Answering 'YES' to Quick Stepping disables this command.

Range of Speeds

This setting influences how broad a range of step rates the StepWatch will "expect." For most people, a moderate range is appropriate. Some participants, however, rarely change their walking speed because of habit, preference or (most commonly) physical limitations. Still fewer walk at both slow and fast extremes.

It can be difficult to evaluate whether a person "regularly engages in both extremes." The following examples may help with the determination. Remember, a person must regularly use **BOTH** extremes to qualify.

The key is to determining a slow extreme is to identify whether the person regularly walks such that the leg is in the swinging phase for a long time.

Examples of the slow extreme might be:
• walking with a slow-moving elderly person
• walking with a young child
• meandering window shopping
• slow pacing with a long stride

Examples of the fast extreme might be:
- fast walking (e.g. for exercise or within a job that requires moving quickly through large spaces)
  - jogging or running with a fairly long stride (Note: if a person regularly runs with a short rapid stride, the Quick Stepping designation will be YES and the Range question will not be relevant)
- exercising on a Stair Master
- bicycling with a moderately fast cadence

Note that bicycling appears to the StepWatch as walking. If a person regularly bicycles, it is helpful to get some idea of how quickly they pedal ("spinning" vs. moderate pedaling vs. slow pedaling.)

Answering 'YES' to Quick Stepping disables this command.

Leg Motion

From the time the participant is in your presence, observe how they move. It is the motion at the leg and ankle that is most relevant since that is what the SAM senses. Look at the motion of their leg/ankle rather than their whole gait. It is helpful to observe them as they walk to greet you. It is common for people to walk differently than they usually would if they know that they are being observed.

Dynamic/fidgety:
If your participant is especially fidgety or tends toward quick, abrupt movements, use the "Fidgety and/or Dynamic" setting. Most children fall into this category. This setting may also be appropriate for people who are foot tappers, especially heel tappers.

Gentle/geriatric:
If the participant moves very slowly or gently, use the "Gentle and/or Geriatric" setting. This designation may also be appropriate for people who regularly undertake activities with subtle steps (usually in confined areas) if you are having trouble "capturing" those steps. Examples of gentle/or geriatric defined activities might be:
- working behind a counter or at a workbench
- dancing gently
- cooking in a small kitchen

If you are unsure, program a monitor with the "Normal" setting and put it on the participant. Have them demonstrate their movements. Watch whether the StepWatch light blinks when they take steps. If you are regularly missing steps, try using the "Gentle and/or Geriatric" setting.

Be careful about assuming a "Gentle and/or Geriatric" setting for persons who walk with a prosthesis, walker, cane or crutches. It is important to watch the motion of the leg in these cases. Often the leg swings forward fairly rapidly and a "Normal" setting is appropriate. "Normal" is also appropriate for older people whose ankle and leg motion is flexible.

Normal:
Most people fall in the "normal" category. When in doubt about the correct setting, select normal and test by observing the participant walk wearing the monitor. If the SAM double counts steps the cadence is too high and if the monitor does not count steps, the cadence is too low. Troubleshooting these events is listed in the verify settings section.

Add notes

Enter the participants ID followed by an underscore and then the time period in the notes field (example: 2550001DR_12). (Do not enter a space between the underscore and time period.) **This is the only way the participant ID and time period will be included in the downloaded data file when the monitor is returned.** Please check and double check that you have entered in this information correctly. Time period codes are below:
Baseline= 01
12 month follow-up = 12
24 month follow-up = 24
36 month follow-up = 36

Initiate Programming

When you are satisfied with your description, click the Start button to initiate programming. Programming will take a few seconds. When programming is completed, the green light on the docking station will come on, and the software will tell you when recording will start.

Verify the Settings

Once the programming is completed, you should confirm the appropriateness of your settings by having the participant walk at their normal pace while you observe the LED blinks. The LED should blink one time per step as your participant walks at their normal speed. You should also have them walk at the "slowest pace they would normally walk" and the "quickest pace they would normally walk." If they routinely run or do other quickly stepping activities, you may want to have them demonstrate the activity so you can evaluate the performance of the monitor by watching the light blink. Watch to see that the SAM is not double blinking on slow steps, or missing fast steps.

Your participant should not try to look at the monitor as this will change their walking pattern. If you are walking with your participant, do not lead them or trail too far behind as this may influence their natural pace. If possible, stand still at their side and simply observe.

If the SAM is not responding appropriately, take it off, put it back in the docking station and revisit the Easy Start questions (quick stepping, walking speed, range of speeds, and leg motion). Then, repeat these procedures with the new settings to verify that the SAM is properly detecting steps.

Tips

If the SAM is double counting, go toward settings for slower walking speeds. If that is not enough, go toward more dynamic gait. If that is not enough, fudge on the subject's height. Represent them as taller (by 5 inches at first).

If the SAM is undercounting, try to assess whether the problem is steps taken too quickly, or very gentle motion. Adjust accordingly with either the walking speed or the leg motion parameters in the Easy Start.

Be sure your participant understands that the LED will only flash for the first 100 steps that they take. The SAM is still recording data even though they light is not blinking. The flashing light is used as a simple tool to examine cadence settings.

Virtually any gait style can be monitored accurately, but the difficult ones require more in depth understanding of how the settings relate to each other and respond particular gait styles.

Warnings:
Once a monitor has been programmed, **do not** double check your settings by "reading recorded activity" or "reading current settings." Both of these actions will stop the recording, and no data will be logged until the monitor is reprogrammed.

If you have programmed a monitor to start recording but it has not yet begun, do not try to read recorded activity until it has had time to record.

Giving the Monitor to LABS-2 Participants

Review the directions on the first two pages of the participant's activity diary with each participant before giving them a SAM to wear home. In addition, go over how to fill out the diary grid. Explain that the monitor should be returned, by mail, in the provided envelope no matter how much it was worn, within 11 days of the date it was taken home. Once it is received, the participant will get a physical activity report. Also, mention the expense of the monitor ($500.00) and the importance of it's return.

Get Personal:

A key to the success of using SAMs in LABS-2 is that coordinators are personal and proactive in planning for compliance with the subjects. Talk the subject through an individualized plan for remembering to put the monitor on in the morning (complete with specifics about where they will put the monitor at night if they are taking it off), and stress the importance of wearing it all day during data collection. Also, let the participant know that he or she may wear the SAM 24 hours a day, including in the shower or pool (but not in a very hot bath or hot tub). Then show the participant two examples of activity reports. The second report should have a couple days with greater than 10 hours of wear, a couple days with less than 10 hours of wear, and a couple days of no wear. Explain that we are unable to use the data from several days on the activity report because the SAM was not worn for much of the day. A personalized plan does not take a lot of time to develop. Subjects typically respond well to the interest you show in their life, and the result is higher quality data.

Keeping Track of the SAMs:

Please use the log (see appendix) to keep track of your site's SAMs. It includes participant ID, SAM serial number, date SAM given out, and the date by which you expect to receive the SAM.

Sending Reminder Letters to Participants:

A letter (see appendix) should be sent by mail to the participant the day that they receive the SAM so that they receive the letter a day or two later. It may be helpful to have participants complete the address portion of the envelope, to ensure that the appropriate address is used.

SAM Retrieval:

The SAM should be returned within 2 weeks (14 days) after it was taken home. If a SAM is not returned on time a letter (see appendix) should be sent and the call protocol should be followed to try to contact the participant by telephone. If you have not been able to contact the participant by telephone, or if you still have not received the SAM three weeks (21 days) after a participant takes a monitor try reaching the participant by the means outlined in the participant contact section (peoplesearch). All such losses should be noted on your log and periodic participant contact should be attempted and noted.

Downloading Your Data

When you receive a SAM by mail you should try to download the data from the monitor as soon as possible and no later than one week after receipt. Place the monitor face down on the dock and select “Read Recorded Activity” in the Monitor menu to download the data from your StepWatch. This will probably take a few seconds unless you have a very large file.

Do not remove the monitor from the dock while it is communicating (while the red light on the dock is on).

If you are unable to read a monitor see Troubleshooting and the program Help files.

Tips

Prior to Reading a monitor, be sure the Preferences are set as you wish. If you have not moved your StepWatch program out of it’s home directory (you should not), the preferences will remain as the last user set them. If multiple people are using the system, check the preference settings for the correct divisions between activity levels (30, 80,150).

If you accidentally select "Start Recording Activity...” when you meant to read recorded activity, allow the communications to continue until the start StepWatch screen appears, then click cancel. Your data will not be compromised.

Viewing Your Data and Printing the Participant Report

When the data have been read you will see 4 tabbed windows. The first window give you “Summary Information” which includes the monitor ID, notes (participant ID_timeperiod), the time the monitor was programmed, started, and read, a list of days the monitor was running, other information pertaining to monitor settings, and a graphical representation of the data for any chosen day.

Print Preview... and Print

Most of the information visible in the downloaded StepWatch file may be printed. However, for LABS-2 you only need to print the **Client Week Report**.

Page Setup...

The Page Setup command under the File menu gives the standard page set up options applicable for your chosen printer driver. Prior to initiating the Print Preview, we recommend you check your Page Setup settings. If you are using a computer running Windows, and your previewed or printed pages seem clipped at the edges, use the Page Setup to set all four margins to zero.

Recall, in preferences you chose not to "show color bands," but to show the horizontal grid lines on step plots (by checking "draw grid lines").

Representations of the Step Data

Graphical Representations of the Data

There are several tools providing graphical representations of the data. However, for the purpose of LABS-2 we will not be using most.

Client Week Report

In Print Preview, generate a Client Week Report. This is in a format suitable for distribution to participants. This should be sent to the participant by mail within one week of the return of the SAM along with a letter that explains the report (see Appendix). See *Printing Results.*

Analysis Variables and Calculations

Step counts are for both legs so counts are comparable to a standard pedometer.

Averages

All averages are based on the whole days you have chosen to include for analysis. Days that are entirely excluded will appear in italicized text in your analysis windows, but will not be included in the averages.

Average Included Steps

This is the daily average of the steps taken during all included time. It is the sum of all included steps divided by the number of whole or partial included days.

Average Minutes at None, Low, Medium and High Activity

These variables reflect the minutes and percentage time spent at each activity level during the included time relative to the total included time. The percentages are calculated using the total minutes accumulated at each level divided by the total included minutes for all days.

Activity/Rate Calculations

Note: To sort your days by any measure, click on the title bar for that measure in the statistics table in the Activity/Rate window.

Step Total

Total number of steps in the day regardless of whether a day is excluded.

Steps Included

Total number of steps in the time included for analysis.

Minutes Included

Total number of minutes in the day included for analysis. Will always be 0 or 1440.

Minutes None

Total minutes of the time included for analysis in which no steps were recorded.

Minutes Low

Total minutes of the time included for analysis in which the step count fell between and inclusive of 1 and 30.

Minutes Medium

Total minutes of the time included for analysis in which the step count fell between 31 and 80.

Minutes High

Total minutes of the time included for analysis in which the step count was greater than 80.

Handling Data Files

Save and Save As...

The Save command under the File menu allows you to save step data to a file on your hard disk and to save alterations to a file already existing on your hard disk. Save all files to the main Client File folder or directory which exists within your StepWatch Library. If the file does not already exist on your hard disk (i.e. the data have just been read from the StepWatch), a window will open that allows you to name the file and choose where to save it. **The file should be named as the participants ID followed by an underscore and then the time period (example: 2550001DR_12).** (Do not enter a space between the underscore and time period.)**.** Please check and double check that you have entered in this information correctly. Time period codes are below:
Baseline= 01
12 month follow-up = 12
24 month follow-up = 24
36 month follow-up = 36

Note, with either Save or Save As..., the specifications for the time you have chosen to include or exclude for analysis will be saved with the file. The excluded data will not be lost and will be available for inclusion later if needed.

If you are downloading a re-do: **The file should be named as the participant's ID followed by an underscore and then the time period (example: 2550001DR_12). The unattended file transfer (DataStream) will rename the file with a datestamp prior to transfer and will place the file in the Archive folder. The original file, therefore, will also be maintained in the**

Archive directory. Please contact the LABS DCC with any questions related to this process.

Windows Users Only

On Windows machines, the StepWatch software automatically puts a .swb extension on the suggested file name when you use the Save or Save As... commands. Some versions of Windows (such as XP) provide an option in the Control Panels (Folder Options/View) for showing or hiding extensions of known file types. If your control panel is set to hide file extensions, you will not see the .swb in the suggested file name when you use the Save or Save As... commands. If you edit the suggested file name, the (invisible) .swb extension will not be appended to the name actually assigned to the file. In that case, to make your Open file list show the StepWatch data files, you have 3 options:

1. You may explicitly add a .swb to the end of each StepWatch file name when saving files.
2. You may change your Control panel setting to show file extensions.
3. You may select All Files in the File Type pop-up menu in the navigation window that opens when you use the Open File command.

Opening and Closing Files

The following functions work for StepWatch files.

Open

The Open command allows you to open a data file created by the StepWatch 3 program.

On machines running Windows, all files in a directory which end with .swb will show up in the list of StepWatch Document file types showing in your Open dialog box. To see files not ending with .swb, you will need to select the "All Files" from the File Type pop-up menu in your Open screen.

Open Recent

The Open Recent command allows you to quickly access any of the last 5 data files that were opened. The data files are discrete files stored on your hard disk, in contrast to database records. If you move a file on your hard disk, the Open Recent command will not be able to find that file until it has been re-opened.

Close

The Close command closes any data window. If the window contains step activity data that have not been saved to a file, you will be asked whether you want to save the file before closing.

Sending Files to the DCC

After data files are filtered and saved to the Client folder in the SAM library they will need to be transmitted to the DCC. StepWatch data files should only be downloaded to the one computer your site designated for SAM download (the DCC installed the necessary file transfer software on that computer). Unattended transfer of these files (DataStream) will occur once a day at 12:00 PM as long as the computer is on at that time. The DataStream process will rename all files in the Client Files folder by adding a date stamp to the file name, transfer them to the DCC and move them to the Archive folder that is in the Client Files folder of the SAM computer.

Troubleshooting

The StepWatch program provides some tools to assist in troubleshooting including messages during the program operation and several diagnostic tools in the menu. The Help functions available in the software are also useful and, for some topics, provide more information than this manual. Check the Cyma web site for a list of known issues and fixes. Beyond that Cyma provides technical assistance.

Communications Errors

If you are not able to read your StepWatch or if the red and blue lights are flashing on your StepWatch dock:

1. Check the connections between the dock and the computer.
2. Make sure the StepWatch is properly aligned on the dock.
3. Make sure there are no bright lights shining on the StepWatch. Halogen lights can be especially troublesome. The infrared lights of some motion analysis systems also make shielding necessary.
4. Verify that your Communications Preferences have the correct port specified.
5. Verify that the computer can communicate with the dock and the StepWatch by using the "Communications Test".
6. Check that you do not have email or internet browser software running in the background. Intensive networking software can also cause errors.
7. Sometimes simply waiting for a while before attempting to read the StepWatch again solves the problem.
8. If you are not able to solve the problem, contact Cyma Technical Support. It is helpful if you have the exact wording of any error message and just when it occurs. They are happy to try to help you try to solve the problem.

Communications Test

You may use the Communications Test (in the Utilities portion of the Monitor menu) to check that your communications preferences and hardware are set up correctly and the StepWatch software is able to "talk to" the docking station and StepWatch.

1. Click the "Check Dock" button to verify that your computer is in communication with the docking station. You do not need to have a StepWatch on the dock to do this.
2. You may click the Check StepWatch button to verify that your StepWatch is properly communicating.

The Communications Test Advanced Settings should only be used with Cyma technical support.

Read Current Settings

Never use this feature.

View Communications Log

The Communications Log keeps a record of every time you program and download any StepWatch. This may be useful to you if you are unsure of the location or the state of a monitor. The log does contain all your monitor setup information, but in a fairly cryptic form.

SAM Failures:

Occasions where a participant successfully wore the SAM but the data was invalid: When downloading the data, please check for invalid dates or serial numbers. If these inconsistencies

are identified, then coordinators should attempt to download the file again. If the data is still faulty, ask the participant to wear a different monitor, if you believe that this is a participant who would be willing to do so. After that, have a staff member wear the faulty monitor and another properly working monitor for at least two days. **Check the dates on the faulty monitor.**

If they are correct then, compare the step counts with the other monitor to confirm that they are they are comparable. If the steps do not compare, please contact technical support with OrthoCare to identify if they can help with the problem or would suggest a replacement. Please note to always notify the DCC Coordinator when contacting OrthoCare so that the technical functionality can be monitored.

If the dates of the faulty monitor are NOT correct, compare the step counts with the working monitor to determine whether the steps counts are the same. Please contact technical support with OrthoCare to let them know you have a monitor that has incorrect dates (in addition, let them know whether steps counts are also incorrect) to identify if they can help with the problem or would suggest a replacement. Please note to always notify the DCC Coordinator when contacting OrthoCare so that the technical functionality can be monitored.

Appendix A: Sample Data

There is a sample data file called “DemoData.swb” in a folder called Sample Data inside your Participant Files folder. (On windows machines set to not display file extensions, the file name will appear as DemoData.) *Note: the sample data was provided with the first version of the SAM software that you loaded. It is not provided with the latest beta version of the software.*

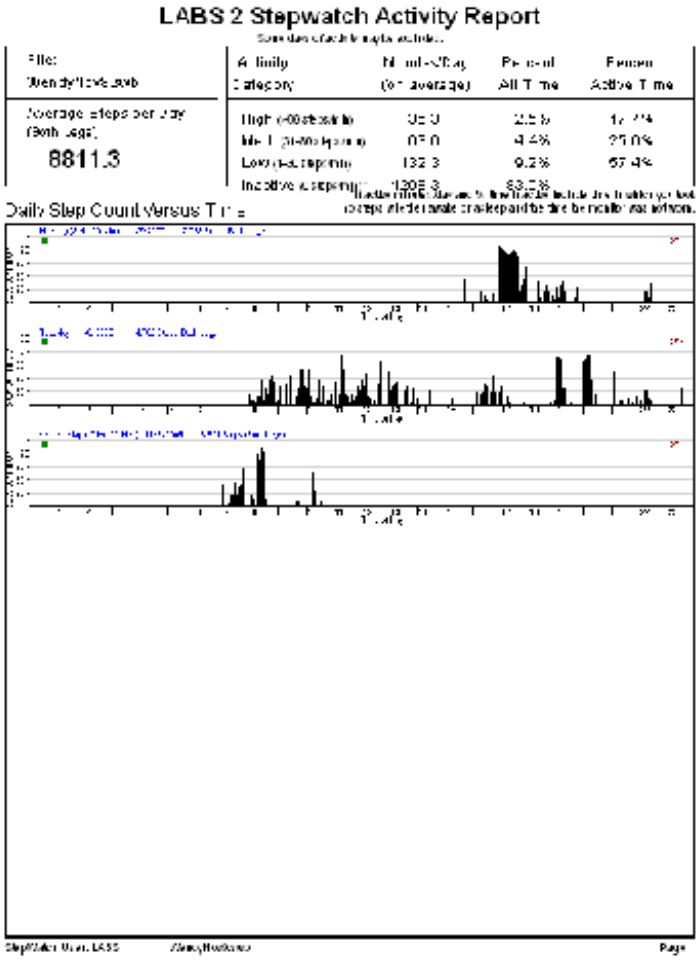
Open the demo file either by double clicking on the file or using the “Open” command in the File menu and navigating to the Sample Data folder. This file contains days that are entirely included, entirely excluded and partially included for analysis. You can use this file to practice interpreting the data and to experiment with many StepWatch program functions.

The activities undertaken by the participant include:

- Saturday June 29: Nine short holes of golf around noon. Facilitating children's parties and transportation in the afternoon and evening.
- Sunday June 30: A 1.5 hour drive to a wilderness area in the afternoon. Casual exploration of the wilderness area.
- Monday July 1: Office work until 6 PM. Vigorous house cleaning in the evening.
- Tuesday July 2: Quiet office work all day. Attending a child's little league baseball game in the evening.
- Wednesday July 3: Office tasks in the morning. Golf in the early afternoon. Errands by foot in the late afternoon. To a friend's house for dinner in the evening.
- Thursday July 4: Attending a baseball game in the afternoon, including a long walk to and from parking. Walk in the early evening which included a rest. Grocery shopping followed by a social party with adults in the later evening.
- Friday July 5: Playing baseball in the late afternoon. Cooking dinner then visiting with friends at home in the evening.

Appendix B: Activity Report

You will mail each participant a LABS-2 Stepwatch Activity Report after you have downloaded and cleaned their data. You create this report by going to "File", "Print" and selecting "Client Week Report." You may review the report before printing by selecting "Print Preview." See the example below. Please note, this example was made from data based on only 48 hours of activity. LABS-2 reports should be based on 7 days worth of activity.



LABS 2 Stepwatch Activity Report

Average steps per day (Both Legs):

8811.3

Daily Step Count Versus Time

Appendix B cont: Letter to accompany Activity Report

[Date]

[Name of participant]
[Address]
[Address]

Dear [Name of participant]:

Thank you for wearing the Stepwatch Step Activity Monitor (SAM) as part of your participation in the Longitudinal Assessment of Bariatric Surgery (LABS). I appreciate your participation and continued support of the LABS project.

I am sending you this letter to provide you with an activity report that describes your activity during the week you wore the SAM. The report includes the following components:

Average Steps per Day: the sum of all steps taken while you wore the SAM divided by the number of days you wore the SAM.

Activity Category: categories that characterize your activity level for the days in which you wore the SAM. Please note, time in which you did no activity or the SAM was not worn register as Inactive (0 steps/min).

Minutes/Day: Average number of minutes spent at each activity level per day. Please note, inactive minutes/day includes the time in which you took no steps whether awake or asleep and the time the monitor was not worn.

Percent All Time: Percentage time spent at each activity level during the 24 hour day. It is calculated using the total minutes accumulated at each level divided by the total minutes in the day. Please note, percent time inactive includes the time the time the monitor was not worn.

Percent Active Time: Percentage time spent at each activity level during the time you took at least one step per minute. Thus, inactive time is excluded from the calculations.

Daily Step Plots: plots of steps/minute for each 24 hour day included in the report. Please note, the total number of steps for each day is also included next to the date.

If you have any questions or concerns, please feel free to contact me at [insert Coordinator phone #].

Best regards,

[Coordinator]

Appendix C: Letter to be sent the day the participant takes the SAM home

[Date]

[Name of participant]
[Address]
[Address]

Dear [Name of participant]:

As part of your participation in the Longitudinal Assessment of Bariatric Surgery (LABS), you agreed to wear the Stepwatch Step Activity Monitor (SAM). I encourage you to continue wearing the SAM and filling out the activity diary.

I understand that this may, at times, seem like an inconvenience to you. Please keep in mind that by wearing the SAM before and annually after surgery you will be providing physical activity data that will help us understand how activity level in conjunction with bariatric surgery affects many health outcomes.

The SAM should be worn for 7 days from the time you awake in the morning until you go to bed at night. If you are having trouble remembering to wear it, it might be helpful to keep your SAM by an alarm clock, coffemaker or other part of your daily morning routine. Alternatively, you may continue to wear the SAM when you sleep so that you do not need to remember to take it on and off.

Your SAM should be returned no later than [insert date, 12 days from receipt of SAM]. After we have received your SAM, we will send you an activity report that describes your activity during the week you wore the SAM.

If you need another mailing envelope or have any questions or concerns, please feel free to contact me at [insert Coordinator phone #].

I appreciate your participation and continued support of the LABS project and look forward to hearing from you soon.

Best regards,

[Coordinator]

Appendix D: Sample Stepwatch Step Activity Monitor Log

Participant ID	SAM Serial ID	Date SAM given out	Date reminder sent?	Date SAM expected back	Date received

1 BACKGROUND AND RATIONALE

Limitation in ability to walk is an important outcome of morbid obesity. Walking ability and endurance can be directly assessed by performance testing. The 400-meter walk test has been shown to be related to VO_2 max (the maximum volume of oxygen consumed by the body each minute during exercise, while breathing air at sea level); thus the walk not only tests ability to walk but also physical fitness.

This test is a modification of a long distance corridor walk administered in the Health ABC study, a study of body changes in the elderly and how these changes affect cognitive and physical function. This modified test, instructs participants to **walk at their usual pace** (as opposed to walking at the fastest pace they can maintain).

2 MATERIALS NEEDED

- White cloth tape or marker and colored tape
- Polar heart rate monitor *(see §5.1.2, "Physical Measures" for details of use)*
- Digital stopwatch *(see §2.1 for details of use)*

2.1 STOPWATCH

The stopwatch will be used to measure the time it takes to complete the 400 meter corridor walk. Press the middle (mode) button to make sure you are in stopwatch mode. The display should read **0:0000**. To time the walk, press the right-hand button (labeled STA/STP) at the top of the stopwatch at the start and end of the walk. After recording the walk time (time at 400 meters or when the walk was stopped) on the 400 meter data collection form, use the stopwatch to time a two minute recovery phase. The time is digitally displayed on the stopwatch. To get the display to read **0:0000** again, press the left (lap) button. Time is displayed as minutes: seconds, hundredths of a second.

3 PREPARATION

3.1 COURSE PREPARATION: 20 METERS

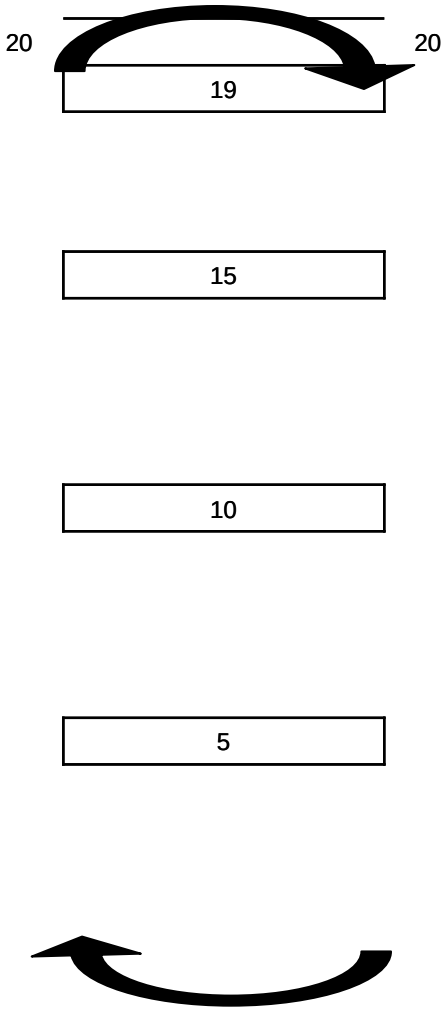
For consistency between centers, the walking course length will be 20 meters and should be laid

out in advance of participant's test in an unobstructed, dedicated corridor.
Cloth tape or marker should be used to indicate the beginning and the end of the 20 meter length. Place a 10 cm length of tape marking every 5 meters between the start and stop of the course. In addition place a 10 cm length of colored tape marking 1 and 19 meters on the course. Label each piece of tape (as in course illustration (§3.1.1). Note, if you are not able to leave tape on the ground, use a bright orange cone to clearly mark the turn around points at 1 and 19 meters. Participants are to walk in a clockwise direction going around the 1 and 19 meter marks (which allow for a 1 meter turn at each end).

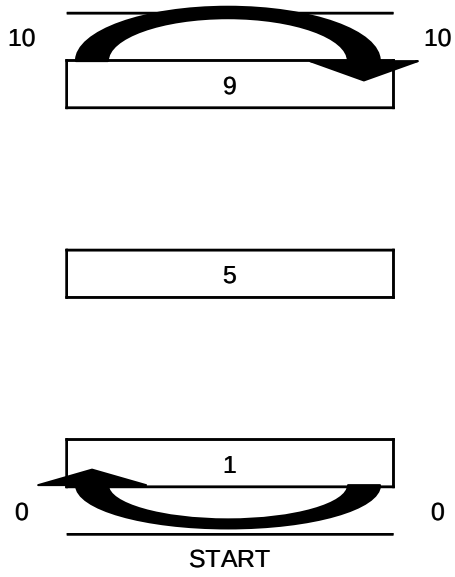
Sites that are unable to dedicate a 20 meter length of corridor for the 400 meter walk are permitted to dedicate 10 meters of a corridor, as in course illustration (§3.1.2); however, it is preferred that sites follow the 20 meter protocol as laid out in this §3.1.

A chair large enough to accommodate all LABS participants must be placed near the start of the course.

3.1.1 Course illustrations



3.1.2



3.3 PARTICIPANT PREPARATION

To eliminate the effect of different footwear on test performance, this test should be performed in tennis shoes or comfortable walking shoes with minimal or no heels. The participant should be instructed prior to the visit that they should wear or bring appropriate shoes to the clinic. Participants wearing footwear that impedes their walking should be excluded from the test.

4 ELIGIBILITY ASSESSMENT FORM

Use the Corridor Walk Eligibility Assessment Form to determine whether a participant should be excluded from the 400 Meter Walk. The exclusion criteria are explained below. If it is unclear to the examiner whether or not the participant's safety would be compromised to complete the walk, the participant should be excluded and the reason for exclusion appropriately noted on the Corridor Walk Eligibility Assessment Form.

Note, it is important to complete questions 1-5 on the Corridor Walk Eligibility Assessment Form even if a participant is found to be ineligible before you complete question 5 so that we know all of the reasons a participant is ineligible.

4.1 USE OF WALKING AID

If participant uses a walker or quad cane they are excluded from the 400 m walk. If the participant uses a straight cane for joint relief but is otherwise stable, or if the participant is blind but is not walking disabled they may attempt the corridor walk. For walking aid use *see question 5 on the medical form.* Examiners should pay close attention to the participant's stability throughout the walk to ensure that the participant is kept safe.

4.2 BLOOD PRESSURE

Refer to the blood pressure data collected as part of participant's clinical visit (*question 1.3 on the coordinator form).* The exclusion criteria are:

- SBP >180 mmHg

- DBP > 100 mmHg

4.3 HEART RATE

Refer to the heart rate data collected as part of participant's clinical visit (*question 1.4 on the coordinator form).* The exclusion criteria are:

- <40 bpm
- >110 bpm,

4.4 ECG

Prior to the completion of the 400-meter eligibility form and the participant's clinical visit, check the participant's chart to see if there were any abnormal ECG hard copy references in the last 12 months. The exclusion criteria are:

- Atrial fibrillation or atrial flutter (new onset)
- Wolff-Parkinson-White (WPW) or ventricular pre-excitation
- Idioventricular rhythm
- Ventricular tachycardia
- Third degree or complete A-V block
- Any statement including reference to acute injury or acute ischemia, or marked T wave abnormality
- Abnormal cardiogram indicative of ischemia without medical/cardiac clearance for surgery

Note: This exclusion criteria only applies to participants who have had an ECG. If the participant has not had an ECG, please refer to other exclusion criteria in this *§4.*

If a participant recently had an ECG but you do not have the report and the participant does not know the results, mark "no" to all ECG sub-questions under "Is there evidence of any of the following abnormal ECG findings in the last 12 months." However, if the participant feels it would be unsafe to attempt the walk because of a heart related problem that might have been picked up with the ECG, mark "yes" to " Do you feel it would be UNSAFE for you to walk up and down this hallway?" and "yes" to "Test results pending."

If the participant feels that it would be UNSAFE to complete the walk but does not actually provide a reason related to safety (e.g., I'm tired, my knees hurt…) please gently encourage the participant to attempt the walk, noting that if he/she gets too tired or uncomfortable he/she may stop at any time. If the participant is not convinced to attempt the walk, please indicate the reason the participant feels it would be "unsafe" under item 6 or indicate that the participant refused (e.g. participant is not in the mood or has to go vs. SAFETY reason).

4.5 ADDITIONAL EXCLUSION CRITERIA –PAST 3 MONTHS

The Corridor Walk Eligibility Assessment Form lists several additional exclusion criteria related to events that may have occurred in the past 3 months:

The next test assesses your walking ability by having you walk about 1/4 mile. To determine if you should try the test, I need to ask you a few questions.

- *In the past 3 months, were you hospitalized for myocardial infarction or heart attack?*
- *In the past 3 months, have you had angioplasty or heart surgery?*
- *In the past 3 months, have you seen a health professional or thought about seeing a health professional for new or worsening symptoms of chest pain?*
- *In the past 3 months, have you had angina?*
- *In the past 3 months, did you have major thoracic (chest), abdominal or joint surgery?*
- *In the past 3 months, were you hospitalized for 3 or more days*?*

Note: Hospitalizations for **mental health don't exclude participation in the corridor walk unless the participant is psychomotor retarded (having motor-mental retardation) which is defined as a reduction of physical movements due to major depression.*

Motor-mental retardation includes real physical difficulty performing activities that normally would require little thought or effort, such as walking up a flight of stairs, getting out of bed, preparing meals and clearing dishes from the table, household chores, returning phone calls, etc.

*If the answer is "Yes" to **any** of the above questions you **do not** need to ask questions 6 and 7 on the eligibility form. Do not administer the 400-meter walking test or complete the 400-meter walk data collection form.*

4.6 ADDITIONAL EXCLUSION CRITERIA

If the answer is "No" to all of the above questions, continue to question 6 on the eligibility form:

Do you feel it would be unsafe for you to try to walk up and down this hallway?

If the participant answers "Yes" you **do not** need to ask question 7 on the eligibility form. Do not administer the 400-meter walking test or complete the 400-meter walk data collection form. If the answer is "No" ask the last question:

Are you wearing shoes that make it difficult for you to walk?

If the answer is "Yes" please discuss this issue with the participant. If the shoes he/she wore were sufficient for walking around the clinic they are probably sufficient for participating in the walk. Tennis shoes/sneakers are NOT needed. However, after your discussion if the answer is still "Yes" do not administer the 400-meter walking test or complete the 400-meter walk data collection form. However, if participant has comfortable shoes to change into ask participant to change shoes and mark no.

4.7 Refer to Section 9 – intervention protocol for details on handling adverse events that are associated with the walk.

5 ADMINISTERING THE TEST

5.1 EXPLAIN THE TEST

*We would like you to attempt to walk 400 meters (about ¼ mile) at your **usual walking pace,** as a measure of physical function. So that I can record your heart rate before, during and after the walk I'd like you to wear a Polar heart rate monitor. The monitor has two pieces. The first piece is placed under your shirt against your chest with a band. The second piece, which displays your heart rate, is worn like a wrist watch. Immediately before and after the walk I will measure your heart rate. I will also measure your resting heart rate 2 minutes after you have completed the walk. Therefore, after the walk I will ask you to please sit and rest for 2 minutes. May I put the heart rate monitor on you now?*

Polar Heart Rate Monitor Tips:
1) To get the Heart Rate Monitor to read more efficiently put the watch on the participant so that the watch is read when the palm is up (under the wrist)
2) If the HRM is not reading properly try to adjust the chest strap by raising it higher around the participant's sternum.
3) If the HRM is still not reading properly re-apply moisture to the back of the unit that comes in contact with the participant's skin.

After putting the Polar Heart Rate Monitor on the participant, accompany the participant to the starting line and ask him or her to sit in the chair at the start while you explain the next section. Note, if the participant refuses or can not wear the Polar Heart Rate Monitor he/she is not excluded from the 400 meter walk.

During this walk, I will ask you to rate how hard you feel you are working while you continue walking. When I ask you to rate how hard you are working during the walk, I want you to think about the total feeling of exertion in your overall body, including your breathing and muscles.

Please note, as a safety precaution if your heart rate goes above 135 beats per minute at any time during the walk the heart rate monitor will beep and I will ask you to slow down. Please do no be alarmed, simply slow down. If your heart rate remains above 135 beats per minute for more than 5 minutes I will end the walk and ask that you sit and rest.

If, at any time during the test, you feel any chest pain, tightness or pressure in your chest, you become short of breath or if you feel faint, lightheaded or dizzy, or you feel knee, hip, calf, or back pain please tell me. If you feel any of these symptoms, you may slow down or rest. You may also choose to stop the walk.

Do you have any questions?

5.2 TEST

Right before you start the test measure the participant's resting heart rate (while they are still sitting), and record this value. *Before taking a resting heart rate the participant should be sitting quietly, with feet flat on the floor, in an erect but comfortable posture for **at least five minutes**,*

and for at least thirty minutes without smoking or consuming caffeine-containing beverages.

If you can not use the Polar Heart Rate Monitor because the participant is too large for the strap or refuses to wear the strap, take heart rate manually.

After you've recorded the starting heart rate prepare the stop watch by resetting it. As you say "go" start the stop watch and the heart rate monitor simultaneously. This way the 400m will be recorded on the stopwatch (time) and Polar Heart Rate Monitor (time and heart beats per minute.

When I say 'GO,' start walking at your usual pace. "Ready, GO."

For every lap, offer standard encouragement, and call out the number of laps completed and the number remaining. Record each lap on the form.

Encourage participant each lap (or every other lap if the 20 meter course is used): *Keep up the good work. You are doing well. Good job. Etc.* Also tell the participant, *You have completed __ laps and have __ to go.*

When the participant completes **4 laps**, their effort should be recorded.
Please tell me how hard you feel you are working right now. Is it "light", "somewhat hard", "hard", or "very hard"?

If the participant reports "hard" or "very hard", remind the participant to walk their "usual pace without overexerting yourself" and ask the question again after 8 laps if answer is hard or very hard.

I would like to remind you to walk at your usual pace. If you develop chest pain or significant shortness of breath, or are too uncomfortable to continue, please stop walking and tell me. If you need to, you may stand in place and rest.

If the participant feels they need to stop and rest, they may stand in one place and rest. Also, if the participant appears to be in obvious distress (excessive sweating, unusually pale, labored breathing, unsteady/wavering gait, appears confused, or unresponsive to questions) or pain, you may recommend that he/she stand in place and rest for a moment. After **30 seconds**, ask them if they can continue walking. If they can, continue the walk and record the rest on the form. If they need to rest longer, have them continue to stand. After **another 30 seconds**, ask them if they can continue walking. If they can, continue the walk and record the rest stop on the form.

If they cannot continue after a 60-second rest or if they need to sit down, stop the test. There is no limit to the number of rest stops as long as they can complete the walk without sitting and within 15 minutes.

Recording heart rate and time at end of walk:

1) When the participant completes 400-meters (10 laps, first footfall on or over the finish line) or the walk is stopped, stop the stop watch and the heart rate monitor immediately (at the same time) **paying attention to the heart rate as the participant finishes**.
2) Record the walk time and restart the stopwatch to time the 2-minute recovery period.
3) Ask the participant to sit for a 2 minute recovery period.*

4) During the 2 minute recovery period record the participants' ending heart rate **which must be viewed on the watch as the participant finishes the walk**, as well as their average heart rate for the walk by going into 'file.' Note, the average heart rate will almost always be higher than the starting heart rate and lower than the ending heart rate. However, if a participant slows down at the end of the walk the average heart rate may be higher than the ending heart rate.
4) Restart the HRM
5) When the two-minute period is up read the HRM and record the heart rate that is on the watch at that time.

Complete the remainder of the 400-meter walk form with the participant present.

*Ideally all participants will sit down for the recovery period. However, if a participant asks to remain standing at the end of the walk, allow him to do so but after 30 seconds ask him if he is now willing to sit. Do so every 30 seconds until the participant sits or 2 minutes has passed. If the participant remains standing for the entire recovery phase, still measure the 2 minute heart rate as described above.

6 STOPPING

If possible, the test should **not** be stopped cold. The participant should be told to slow down, and the examiner should quickly approach and meet the participant to check their heart rate, and record the heart rate, time, and distance. If necessary, bring a chair to the participant. Always indicate on the 400 M Corridor Walk Data Collection forms why the participant did not complete the walk.

6.1 EXAMINER INITIATED STOP

The examiner may initiate a stop if the participant's heart rate exceeds 135 and remains above 135 for more than 5 minutes. The participant's heart rate monitor will emit a short beep to alert you and the participant that the heart rate is out of range. If a participant does not wear the Polar Heart Rate Monitor you will not know if his/her heart rate exceeds 135. Therefore, error on the conservative side and ask the participant to take a break and stand still so you can manually measure his/her heart rate if you suspect it may be too high. As long as the participant does not rest for more than 60 seconds during this break and you feel it is safe, he/she may continue the walk.

If a participant appears short of breath (has difficulty talking while walking) or complains of dizziness, he/she should be asked if he/she feels able to continue to walk. If so, a staff member should walk by the participant at a close distance to prevent falling for the rest of the walk and the participant should be asked about his/her symptoms **every two minutes** for the rest of the walk. Participants may stop the walk at any time, but should not be allowed to lean against any wall or other surface (desk, counter etc.). Staff may stop the walk for evidence of inability to talk while walking, unstable gait, or any other staff concern about the immediate safety of the participant. All participants who exhibit the above symptoms should be escorted to a chair upon stopping the walk and should be guarded when first getting up again.

Note that you should only mark yes to reason(s) (for question 6.3 'Why didn't the participant complete 400 meters (specify no or yes to each)?) why the participant didn't complete the walk, not to all symptoms the participant experienced during the walk. In many cases only one reason should be marked.

Use the option “reported calf pain during test” to report ANY leg pain that was the reason the participant quit the walk. Thus, shin, thigh and quadriceps pain should all be reported under calf pain from this point forward (and should no longer be listed under “other”).

6.2 PARTICIPANT INITIATED STOP

Participant reports a significant degree of any of the following symptoms:

- chest pain, tightness, or pressure
- trouble breathing or shortness of breath
- feeling faint, lightheaded or dizzy
- leg pain
- need to sit down
- OR participant requests or needs their cane or assistive device to complete the test

As noted above, if the test is stopped, record heart rate, distance covered, and time. Also, complete the 2 minute recovery heart rate. Record the reason on the 400-meter Walk data collection form. At any point of concern, contact the clinic supervisor to come and assess the participant. This may include measuring the participant's blood pressure or other assessments to be determined by the clinic supervisor.

6.3 TIME LIMITS

The protocol allows for rest stops, but the total test time should not exceed 15 minutes. If the total elapsed time reaches 15 minutes, stop the test and record the distance covered.

7 CHEST PAIN/OTHER SYMTOMS FROM TEST

If the participant develops chest pain or other symptoms listed below, the clinic supervisor should be notified immediately.

If a participant requires medical attention as a result of the below symptoms during or upon completion of the 400 M walk, an Adverse Event report is to be completed.

1. Chest pain, pressure and/or other "anginal symptoms".
2. Severe shortness of breath defined as greater than anticipated for the level of physical exertion during the 400-meter walk.
3. Loss of consciousness or an acute or new-onset bout of "dizziness" and/or "lightheadedness" that does not resolve with termination of the test and/or quiet sitting.
4. Persistent severe lower extremity pain that does not resolve with termination of the test.
5. Wheezing/dyspnea

9.1 BDI Intervention Protocol

The BDI questionnaire can be administered in clinic at a scheduled LABS appointment, or over the phone within the assessment window as defined in the protocol. The BDI **CANNOT** be mailed to the participant for completion.

<u>If administering in clinic:</u>

- LABS personnel (Study coordinator) must be present to administer the questionnaire.
- Once the questionnaire is completed by the subject and returned to the coordinator, the coordinator should immediately check the completeness of the instrument.
- Before the subject leaves the clinic or proceeds to the next step in the LABS-2 schedule, the coordinator should do a specific assessment of the subject's response to question (I):

  ☐ *I don't have any thoughts of harming myself.*
  ☐ *I have thoughts of harming myself, but I would not carry them out.*
  ☐ *I feel I would be better off dead.*
  ☐ *I have definite plans about committing suicide.*
  ☐ *I feel my family would be better off if I were dead.*
  ☐ *I would kill myself if I could.*

- If any of the highlighted responses are checked by the participant, the coordinator should immediately notify (page) the study PI or designated clinician at the site.
  - The coordinator should wait with the subject until the PI or designated clinician arrives to handle the case.
  - The PI (or designated clinician) should assess the subject for risk of imminent harm to self and contact emergency services if needed.
  - If the PI (or designated clinician) is not immediately available, emergency services should be notified (911).

<u>If administering over the phone:</u>

- Sites that administer the Beck Depression Inventory (BDI) via telephone must adhere to the following guidelines for participant safety.
  - The interviewer must have on hand prior to the scheduled phone contact, the physical address (No PO Box #) of where the participant will be during the interview.
  - The Interviewer at each site must have the pager number of an on call designated clinician (affiliated with the Site but not necessarily the PI) in

case the need would arise to have the designated clinician speak with the participant.

- There must be at least one other research personnel on staff at the time of the interview who is aware that this interview is taking place and also has the information listed above. (for example: additional RA, PI or secretarial staff)

- If during the administration of the BDI, it would be clinically indicated to address endorsed items, the following procedures must be followed:

    - The interviewer should stay on the phone with the participant, while the additional staff member pages the on call PI or designated clinician.

    - The PI or designated clinician on call should speak with the participant on the phone. This can be done by phone transfer.

    - If necessary, emergency services in the participant's locale should be contacted and sent to the address given.

    - The PI or designated clinician should stay on the phone with the participant until emergency services arrive.

9.2 Suicide Risk Assessment Intervention Protocol

On July 26, 2012, the LABS SC approved recommendations provided by the safety committee as follows:

For participants who select a question item that triggers a need for a safety response, but report no thoughts/plans in the past 4 weeks (and thus do not trigger the "high risk protocol") the following protocol should be followed:

- *The coordinator should notify the study PI or designated Clinical Personnel at the site within 3 days of the completion of the SBQF.*
- *The PI should contact the participant within 7 days of the completion of the SBQF. At least 3 attempts should be made within this time frame.*
- *The PI or designated clinician should assess the subject for risk of imminent harm to self and contact emergency services if needed (see example phone script at end of protocol).*
- *If contact cannot be made within 7 days, a certified letter should be mailed to the participant (please see example letter).*
- *Since the SBQ which assesses "since surgery" is only given at the same time as the SBQF, the SBQ will not be used to trigger a safety protocol.*

PROTOCOL:

All LABS-2 participants must complete the Suicide Behavior Questionnaire (SBQ) and Suicide Behavior Follow-up Questionnaire (SBQF) in clinic at a scheduled LABS appointment or over the phone with a LABS coordinator as specified below.

Clinic administration:

- LABS personnel (aka coordinator) must be present to administer the self-assessment questionnaires.
- Once the questionnaires are completed by the participant (and before the participant leaves the clinic or proceeds to the next step in the LABS 2 schedule) the coordinator must immediately check the completeness of the instrument and assess the subject's response to specific questions as indicated below.

Over the phone administration:

- Prior to the scheduled phone contact the coordinator conducting the interview should have on hand, the physical address (No PO Box #) of where the participant will be during the interview. Once phone contact is made the coordinator must verify the address before starting the interview.
- The coordinator must have the pager number of the PI or designated clinician at his/her site in case the participant endorses a response requiring their input.
- There must be at least one other research personnel on staff at the time of the interview who is aware that this interview is taking place and also has the information listed above (for example: additional RA, PI or secretarial staff).

- Once the interview is complete, assess the subject's response to specific questions as indicated below.

Assessment of responses:
Determine if the participant selected a highlighted response below (indicating prior intent or a history of prior suicide attempts or greater than a mild level of suicidal thoughts or wishes) to SBQF 1, 3 or 4.

Question 1- In the past 12 months, have you ever thought about or attempted to kill yourself?
Never
It was just a brief passing thought
I have had a plan at least once to kill myself but did not try to do it
I have had a plan at least once to kill myself and really wanted to die
I have attempted to kill myself, but did not want to die
I have attempted to kill myself, and really hoped to die

Question 3- In the past 12 months, have you **ever** told someone that you were going to commit suicide, or that you might do it?
No
Yes, at one time, but did not really want to die
Yes, at one time, and really wanted to die
Yes, more than once, but did not want to do it
Yes, more than once, and really wanted to do it

Question 4- How likely is it that you **will** attempt suicide someday?
No chance at all
Rather unlikely
Unlikely
Likely
Rather likely
Very likely

If a highlighted response to question 4 on the SBQF is selected, the coordinator must follow the "high-risk protocol" below.

High Risk Protocol

- The coordinator should immediately notify (page) the study PI or designated Clinical Personnel at the site.

- The coordinator should wait with the participant (in person at the clinic or on the telephone) until the PI or designated clinician arrives to assess the case.

- The PI or designated clinician should assess the subject for risk of imminent harm to self and contact emergency services if needed.

- If the PI or designated clinician is not immediately available, emergency services should be notified (9-1-1) and given the participants' contact information to local emergency services. The coordinator should stay on the phone with the participant until emergency services arrives. In addition, once the PI or designated clinician is contacted by the Coordinator, he/she should follow-up with the participant by phone.

If any of the highlighted responses to questions 1 or 3 on the SBQF are selected, the coordinator must ask the applicable question(s) in reference to the **past 4 weeks**. (e.g., Have you thought about or attempted to kill yourself in the past 4 weeks?). If yes, follow the "high-risk protocol" above.
If the participant reports a history of suicidal thoughts/attempts/telling someone about plan, but reports nothing like that **in the past 4 weeks** the following protocol should be followed.

Suicidal thoughts/attempts/telling someone about plans, **but not in the past 4 weeks**:

- The Coordinator should notify the study PI or designated Clinical Personnel at the site with-in 3 days of the completion of the SBQF.
- The PI should contact the participant within 7 days of the completion of the SBQF. At least 3 attempts should be made within this time frame.
- The PI or designated clinician should assess the subject for risk of imminent harm to self and contact emergency services if needed (please see example phone script).
- If contact cannot be made within 7 days, a certified letter should be mailed to the participant (please see example letter).

All activity must be noted in the participant's research file.

Phone script:

"Hello this is Dr. _____ from the LABS study. Do you have a minute to chat privately?

The reason I am calling you is that your answers on a self-report form you completed during your last research visit suggested that you have *(SELECT APPROPRIATE CHOICE BASED ON SUICIDE FORM RESPONSE)* 1) had a plan for suicide in the last year but did not attempt suicide and/or 2) thought it was likely you might attempt suicide in the future. We are concerned and would like to know if you got help or would like to get help.

If participant indicates an ongoing problem and is not in treatment:

- "Could I offer you some information about possible resources in this area that might be helpful for you?" (Provide over the phone but offer to mail information as well)

Additional points to consider making:

- "My calling doesn't necessarily suggest that you are currently having a problem; I only wished to discuss this with you briefly to see if you might want some help."
- "We appreciate your answering these questions honestly."
- "Thanks much for discussing this with me and for your participation in the LABS project. We very much appreciate your ongoing participation and your willingness to answer these questions."
- If participants notes that they thought their information was confidential/de-identified and is upset that they were called, please gently remind them that their informed consent document stated that researchers can take steps to prevent serious harm (for more details-exact language from informed consent document is below).

  Informed consent language:
  "Please note that even with the Certificate of Confidentiality, investigators are able to take steps to prevent serious harm to you or others. For example, if the study staff learns of possible suicidal tendencies or other risk of harm to yourself or others, we are required to notify the proper medical providers or legal authorities. However, the information you provide to the research staff for this study may, but does not necessarily go into the medical record that your surgeon and clinic staff use to monitor your health. Accordingly, you should be sure to report any health problems or concerns to your surgeon or nursing staff at your clinic visit. Otherwise they may not learn of any health problems that you report only to the study staff."

Sample Letter

Dear (Insert name of LABS participant),

We tried to reach you unsuccessfully during the last week. We wished to follow up with you on some of your responses to the questionnaires that were of concern to us. Your responses indicate that you *(SELECT APPROPRIATE CHOICE BASED ON SUICIDE FORM RESPONSE)* 1) have had thoughts about killing yourself, not in the last four weeks but (*INSERT ONE*: since surgery or in the last year) or 2) thought it was likely you might attempt suicide in the future. I am writing to see if you are receiving help and if not, if this is something that you would like to discuss with a mental health professional?

Please call (*insert name of LABS person here*) at (*insert phone number of LABS person here*). Also, if you would like to discuss this with one of the LABS investigators please call (*insert name of LABS investigator here*) at (*insert phone number of LABS investigator here*).

We very much appreciate your involvement in the LABS protocol and the time and energy you spend in keeping us informed about how you are doing. We appreciate your honesty in answering the questions on the forms.

Thanks much and best wishes.

Yours truly,

(*Name of person sending the letter*)

9.3 Corridor Walk Intervention Protocol

CHEST PAIN/OTHER SYMTOMS FROM TEST

Question 13 of the 400-Meter Corridor Walk (MWF) form asks if participant are having any discomfort now. If so, coordinators are instructed to ask “What type of discomfort are you having?”

Note: If the participant develops, as a result of the corridor walk, chest pain or other symptoms listed below, the clinic supervisor should be notified immediately to determine whether or not medical attention is warranted. *If the participant specifies an "other" symptom, it is up to the person administering the 400 meter walk to determine if a clinic supervisor should be notified to determine whether medical attention is needed. If uncertain, then the clinic supervisor should be notified*. A ”clinic supervisor" can be any person with medical training who has the **ability** to determine whether or not there is a need for medical attention prior to the participant leaving the research visit. “Medical attention” is defined as an intervention, prescription for physical therapy, prescription for or administration of medication, medical tests ordered, participant held for observation, etc by a trained medical professional. This includes, but not limited to, the following:

1. Chest pain, pressure and/or other "anginal symptoms".
2. Severe shortness of breath defined as greater than anticipated for the level of physical exertion during the 400-meter walk.
3. Loss of consciousness or an acute or new-onset bout of "dizziness" and/or "lightheadedness" that does not resolve with termination of the test and/or quiet sitting.
4. Persistent severe lower extremity pain that does not resolve with termination of the test.
5. Wheezing/dyspnea

Refer to Section 8 (Corridor Walk) of the LABS-2 MOP for details on eligibility, administration of the test, and stopping the test.

9.4 AUDIT and Drug Safety Intervention Protocol

Effective 2/13/2012 the AUDIT intervention protocol must be implemented if:

A participant reports either drinking 5 or more drinks on a typical day when drinking (per question 2 of the AUDIT), or having six or more drinks on one occasion at least weekly (per question 3 of the AUDIT).

2. How many drinks containing alcohol do you have on a typical day when you are drinking?

☐ 1 or 2 drinks ☐ 3 or 4 drinks ☐ 5 or 6 drinks ☐ 7 to 9 drinks ☐ 10 or more drinks

3. How often do you have six or more drinks on one occasion?

☐ Never ☐ Less than monthly ☐ Monthly ☐ Weekly (2 to 3 times/week) ☐ Daily or almost daily (4 or more times a week)

. Effective 4/30/2012 the Drug Safety intervention protocol must be implemented if:

A participant reports a positive response to any of the items to question 1 (amphetamines, hallucinogens, inhalants, cocaine/crack, pcp/angel dust) with the exception of Marijuana/hashish/pot OR a positive response to question 2 (using opiate drug intravenously).

1. In the **past 12** months, other than as prescribed by a physician, have you used any of the following?

1.2	Amphetamines (such as white crosses, speed, "meth", adderall)?	☐ 0. No	☐ 1. Yes
1.3	Hallucinogens (such as LSD, mescaline)?	☐ 0. No	☐ 1. Yes
1.4	Inhalants (such as sniffing glue)?	☐ 0. No	☐ 1. Yes
1.5	Marijuana/hashish/pot?	☐ 0. No	☐ 1. Yes
1.6	Cocaine/crack?	☐ 0. No	☐ 1. Yes
1.7	PCP/Angel dust?	☐ 0. No	☐ 1. Yes

2. In the past 12 months, other than as prescribed by a physician, have you used an opiate drug (i.e., morphine or heroin) injected by a needle?

☐ 0. No ☐ 1. Yes

AUDIT and Drug Safety Intervention Protocol

Coordinators must alert a LABS clinician within 24 hours (excluding weekends) of the research visit or receipt of the survey by mail, when a participant reports heavy drinking (via the benchmark of either 5 or more drinks per occasion OR having six or more drink on one occasion at least weekly, as assessed in questions 2 and 3 of the AUDIT, page 10 of the BF) or drug abuse (via a positive response to amphetamines, hallucinogens, inhalants, crack/cocaine or PCP OR a positive response to opiate question on page 11 of the BF form). Coordinators should provide the LABS clinician with the participant's responses to the entire AUDIT tool and illicit drug use questions with the participant's contact information. The LABS clinician must then follow-up with the participant either by phone or in-person within 7 days of notification to sensitively take a brief history of clinical diagnoses, express concern regarding the participant's pattern of use if it is problematic, and provide a list of appropriate providers (see script below). Contact with the participant (including the participant's response) should be recorded in the participant's research file by either the LABS clinician or coordinator. If contact cannot be made within 7 days, the LABS clinician or coordinator must send a registered letter to the participant from the designated LABS clinician or PI (see sample letter below). A copy of this letter should be put in the participant's research file. In addition, the coordinator must complete an OFF form indicating the participant was not contacted.

Exception:
If a participant does not report a higher level of alcohol use/abuse on questions 2 or 3 of the AUDIT than reported previously on other follow-up visits, and has been contacted previously on 2 or more occasions regarding their pattern of alcohol use/abuse or other drug abuse, and at those times indicated that they did not see this pattern as a problem and, if offered, declined referral for assessment, they do not need to be contacted again. If the AUDIT and drug abuse questions responses indicate a higher level of use/abuse of alcohol or new onset abuse of other drugs, they should be contacted again and this should be documented, as per the protocol.

Site specific issues:
The PI at each site should designate the LABS clinician(s) responsible for participant contact. The designated clinician(s) must be a member of LABS who has met the site's IRB requirements for being involved in a research study, and should be familiar with the particular question on the AUDIT tool which assesses quantity of alcohol consumed per occasion during the last 12 months (and does not include how often the participant drinks), as well as with the drug use questions on the Behavioral Follow-up (BF) form.

The coordinator, PI and designated LABS clinician at each site should discuss who is responsible for ensuring each component of the AUDIT and Drug Abuse Intervention protocol is followed (e.g. making notation of the contact in the research file, drafting and sending the certified letter).

The coordinator and PI at each site should work with their IRB/lawyers to determine whether the LABS clinician attempting participant contact should record the contact in the participant's medical file, and advise participating LABS clinicians accordingly.

Preparing for a phone call:

Please remember, you are calling about a possible health issue that came to light in the course of a research study, just like an abnormal blood pressure. The point of the call is to see how the participant feels, and if he/she is interested in help, including letting the participant know that he/she can call for references later if not interested in (or ready for) referral information at the time of the call. The following script includes talking points which are meant to avoid making the participant feel embarrassed or attacked.

Phone script:

"Hello this is Dr. ____ from the LABS study. Do you have a minute to chat?

The reason I am calling you is that your answers on the self-report form you completed during your last research visit (or on the last mailing) suggest that your use of alcohol (drugs) is at a level that can be problematic for some people. I am simply calling to see if this is a problem for you?"

Additional points to consider making:

- "My calling doesn't necessarily suggest that this is a problem; I only wished to discuss this with you briefly to see if this might be an issue for you."
- "People's use of alcohol (drugs) varies widely."
- "We appreciate your answering these questions honestly and don't mean to infer that this is necessarily a problem."
- "Thanks much for discussing this with me and for your participation in the LABS project. We very much appreciate your ongoing participation and your willingness to answer these questions."
- If participant indicates a problem: "Could I offer you some information about possible resources in this area that might be helpful for you?"
- If participant notes that they thought their information was confidential/de-identified and is upset that they were called, please gently remind them that their informed consent document stated that researchers can take steps to prevent serious harm to you (for more details-exact language from informed consent document is below).

Informed consent language:
"Please note that even with the Certificate of Confidentiality, investigators are able to take steps to prevent serious harm to you or others. For example, if the study staff learns of possible suicidal tendencies or other risk of harm to yourself or others, we are required to notify the proper medical providers or legal authorities. However, the information you provide to the research staff for this study may, but does not necessarily go into the medical record that your surgeon and clinic staff use to monitor your health. Accordingly, you should be sure to report

any health problems or concerns to your surgeon or nursing staff at your clinic visit. Otherwise they may not learn of any health problems that you report only to the study staff."

Sample Letter

Dear (Insert name of LABS participant),

We tried to reach you unsuccessfully during the last week. We wished to follow up with you on some of your responses to the questionnaires that were of concern to us.

Please call (insert name of LABS person here) at (insert phone number of LABS person here). Also, if you would like to discuss this with one of the LABS investigators please call (insert name of LABS investigator here) at (insert phone number of LABS investigator here).

Thanks very much and best wishes.

Yours truly,

(Name of person sending the letter)

9.5.. ADVERSE EVENTS

Adverse Events (AE)

The safety committee has identified six LABS-2 event categories for potential adverse events. The study event categories include the 400 meter corridor walk, the Stepwatch Activity Monitor, Environmental related events, blood draw related events, physical measures related events, and other events (which include breach of confidentiality).

An adverse event must be considered to be associated with the research category if there is a reasonable possibility that the event may have been caused by the research intervention (i.e., a causal relationship between the event and the research intervention cannot be ruled out by the investigator(s)). Only adverse events that arise from, or occur during, a LABS-2 research-related event are reportable

NOTE:
If the adverse event is determined to be a Serious Adverse Event (as defined on page 2 of the AE form) in addition to the AE form, complete a mandatory SAE and fax it to the Coordinating Center at the University of Pittsburgh within 24 of the knowledge of the event. Follow the detailed instructions in the SAE QxQ's.

All Adverse Events must be entered into the LABS MATRIX database.

Serious Adverse Events (SAE)

An adverse event will be deemed a Serious Adverse Event (SAE) if it is fatal or life-threatening; requires or prolongs hospitalization; produces a disability; or results in a congenital anomaly/birth defect. If an Adverse Event is determined to be a SAE, The LABS-2 Serious Adverse Event (SAE) must be completed and **faxed** to the DCC within 24 hours of site notification of the event.

The DCC will transmit copies of the form to the Safety Committee chair, the chair of the DSMB and to the NIDDK project officer within 72 hours. The clinical center and the DCC PIs are responsible for notifying their local IRBs. Note that the SAE form will not be entered into the LABS database.

10.1. Certification process for surgeons:

1) Read the LABS-2 Manual of Operations (MOP) completely.

2) Review the **LABS-2 Surgeon's Training Outline** with a surgeon who is already LABS certified from your site. This review should address the following items:

study design (objectives, criteria for LABS-2 visit schedule, target composition of database population, inclusion/exclusion criteria)

- LABS bariatric surgeon qualifications
- surgeon's requirements for participation in LABS
- LABS bariatric operation definitions (primary operations, second stage: conversions/revisions/reversals of bariatric operations, exclusions)
- Operative forms and related Question by Question (QxQ's)

3) Review the **LABS-2 Surgeon's Certification Review** PowerPoint presentation.

Note: the LABS-2 surgeons training outline and the LABS-2 surgeon's certification review PowerPoint presentation.

4) Submit a help desk request via LABS website to request access to the Surgeon's Certification Module for LABS-2. *A training call with a surgeon trainer (is not mandatory for surgeon protocol certification, but is available upon request.*

After the module is completed successfully, surgeons will be able to use his/her certification number (received when certified for LABS-1) on associated LABS-2 forms. As in LABS-1, this number is to be recorded on all forms completed by the certified individual.

10.2. Surgeon's Training Outline

I. Study Design:

- Primary Objective: To describe surgical risks and changes in clinical, metabolic, and psychosocial measures among patients undergoing bariatric surgery. To determine the associations of clinical and demographic patient characteristics, components of the surgical procedure, and peri-operative and post-operative care with post-operative risks and changes in clinical, metabolic and psychosocial measures.
- Secondary Objective: To assess health care utilization of patients undergoing bariatric surgery for treatment of obesity and related co-morbidities. To obtain and store biospecimens (serum, plasma, whole blood) for research related to the aims of this study, and for future research into the pathophysiology and genetics of obesity and obesity-related complications.
- Criteria for LABS-2: Inclusion - age 18 or older, previous enrollment in LABS-1, Selected by algorithm to be included in LABS-2. Exclusion – informed consent not obtained, prior bariatric surgery, unlikely to comply with follow-up protocol, unable to communicate with local study staff.
- Visit schedule: data collected prior to the operation, at time of the operation, and after the operation for up to 3 years.
- Target composition of database population: 2,400 patients in 3 years.
- Selection and enrollment of patients: At those sites that a sampling plan is required, the process will begin after a patient has been enrolled in LABS-1. The study coordinator will be notified by the DCC if a patient should be approached for LABS-2. Once a candidate has been identified, study details will be discussed and if the candidate consents to participate, he or she will be enrolled into the study.
- Regulatory consideration: Site audits will be performed to assure that all study processes are in place and being adhered to. The DCC will perform statistical analyses and prepare materials for monitoring study progress and protocol adherence.

II. LABS Bariatric surgeon qualifications:

1. Medical Degree (M.D. or D.O.)
2. General Surgery Residency training
3. Board Certification or F.A.C.S. or C.A.G.S.
4. Bariatric experience (experience may include Fellowship/Residency Training)
   a. Primary surgeon (includes operations plus peri-operative care) of 25 or more cases:
      i. Vertical Banded Gastroplasty
      ii. Adjustable Gastric Band
      iii. Gastric Bypass
      iv. Biliopancreatic Diversion plus Biliopancreatic Diversion with Duodenal Switch
   b. Approval is procedure specific – each surgeon must qualify for each operative procedure separately by demonstrating minimal experience with each procedure.
5. Approved by PI or senior surgeon at respective participating site.

III. Surgeon's requirements for participation in LABS:

1. Willingness to follow LABS protocols.
2. Willingness to enter all cases into LABS-1.

3. Willingness to complete and submit all required data on each patient.
4. Willingness to exclude patients from intervention studies or other studies which conflict with or overlap the major aims of LABS.
5. Agree to site visits by LABS monitoring team.
6. Agree to P & P policy regarding use of data for publication or presentation.
7. Listed in grant or approved by executive committee.
8. Meets the LABS-Bariatric Surgeons Qualifications Minimum Standards.
9. LABS certified (by DCC) in both LABS-1 and LABS-2
10. Completion of Surgeons Experience Form.

IV. LABS Bariatric operation definitions

1. Primary Operations
   a. Vertical Banded Gastroplasty
   b. Adjustable Gastric Banding
   c. Gastric bypass and variants
      i. R-Y short
      ii. R-Y long
      iii. Banded
      iv. Distal
   d. Biliopancreatic Diversion
   e. Bilopancreatic Diversion + Duodenal Switch
   f. Sleeve Gastrectomy
   g. Banded Gastric Bypass (GB + Non-Adjustable Band)

2. Exclusions
   a. Investigational procedures
   b. Non-standard procedures (omenectomy, gastric bypass with adjustable band)
   c. Gastric pacing, endoluminal weight loss procedures
   d. Non-bariatric surgeries (ventral hernia, decubitus ulcers, cholecystectomy, cosmetic surgery)
   e. Conversions, Revisions and Reversals of bariatric operations

V. Surgical forms

1. Pre-operative Surgeon's Medical Assessment form – to be completed by the surgeon, or other LABS-2 certified personnel with a medical background, prior to the bariatric procedure.
2. Surgeon's Questionnaire – to be completed immediately after the bariatric procedure for all participants.
3. Surgery Specific Form –to be completed immediately after the bariatric procedure for participants who undergo that bariatric procedure. Surgery specific forms include: Roux-en-Y gastric bypass, Adjustable Gastric Band, Biliopancreatic Diversion, Biliopancreatic Diversion w/Duodenal Switch, Gastric Sleeve, Vertical Banded Gastroplasty.
4. Post-operative Surgeon's Medical Assessment form – to be completed by the surgeon, or other LABS-2 certified personnel with medical background, after the bariatric procedure at the 12-month and annual follow-up time points.

LABS-2 will incorporate Operations Memo when study processes are either introduced or updated.

All operations memos will be numbered and should be kept for future reference. All memos should be placed in this section of the Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #1

DATE: April 18, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Status and Scheduling the LABS-2 Baseline Visit

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Data entry personnel.** Please distribute this memo to the appropriate personnel at your site.

The form completion instructions (QxQs) have been modified to clarify study procedures. Details regarding each change are provided in this Operations Memo. The revised QxQs are available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/FormsandQxQs/HealthCareUTracking/.

The revised Pre-operative Form QxQs are available in the manual of operations folder under LABS-1 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-1/ManualofOperation/Version3/.

Please replace the pages in your MOP with the updated pages.

I. Issues related to LABS-2 status and scheduling the LABS-2 baseline visit:

ISSUE: LABS-2 protocol initiation requires that eligible patients whose surgery is scheduled more than 30 days from the initiation date should be approached regarding LABS-2. In some cases, the advance notice of a scheduled surgery date does not provide enough time to complete the baseline requirements prior to surgery and the patient is not approached.

SOLUTION: If research personnel are informed of a scheduled surgery date ***fewer than 14 days prior to surgery***, the patient need not be approached regarding LABS-2. Research personnel may still approach these patients. If a patient is approached regarding LABS-2, then the LABS-2 Enrollment form must be completed indicating consent status. If the patient is **not** approached, Question 9 'Is this patient a good candidate for LABS-2?' on the LABS-1 Pre-Operative Evaluation Form (PO1) should be marked as NO and Other,specify should be selected with the specify text recorded as "< 14 days notice of surgery".

If research personnel are informed of a scheduled surgery date ***at least 14 days prior to surgery***, then the patient must be approached regarding LABS-2 and the LABS-2 Enrollment form must be completed indicating consent status.

ISSUE: Patients who are approached for LABS-2 but do not consent because they are unable or unavailable to attend the baseline research visit (e.g., cannot take time off from work, do not have any available days prior to the surgery, etc.).

SOLUTION: The LABS-2 Enrollment form (EF) should be completed for these patients indicating that consent was not obtained. Other, specify should be marked as the reason in Question 1.1 with the specify text recorded as "Unable to schedule baseline visit".

ISSUE: Patients who are selected for LABS-2 and the Call Protocol is exhausted in an attempt to approach these patients for LABS-2 consent.

SOLUTION: The LABS-2 Enrollment form (EF) should be completed for these patients indicating that consent was not obtained. Other, specify should be marked as the reason in Question 1.1 with the specify text recorded as "Unable to contact prior to surgery".

ISSUE: Patients who consent to participate in LABS-2 but are unable or unavailable to attend a baseline research visit once their surgery is scheduled. This includes patients who could not be reached per the Call Protocol.

SOLUTION: The LABS-2 Inactivation Form (IN2) should be completed for these patients.

If research personnel were informed of the scheduled surgery date ***at least 14 days prior to the surgery***, then Other, specify should be marked for Question 2. 'Reason for Inactivation' with the specify text recorded as "Unable to schedule baseline visit".

If research personnel were informed of the scheduled surgery date ***fewer than 14 days prior to the surgery and no attempt was made by research personnel to schedule a baseline visit***, then Other, specify should be marked for Question 2. 'Reason for Inactivation' with the specify text recorded as "< 14 days notice of surgery". ***If research personnel did attempt to schedule the baseline visit***, then the specify text should be recorded as "Unable to schedule baseline visit".

In both cases, the patient will revert to the LABS-1 protocol and the relevant LABS-1 forms should be completed and entered into the research database. If the patient fails to proceed to surgery after being inactivated from LABS-2, then the LABS-1 Inactivation Form should be completed.

II. Form Modifications

The next version of the forms referenced above (PO1, EF, IN2) will include the specific items/reasons for these scenarios (checkboxes). Until the new versions are available, the Other, specify item should be used. The exact text noted above should be recorded and entered to permit the DCC to monitor the number of patients who fall into these categories.

LABS-2

OPERATIONS MEMO #2

DATE: April 19, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Eligibility, StepWatch™ Requirements, Incomplete Self-Assessment Items.

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Data entry personnel.** Please distribute this memo to the appropriate personnel at your site.

The form completion instructions (QxQs) have been modified to clarify study procedures. Details regarding each change are provided in this Operations Memo. The revised Enrollment Form QxQs are available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/FormsandQxQs/HealthCareUTracking/

The revised StepWatch QxQs are available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/FormsandQxQs/CorridorStepwatch/

Please replace the pages in your MOP with the updated pages.

I. LABS-2 Eligibility.

A. Blood Draw Requirements.

ISSUE: Clarification of Blood Draw consent and consent without a Blood Draw.

SOLUTION: Blood draw consent is required for participation in LABS-2; however, if a patient consents to the blood draw, but cannot give blood or blood cannot be drawn, the patient is still eligible for LABS-2.

B. Patient refusal of specific baseline assessments or patient inability to participate in specific baseline assessments.

ISSUE: A patient either refuses or is unable to participate in one or more of the baseline assessments. Does this impact the patient's LABS-2 eligibility?

SOLUTION: A patient may opt out of any of the LABS-2 assessments and still be eligible for LABS-2. Eligibility requires informed LABS-2 consent as well as LABS-2 blood draw consent.

II. StepWatch™ Acitivity Monitor (SAM) Minimum Requirements.

ISSUE: There is insufficient time for the patient to wear the SAM for a full 7 days prior to surgery.

SOLUTION: The SAM should be given to the patient if it can be worn for at least three days, not including the day of surgery. The three qualifying days can include the day of the LABS 2 baseline visit as long as the SAM is put on in time for the patient to wear it for at least 10 hours that day. If the SAM can not be worn for at least three days before surgery, the SAM should not be given to the patient. However, the patient can still participate in LABS 2.

III. Incomplete Self-Assessment Questions

ISSUE: Items on a self-assessment form are not answered (left blank) and the coordinator is not able to obtain an answer from the patient.

SOLUTION: The missing code of -5 (not done) should be recorded and entered when the patient leaves a required item/question blank and this was not identified until the patient was no longer available. This does **not** pertain if the patient refuses to answer an item or if the patient indicates that he/she does not know the answer to an item. For those cases, -4 (refused) and -3 (unknown) should be used, respectively.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #3

DATE: June 27, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Corridor Walk and StepWatch MOPs.

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Data collection personnel.** Please distribute this memo to the appropriate personnel at your site.

The LABS-2 Measurement and Form Completion Instructions (QxQs) have been modified to clarify study procedures. A summary of these modifications are provided in this Operations Memo. LABS personnel should review these revised sections.

- The revised Measurement instructions for the StepWatch Monitor (Section 7, version 3, 6/27/2006) and the Corridor Walk (Section 8, version 2 6/19/2006) are available in the Manual of Operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/ProtocolsandMeasurements/
- The revised QxQs are available in the Manual of Operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/FormsandQxQs/CorridorStepwatch/

Please replace these sections in your Manual of Operations (MOP).

Corridor Walk MOP Modifications:

2.1 Stopwatch: This section was reworded to improve clarity.

3.1 Course Preparation: You are now instructed to use bright orange cones to clearly mark the turn around points at 1 and 19 meters if you cannot leave tape on the ground or participants seem to have trouble identifying the points on the course where they should turn. In addition, sites are required to place a chair large enough to accommodate LABS participants near the start of the course.

4.4 ECG: The last of the exclusion criteria was replaced with: “Abnormal cardiogram indicative of ischemia without medical/cardiac clearance for surgery.”

5.1 Explain the Test: This entire section was updated. In particular, the directions now state to walk the participant to a chair at the start of the walk and have him/her sit while you explain the walk. We also added Polar Heart Rate Monitor tips and a script for warning participants that an alarm may sound should their heart rate go above 135.

5.2 Test: This section was updated to reflect the decision that the starting heart rate must be taken while the participant is sitting and after the participant has had a chance to rest while you explain the corridor

walk. Additional directions have been included to better explain how to simultaneously time the walk and a two minute recovery period while accurately recording the starting, ending, average walk, and recovery heart rates. If you are having problems with these procedures, please contact the DCC.

6.1 Examiner initiated stop. The first sentence has been corrected by replacing "blood pressure" with "heart rate" and directions for how to monitor blood pressure during the walk if a participant cannot wear the Polar Heart Rate Monitor were added.

StepWatch Activity Monitor (SAM) MOP Modifications:

Directions for cleaning the monitor and strap:

- The SAM is designed for multi-participant use. It should be cleaned by wiping it with a germicidal wipe between each use. The PDI Super Sani-Cloth is recommended. Do not use any other solvents. Do not autoclave. The docking station is NOT waterproof; to clean it, wipe with a soft cloth moistened with mild soap and water.
- The straps provided with the monitor should also be cleaned between each use by first washing it with an antibacterial hand soap (such as a surgical scrub) and then dipping it in alcohol. Allow it to drip dry.
- In highly infectious situations (i.e. a patient reports he had poison ivy or ring worm near his ankle while wearing the SAM) discard the strap.

Additions to "Get Personal:"

- Let the participant know that he or she may wear the SAM 24 hours a day, including in the shower or pool (but not in a very hot bath or hot tub). Then show the participant two examples of activity reports. The first report should have 7 valid days of activity. The second report should have a couple days with greater than 10 hours of wear, a couple days with less than 10 hours of wear, and a couple days of no wear. Explain that we are unable to use several days of data from the second activity report because the SAM was not worn for much of the day.

Filtering Participant Files:

- The MOP now states to print the activity report BEFORE filtering data. Please read the following sections: "Viewing Your Data and Printing the Participant Report" and "Determining adequate wear of the SAM."
    - The reason for this change is that some participants have returned the SAM with very few (even zero) "valid" days (days in which the SAM was worn for at least 10 hours), and we do not want to discourage them by sending a blank activity report after they made an effort to wear the SAM. Please note, we still consider this a serious problem and all participants with fewer than 4 valid days should be asked to re-do the SAM.

Participant Files:

- Your Client Files folder or directory exists within your StepWatch Library. You should save your StepWatch data files to the main Client Files folder. StepWatch data files should only be downloaded to the one computer your site designated for SAM download (the DCC installed the necessary file transfer software on that computer).
- If you are downloading a re-do: The file should be named as the participant's ID followed by an underscore and then the time period (example: 2550001DR_12). The unattended file transfer (DataStream) will rename the file with a datestamp prior to transfer and will place the file in the Archive folder. The original file, therefore, will also be maintained in the Archive directory. Please contact Deb Martin with any questions related to this process (martind@edc.pitt.edu).

Sending Files to the DCC:

- After data files are filtered and saved to the Client folder in the SAM library they will need to be transmitted to the DCC. StepWatch data files should only be downloaded to the one computer your site designated for SAM download (the DCC installed the necessary file transfer software on

that computer). Unattended transfer of these files (DataStream) will occur once a day at 12:00 PM as long as the computer is on at that time. The DataStream process will rename all files in the Client Files folder by adding a date stamp to the file name, transfer them to the DCC and move them to the Archive folder that is in the Client Files folder of the SAM computer. Please contact Deb Martin with any questions related to this process (martind@edc.pitt.edu).

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #4

DATE: June 29, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Section 19: Guidelines on Administering the Self-Assessment Forms

*This memo should be placed in the **LABS-2** Manual of Operations, as Section 19. All Operations Memos may be printed from the LABS website. If you cannot locate a specific Operations Memo, please contact the LABS Data Coordinating Center.*

This memo addresses issues for the **Coordinators/Data collection personnel.** Please distribute this memo to the appropriate personnel at your site.

Study procedures related to the self assessment forms have been clarified to ensure consistency across all sites. The information provided in this Operations Memo has been added to the LABS-2 Manual of Operations as Section 19. The new section is available in the manual of operations folder under LABS-2 in the researchers section of the LABS website. http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/ProtocolsandMeasurements/LABS-2%20MOP%20Section%2019%20-%20Self%20Assessment.pdf

Please add this section to your LABS-2 Manual of Operations.

I. Before providing participants with self-assessment forms:

Coordinators should prepare self-assessment forms completely prior to providing them to the participant.

Recording the participant ID and visit: The participant ID must be entered in black or blue pen on each page of all of the self assessment forms in the participant ID fields printed on the forms. This should be done prior to providing the forms to the participants. The reason the ID should be written on every page is to avoid lost data in the case that a page becomes detached from the self assessment packet. The type of visit (baseline, 6 months, 12 months, 24 months, or 36 months) must also be recorded on each page. Note that forms only administered at baseline have visit numbers printed so there is no need to enter the visit on those forms. Note if forms are printed duplex, ID and type of visit is only required on the front page.

Form completion date should NOT be recorded at this time. The participant should be instructed to enter the date when the form was completed.

Form order: The LABS-2 self-assessment baseline measures are composed of 14 forms that have been carefully designed to measure certain characteristics of the LABS-2 participants. Prior to providing the participants with the self-assessment packet, the forms should be ordered based on the order in appendix A of this document. Note that the Beck Depression Inventory (BDI) must be completed while the participant is in the clinic and can not be sent to the participant prior/after a scheduled visit.

Instructions to give the participant prior to providing the self assessment forms:
In most cases, self assessment forms will be described to potential LABS-2 participants during the LABS-2 consent process. At some point in time, prior to providing the participant with the self-assessment forms, give at least the following verbal instructions.

> *When completing the self assessment forms, please enter the date when you complete each individual form. Please follow the order of the forms. Responses to each item should be recorded before moving on to the next item. In most cases, recording the response involves simply making a clear mark in the appropriate space on the form. Always record a response, and only one response, for each item unless otherwise instructed. Please make certain that the mark you make stays entirely within the space intended for it. Also, it is important to refrain from making notes in the margins or elsewhere on the forms unless necessary or required. Some of the forms include instructions to skip items, depending on how you answer a particular item. For example, a question may say, if you answered "yes" go to the next question, if you answered "no" skip the next question. Please follow these instructions.*
>
> *Please enter a response to all of the items, If you do not want to respond to a particular item, please draw a line through that item so that I know you saw the item and did not want to answer, rather than that you missed the item. Remember that any information that you provide will be kept strictly confidential.*

II. Updating self-assessment forms after they are returned:

If the participant returns their self-assessment forms prior to or during a clinic visit:
After you receive the self assessment forms, it is important that you go through all of the questionnaires in their entirety to check for missing data. The participant should be asked to answer a missed question in reference to when the form was initially completed, or to clarify that he or she does not want to answer the question. Also, check for adherence to skip patterns. Determine whether the skip pattern was incorrectly followed, or if the root question was answered incorrectly. **This process is required ONLY if the participant is present.** Any missing, but not refused, items discovered after the participant leaves should be entered as "not done." If a participant draws a line through an item (as per the instructions above), that item should be entered as "refused".

If the participant returns self-assessment forms after the clinical visit:
Go through the questionnaires page by page to check for missing data. Any missing items discovered should be marked "not done" (-5). Do NOT attempt to contact the participant to update these items. Also, check for skip patterns that were not followed by the participant. If a participant provides information for items that should have been skipped, the following process should be followed. If the responses to the primary and nested questions contradict each other the primary question should be entered as "not done" because we will not be able to distinguish whether the primary question or the nested items are correct. During data entry, when the

primary question is entered as “not done.” MATRIX will automatically assign “not applicable” values to the nested items. For both sets of questions, the data entry specialist must record a note of the values entered into the database, directly beside participant’s marks. However, if the primary question and nested questions are in agreement (i.e. the primary question is marked “no” for prior surgeries and all nested questions are also marked “no,”) the primary question should remain as is and the nested questions should be crossed out with a single line and initialed and dated by the coordinator.

Appendix A:

Baseline:

Order	Short Name	Long Name
A	DIB	Demographic Information Baseline
B	BB	Behavior Baseline
C	BDI	Beck Depression Inventory *this form must be completed at the clinical visit. Do not include this form if the self-assessment forms are provided prior to the visit.
D	ISEL	Interpersonal Support Evaluation List
E	SF-36	Short-Form 36 questions
F	WPAI	Work Productivity and Activity Impairment
G	PETSB	Psychiatric and Emotional Test Survey Baseline
H	IW	Impact of Weight Questionnaire
I	GSRS	Gastrointestinal Symptoms Rating Scale
J	UIB	Urinary Incontinence Baseline
K	BS	Berlin Sleep
L	SFB	Sexual Functioning Baseline
M	RHB	Reproductive Health Baseline
N	MAB	Medical Assessment Baseline
O	MED	Medications

Annual Follow-up:

Order	Short Name	Long Name
A	DIF	Demographic Information Follow-up
B	BF	Behavior Follow-up
C	BDI	Beck Depression Inventory *this form must be completed at the clinical visit. Do not include this form if the self-assessment forms are provided prior to the visit.
D	ISEL	Interpersonal Support Evaluation List
E	SF-36	Short-Form 36 questions
F	WPAI	Work Productivity and Activity Impairment
G	PETSF	Psychiatric and Emotional Test Survey Follow-up
H	IW	Impact of Weight Questionnaire
I	GSRS	Gastrointestinal Symptoms Rating Scale
J	UIB	Urinary Incontinence Follow-up
K	BS	Berlin Sleep
L	SFB	Sexual Functioning Follow-up
M	RHB	Reproductive Health Follow-up
N	MAF	Medical Assessment Follow-up
O	MED	Medications

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #5

DATE: September 7, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Forearm Blood Pressure

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

Section 5 of the LABS-2 Manual of Operations, The Physical Measurement Protocol, has been modified to clarify study procedures. Details regarding each change are provided in this Operations Memo. The revised Protocol is available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/ProtocolsandMeasurements/.

Please replace the pages in your MOP with the updated pages.

ISSUE: It may not be possible to take an upper arm blood pressure on some LABS-2 patients due to arm circumference, so a forearm blood pressure is taken. However, a forearm blood pressure measurement overestimates the values of upper arm blood pressure measurement (Pierin 2004).

SOLUTION: If the patient's arm circumference is between 32-44 cm, a forearm blood pressure is acceptable if calculated using the following equation (Pierin 2004):

systolic pressure = 33.2 + (0.68 x forearm systolic pressure)
diastolic pressure = 25.2 + (0.59 x forearm diastolic pressure)

The patient's arm circumference and equation must be written on the paper LABS collection form if using this method. The re-calculated blood pressure is acceptable for both the Research Coordinators Assessment Form (RCAB, RCAF) and the 400 Meter Corridor Walk Eligibility form (WEF).

If the patient does not meet the arm circumference criterion (32-44cm), the forearm measurement is not acceptable and blood pressure must be recorded as -5 (not done).

REFERENCES

Pierin, A. M.G., Alavarce, D. C., Gusmao, J. L., Halpern, A. & Mion, D. Jr. Blood pressure measurement in obese patients: comparison between upper arm and forearm measurements. *Blood Pressure Monitoring* 2004; 9(3):101-105.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #6

DATE: September 7, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 surgeries

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **PIs/Surgeons/Coordinators/Data collection personnel.** Please distribute this memo to the appropriate personnel at your site.

Section 10 of the LABS-2 MOP has been updated to clarify study procedures. Details regarding each option are provided in this Operations Memo. The revised Section 10 of the LABS-2 MOP is available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/ManualofOperation/ProtocolsandMeasurements/ The revised training materials are available in the Training folder in the researchers section of the LABS website: http://www.edc.gsph.pitt.edu/labs/Research/training_labs2.html

Please replace the pages in your MOP with the updated pages.

LABS-2 definition of Bariatric Surgery:

ISSUE: Clarification of LABS Bariatric operations.

SOLUTION: Section IV.2.b. will be revised to read as follows:

IV. LABS Bariatric operation definitions
1. Primary Operations
   a. Vertical Banded Gastroplasty
   b. Adjustable Gastric Banding
   c. Gastric bypass and variants
      i. R-Y short
      ii. R-Y long
      iii. Banded
      iv. Distal
   d. Biliopancreatic Diversion
   e. Bilopancreatic Diversion + Duodenal Switch
   f. Sleeve Gastrectomy
   g. Banded Gastric Bypass (GB + Non-Adjustable Band)

2. Exclusions
   a. Investigational procedures
   b. Non-standard procedures (omenectomy, gastric bypass with adjudstable band)
   c. Gastric pacing, endoluminal weight loss procedures
   d. Non-bariatric surgeries (ventral hernia, decubitus ulcers, cholecystectomy, cosmetic surgery)
   e. Conversions, Revisions and Reversals of bariatric operations

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #7

DATE: October 24, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Form completion for LABS-2 Cancelled Surgeries; Revisions and Reversals; 2-Stage Procedures

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Surgeons/Data collection personnel.** Please distribute this memo to the appropriate personnel at your site.

All LABS-2 Operations Memos are available under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Please add this op memo to the site Manual of Operations (MOP).

I. LABS-2 Cancelled Surgery (after anesthesia induction).

Complete: Surgeon's Questionnaire
Discharge Summary
LABS-2 30-Day Post Operative Evaluation Form

* *Research visits beyond the 30-day follow-up will not be required for a cancelled surgery, therefore, the **6-month** and **annual follow-up visits** do not apply to the cancelled surgery.*

If participant is rescheduled, check the original Baseline Packet.

Baseline Packet: if completed ≤ 30 days of rescheduled surgery date, it is acceptable.
if completed between 30 and 90 days of rescheduled surgery date, complete the Baseline Update Packet within 30 days of rescheduled surgery date.
if completed >90 days of rescheduled surgery date, re-administer the entire Baseline Packet within 30 days of rescheduled surgery date.

* *Note: An additional LABS-2 blood draw will not be required.*

If the rescheduled surgery is completed,

Complete:
- Surgeon's Questionnaire
- Procedure-specific Form
- Discharge Summary
- LABS-2 30-Day Post Operative Evaluation Form
- 6-month Follow-Up (based on rescheduled surgery date)
- Annual Follow-Up (based on rescheduled surgery date)

* *Note: An additional LABS-2 blood draw will not be required.*

II. LABS-2 Revisions and Reversals.

COMPLETE:
- LABS-2 Pre-Operative Update Form (≤ 30 days of revision/reversal surgery date)
- Surgeon's Questionnaire
- Subsequent Bariatric Procedure Form
- Discharge Summary
- LABS-2 30-Day Post Operative Evaluation Form

* *The LABS-2* ***follow-up visits*** *will continue to be based on the primary surgery date (original surgery).*

III. LABS-2 Two Stage Procedure.

COMPLETE:
- LABS-2 Pre-Operative Update Form (≤ 30 days of 2nd stage surgery date)
- Surgeon's Questionnaire
- Procedure-specific Form
- Subsequent Bariatric Procedure Form
- Discharge Summary
- LABS-2 30-Day Post Operative Evaluation Form

* *The LABS-2* ***follow-up visits*** *will continue to be based on the primary surgery date (1st stage).*

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #8

DATE: November 17, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Physical Measures, Section 5 of the MOP

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

Section 5.1.5 of the LABS-2 MOP, Body Composition, has been modified to clarify study procedures. Details regarding each change are provided in this Operations Memo. The revised version is available in the manual of operations folder under LABS-2 in the researchers section of the LABS website http://www.edc.gsph.pitt.edu/LABS/research/Documents/LABS-2/ManualofOperation/ProtocolsandMeasurements/.

Please replace the pages in your MOP with the updated pages. Please note that only the current version of the LABS-2 MOP will reflect these changes.

I. BODY FAT PERCENTAGE REPORTED BY TANITA SCALE

ISSUE: Body fat % reported by the Tanita scale is below expected value. What steps should be taken to confirm the value reported?

SOLUTION: To ensure that a correct body fat % value has been obtained, the protocol for the Tanita scale should be followed. If the value is below the baseline or follow-up cut point (see below), the body fat % measurement must be repeated. The repeat measurement value should be recorded on the appropriate LABS-2 form regardless of whether it is the same or different from the original measurement. Copies of both measurement printouts should be placed in the research chart (indicate on each printout which is the original and which is the repeat).

For all LABS-2 primary bariatric surgeries, a body fat % of **less than 40%** must be repeated. The repeat measurement should be recorded on the LABS-2 form.

For all LABS-2 subsequent surgeries, revisions or reversals and follow-up appointments, a body fat % of **less than 25%** must be repeated. The repeat measurement should be recorded on the LABS-2 form.

When repeating the body fat measurement:

1) check to make sure that the soles of the feet are free of excess dirt, as this may act as a barrier to the electric current.
2) If there are calluses on the soles of the feet, place 0.5cc of saline or water in the center of each electrode. This will act as conductive material and may allow the current to pass freely through a thin barrier.

3) If it appears that the skin of a participant's inner thighs are touching, a thin piece of cardboard or towel should be placed between the participant's thighs. Tanita customer service has indicated that the electrical current that measures body fat % flows up one leg, across the trunk and back down the opposite leg. It is possible that the electrical current may not complete its full path if inner thighs are not separated.
4) Make sure that heels are placed directly on top of the posterior electrodes, while the front part of the foot is in contact with the anterior electrodes.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #9

DATE: November 21, 2006

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 MOP updates

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The form completion instructions (QxQs) for the Pathology Form, Research Coordinators Assessment Baseline Form and Medication Form will be updated in the newest version of the QxQs, which are forthcoming. Details regarding each change are provided in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Please replace the pages in your MOP with the updated pages. Please note that only Version 5 of the LABS-2 MOP will reflect these changes.

Pathology Form

I. LIVER BIOPSIES

ISSUE: A liver biopsy was taken, but the surgery was cancelled. Should the sample still be sent to the pathologist?
SOLUTION: Yes. The liver biopsy slides should still be sent to the pathologist, even if the surgery was cancelled.

Research Coordinators Assessment Baseline Form

II. LVEF%

ISSUE: A range of values were found for LVEF%. What value should be used?
SOLUTION: The midpoint of the values should be recorded and entered into MATRIX.

III. SAO_2%

ISSUE: There are multiple values from the Pulseoximeter test. What value should be used?
SOLUTION: The *average* value on *room air* should be recorded and entered into MATRIX.

Medication Form

IV. MEDICATION STOPPED IN PREPARATION FOR SURGERY

ISSUE: A participant has been ordered by their doctor to discontinue their medications in preparation for surgery. How should this be captured on the medication form?
SOLUTION: Q1, Q2 and Q6 of the Medication Form ask about medication use in the past 90 days. Any discontinued medications should be captured using the frequency 'no longer taking'.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #10

DATE: January 24, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 MOP updates – 6 Month Visit Protocol

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The form completion instructions (QxQs) for the 6 Month Follow-Up Form (F06), Health Care Utilization (HC), SF-36, Medication Form, and Beck Depression Inventory (BDI) as well as guidelines for the laboratory assays will be updated in the newest version of the QxQs, which are forthcoming. Details regarding each clarification are provided in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Please replace the pages in your MOP with the updated pages when those updates are made available. Please note that only Version 5 of the LABS-2 MOP will reflect these changes.

6 Month Interview Phone Option

ISSUE: Every attempt was made to have a participant present for their 6 month Follow-Up visit, but it is not possible. Are there any other options?

SOLUTION: Yes. The participant may still be included in the study if the components of the 6 Month visit are administered as outlined in this Operations Memo. **Please note that an in person visit that is outside the protocol adherence window (+/- 30 days) but within the maximum window (+/- 90 days) is preferred to collection of the 6-month visit data via phone/mail within the protocol adherence window (+/- 30 day).**

A process to capture how a visit was completed (in-person vs. telephone) is pending. In the interim, please record how the interview was administered in the participant's study file.

I. 6 Month Follow-Up Form (FO6)

A. The FO6 may be administered over the telephone. The telephone interview must be with the participant (not a representative) and must be within the 6 month window as defined in the protocol.

B. Q4 Weight. A self-reported weight is acceptable as long as the participant's weight was obtained from a scale. Ideally, the participant will weigh themselves the day of the telephone interview and report that weight. Other acceptable options are weights obtained via a professional service such as Jenny Craig, Weight Watchers, a Nutritionist or PCP. The date the participant was weighed by any of the above should be recorded on the FO6. *For ALL self-reported weights, 4.2 (How was Weight Measured?) must always be recorded as **4. Estimate**.*

The following script may be used to obtain weight over the phone.

Coordinator: *Do you have access to a scale in your home right now?*

If yes, ask the participant to weigh themselves and record the weight.
If no, see below.

Coordinator: *Have you been weighed recently by a professional such as your Primary Care Physician, nutritionist or a weight control group like Jenny Craig or Weight Watchers?*
If yes, record the weight and the date that the weight was taken.
If no, enter -5 as the value for weight.

II. Health Care Utilization Form (HC)

A. The HC Form should be administered over the telephone if information obtained from the participant for the FO6 indicates hospitalization or outpatient procedures since the last visit. This form must be completed within the 6 month window as defined in the protocol.

III. SF-36 Form

A. The SF-36 may be administered over the telephone or sent home to be completed by the participant and then mailed back. The SF-36 must be completed within the 6 month window as defined in the protocol.

IV. Medication Form

A. The Medication Form may be administered over the telephone or sent home to be completed by the participant and then mailed back. The medication form must be completed within the 6 month window as defined in the protocol.

B. Medications Verified by Container. If the participant spells out the name of the medication directly from the bottle while on the phone, then verified by container may be checked as yes.

V. Beck Depression Inventory (BDI)

A. The BDI may be administered over the telephone within the 6 month window as defined in the protocol. The BDI **CANNOT** be mailed to the participant for completion.

B. The following protocol MUST be followed:

Sites that administer the Beck Depression Inventory (BDI) via telephone must follow the following guidelines for participant safety.

- The interviewer must have on hand prior to the scheduled phone contact, the physical address (No PO Box #) of where the participant will be during the interview.
- The Interviewer at each site must have the pager number of an on call MD (affiliated with the Site but not necessarily the PI) in case the need would arise to have the MD speak with the participant.
- There must be at least one other research personnel on staff at the time of the interview who is aware that this interview is taking place and also has the information listed above. (for example: additional RA, PI or even secretarial staff)

If during the administration of the BDI, it would be clinically indicated to address endorsed items the following procedures must be followed:

- The interviewer should stay on the phone with the participant, while the additional staff member pages the on call physician.
- The on call physician should come to the interviewer's location to speak with the participant on the phone.

- If necessary, emergency services in the participant's locale should be contacted and sent to the address given.
- The physician should stay on the phone with the participant until emergency services arrive.

VI. AST and ALT lab values

A. Every effort should be made to obtain blood for AST and ALT. If the participant absolutely cannot be present for a blood draw, -5 should be entered for both values on the Local Laboratory Form.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #11

DATE: February 21, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 MOP clarification – MAB and MAF form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The form completion instructions (QxQs) for the Medical Assessment Baseline Form and the Medical Assessment Follow-Up Form will be updated in the newest version of the QxQs, which are forthcoming. Details regarding each clarification are provided in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Please replace the pages in your MOP with the updated pages when those updates are made available. Please note that only the current version of the LABS-2 MOP will reflect these changes.

Medical Assessment Baseline & Medical Assessment Follow-Up Forms

I. Diabetes Daily Dose.

ISSUE: What is meant by daily dose? Is it the number of times a participant takes their diabetes medication per day? the number of units taken at each injection through the day? or the total units taken in a day?

SOLUTION: Daily dose is the total units taken per 24 hour period. If taken by injection, record the sum of the units of all daily injections. If using an insulin pump, record the total units in a typical 24 hour day.

For example,
20 units Novolog injection - breakfast
15 units Novolog injection - lunchtime
20 units Novolog injection - dinner
29 units Lantus injection - evening
84 = *daily dose*

14. Do you **currently** have diabetes and/or are you currently being treated for diabetes? ☐ 0. No ☐ 1. Yes

If yes,

14.1 Are you **currently** taking oral medication or insulin for diabetes (check "no" or "yes" for each)?

No	Yes		
☐	☐	a. Oral medication	
☐	☐	b. Insulin →	13.1 How many years have you been taking insulin? _____ (years) 13.2 How many daily doses of insulin do you take? _____ **(daily dose)**

LABS-2
OPERATIONS MEMO #12a

DATE: April 17, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Minimum Requirements and Interview Administration Priority

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo supersedes information provided in LABS-2 Operations Memo #12.

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The Executive Committee has detailed the minimum requirements necessary for a participant to remain in LABS and the priority of interview administration. Details regarding each clarification are provided in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. Baseline Interview

Minimum Participant Requirements for Baseline Visit

ISSUE: What are the minimum requirements that a participant must fulfill for the baseline visit?

SOLUTION: The following are the minimum requirements for a participant to remain in LABS-2. If either of these requirements is not met, the participant is not eligible for LABS-2 and an inactivation form must be completed.

1. In-person Visit prior to surgery
   A participant must come in for an in-person visit so that physical measures may be captured.
2. Must agree to attempt blood draw prior to surgery
   A participant must agree to and attempt to give blood.

II.6-month Interview

6-month Interview Administration Priority

ISSUE: Phone interviews are now permitted for the 6-month follow-up visit. A participant is not able to schedule an appointment within the requested +/- 30 day 6-month post-operative window, but they are able to come in for a visit within +/- 90 days after their 6-month post-operative due date. Should I schedule the participant for the in-person interview or administer a phone interview within the 30 day window?

SOLUTION: An in-person visit is ALWAYS preferred over telephone interviews. The phone interview option was added as a last attempt to obtain participant data, after all efforts have been exhausted to schedule an in-person interview. The number of 6 month interviews completed over the phone will be monitored at each site.
As a matter of priority, please follow the below list:

1. In-person, +/- 30 days of anniversary date
2. In-person, +/- 90 days of anniversary date
3. Phone, +/- 90 days of anniversary date

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

Minimum Participant Requirements for 6-month Visit

ISSUE: What are the minimum requirements that a participant must fulfill for a 6-month visit?

SOLUTION: The following are the minimum requirements for a participant to be considered as having a 6-month visit. If site personnel are unable to obtain **any** of the 6-month data/forms listed below either in person or by phone, then the 6-month visit will be considered "missed" and an off-protocol form must be completed stating a missed visit.

Any one of the following forms required for the 6-month visit:
Every effort should be made to complete the FO6 since this captures weight, hospitalization/out-patient care since surgery, and health economics information.

6-month Follow-Up Form (FO6)
Beck Depression Inventory (BDI)
Health Care Utilization Form, if applicable
Medication Form
SF-36

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #13

DATE: March 16, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Behavior Form, AUDIT

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The Steering Committee has approved the following protocol for the AUDIT questionnaire, which is included in the Behavior Questionnaire. Details regarding the protocol are provided in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Since the following protocol requires sharing information from research forms with medical staff, coordinators should check with their local IRBs to ensure that the LABS-2 consent form is sufficient enough to cover this protocol or whether it will need to be explicitly stated in the consent form. If the implementation of this protocol requires a modification to the consent form, coordinators should inform the DCC when changes have been made and approved.

AUDIT Protocol

ISSUE: A participant may report that they consume 5+ alcoholic drinks on a typical day that they are drinking. Should this be reported to the surgeon or clinician?

SOLUTION: If a participant reports in the LABS 2 self-assessment packet that he/she drinks 5 or more drinks on a typical day when drinking (see question below), the coordinator must notify the patient's surgeon or a pre-determined designee* of the patient's alcohol consumption within 24 hours of the research visit or receipt of the survey by mail. However, if the participant is scheduled for surgery within 48 hours of the visit, the coordinator should alert the surgeon while the patient is still in the office.

Coordinators should inform the participant that the surgeon/clinician will be contacted about the level of alcohol consumption.

The coordinator should make notation of this contact in the participant's research file, but should not be involved in any follow-up regarding the patient's alcohol use.

How many drinks containing alcohol do you have on a typical day when you are drinking?

1 or 2 drinks	3 or 4 drinks	5 or 6 drinks	7 to 9 drinks	10 or more drinks

** The PI at each site may designate a clinician, such as a nurse practitioner or physician's assistant, to receive this information and share it with the patient's surgeon. Surgeons and clinicians involved with the care of LABS participants should be familiar with the AUDIT tool and this particular question which is based on alcohol consumption during the last 12 months and does not include how often the patient drinks.*

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2

OPERATIONS MEMO #14

DATE: March 16, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Tanita Scale

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Tanita Scale

ISSUE: The body composition mode on the Tanita cannot be used (i.e., participant cannot remove their shoes, body composition mode not working properly). Can I still obtain a weight if there is no other scale available?

SOLUTION: Weight may and should be taken on the Tanita scale, without utilizing the body composition mode. Directions may be found below or under "WEIGHT ONLY FUNCTION" in the Tanita Manual.

1. **After turning on the unit, press the [WEIGHT ONLY] key.**
   After a momentary display check, "0.0" will appear on the LCD. If measuring units need to be changed, do so at this time by pressing the [kg/lb] key.
   An arrow on the LCD will follow the selection of weighing units.

2. **Weight Measurement**
   Step on the weighing platform. Weight will be displayed on the LCD.

3. **When measuring is complete, press the [ON/OFF] key to turn off the power.**
   - No printer is available when measuring weight only.
   - If body composition analysis is desired, turn the unit off and then on, using the [ON/OFF] key.

   Important Note: There is no automatic weight lock function.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #15

DATE: May 21, 2007

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Annual Interviews: minimum requirements, administration priority and phone option

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

The minimum requirements necessary for a participant to remain in LABS and the priority of interview administration is detailed in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Minimum Participant Requirements for Annual Visits

ISSUE: What are the minimum requirements that a participant must fulfill for annual visits?

SOLUTION: The following are the minimum requirements for a participant to be considered as having an Annual visit. If site personnel are unable to obtain **any** of the annual month data/forms listed below either in person or by phone, then the annual visit will be considered "missed" and an off-protocol form must be completed stating a missed visit.

Any one of the following forms is required for the annual visit:
Every effort should be made to complete the RCAF since this captures weight.

- Beck Depression Inventory
- Behavior Follow-Up
- Berlin Sleep
- Demographic Information Follow-Up
- Gastrointestinal Symptoms Rating Scale
- Impact of Weight Questionnaire
- Interpersonal Support Evaluation List
- Medical Assessment Follow-Up
- Medication Form
- Psychiatric and Emotional Test Survey Follow-Up
- Reproductive Health Follow-Up
- Research Coordinators Assessment Follow-Up
- SF-36
- Sexual Functioning Follow-Up
- Surgeon Medical Assessment Follow-Up
- Urinary Incontinence Follow-Up
- Work Productivity and Activity Impairment

Data Collection Windows

	12 mo.	annual
protocol adherence window	+/- 60 days	+/- 60 days
acceptance window (off protocol)	-90/+180 days	+/- 180 days

12 month and Annual Interview Administration Priority

ISSUE: Phone interviews are now permitted for 12 month and annual visits. A participant is not able to schedule an appointment within the protocol adherence window, but they are able to come in for a visit within acceptance window. Should I schedule the participant for the in-person interview or administer a phone interview within the protocol adherence window?

SOLUTION: An in-person visit is ALWAYS preferred over telephone interviews. The phone interview option was added as a last attempt to obtain participant data, after all efforts have been exhausted to schedule an in-person interview. The number of interviews completed over the phone

will be monitored at each site.

12-month & Annual Interview Phone Option Components

A process to capture how a visit was completed (in-person vs. telephone) is pending. In the interim, please record how the interview was administered in the participant's study file.

I. Beck Depression Inventory (BDI)

A. The BDI may be administered over the telephone within the adherence window as defined in the protocol. The BDI **CANNOT** be mailed to the participant for completion.

B. The following protocol MUST be followed:

Sites that administer the Beck Depression Inventory (BDI) via telephone must follow the following guidelines for participant safety.

- The interviewer must have on hand prior to the scheduled phone contact, the physical address (No PO Box #) of where the participant will be during the interview.
- The Interviewer at each site must have the pager number of an on call MD (affiliated with the Site but not necessarily the PI) in case the need would arise to have the MD speak with the participant.
- There must be at least one other research personnel on staff at the time of the interview who is aware that this interview is taking place and also has the information listed above. (for example: additional RA, PI or even secretarial staff)

If during the administration of the BDI, it would be clinically indicated to address endorsed items the following procedures must be followed:

- The interviewer should stay on the phone with the participant, while the additional staff member pages the on call physician.
- The on call physician should come to the interviewer's location to speak with the participant on the phone.
- If necessary, emergency services in the participant's locale should be contacted and sent to the address given.
- The physician should stay on the phone with the participant until emergency services arrive.

II. Self Assessment Forms *(Behavior Follow-Up, Berlin Sleep, Demographic Information Follow-Up, Gastrointestinal Symptoms Rating Scale, Impact of Weight Questionnaire, Interpersonal Support Evaluation List, Medical Assessment Follow-Up, Psychiatric and Emotional Test Survey Follow-Up, Reproductive Health Follow-Up, SF-36, Sexual Functioning Follow-Up, Urinary Incontinence Follow-Up, Work Productivity and Activity Impairment)*

A. The Self-Assessment forms may be administered over the telephone or sent home to be completed by the participant and then mailed back if allowed by your local IRB. The forms must be completed within the data collection windows as defined in the protocol.

III. Medication Form

A. The Medication Form may be administered over the telephone or sent home to be completed by the participant and then mailed back. The forms must be completed within the data collection windows as defined in the protocol.

B. Medications Verified by Container. If the participant spells out the name of the medication directly from the bottle while on the phone, then verified by container may be checked as yes.

IV. Research Coordinators Assessment Follow-Up

A. The Research Coordinator Assessment form may be administered over the telephone by LABS certified personnel. The forms must be completed within the data collection windows as defined in the protocol.

1.1 For self-reported weights, use “Estimate” to define how the weight was measured.

1.2 Enter -5 for Blood Pressure. Self-reported Blood Pressure is not acceptable.

1.3 Enter -5 for Resting Heart Rate. Self-reported Resting Heart Rate is not acceptable.

1.4 Enter -5 for Waist Circumference. Self-reported Waist Circumference is not acceptable.

1.5 Enter -5 for Neck Circumference. Self-reported Neck Circumference is not acceptable.

V. Surgeons Medical Assessment Follow-Up

A. The Surgeons Medical Assessment Follow-Up form may be administered over the telephone by a *LABS certified surgeon or clinician*. The forms must be completed within the data collection windows as defined in the protocol.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #16

DATE: February 1, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Miscellaneous Issues

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Weight

ISSUE: A participant cannot make it to an in-person visit to be weighed, but they do have a weight from their Primary Care Physician or other Professional Organization (ex. Jenny Craig, Weight Watchers). Can this be used?

SOLUTION: Yes. However, coordinators must confirm that the participant has been weighed and that the value is not an estimate. “How was weight measured?” should be recorded under "other scale". Also, the date of when the weight was collected should be recorded in the measurement date field, not the date of when the coordinator spoke with the participant or the date of when the form was completed.

Medications

ISSUE: A participant did not bring in their bottles of medications, but they did bring a list of medications from their doctor's office. Is this acceptable?

SOLUTION: Yes. A printed out list from a participant's doctor's office is acceptable for recording medications, but 'verified by bottle' cannot be checked. In addition, a copy of the list should remain in the participants study file.

Pregnancy

ISSUE: A participant reports that they are pregnant during a follow-up visit. Should the Tanita scale still be used?

SOLUTION: Yes. The Tanita scale should be restarted in manual weight-only mode (LABS-1 OP MEMO #12). The body composition mode is not reliable due to water distribution during pregnancy.

Deaths

ISSUE: A participant died before they were discharged from the hospital. How should the discharge form be completed?

SOLUTION: Discharge date = date of death. In addition, the length of stay of the participant should be calculated from surgery date to date of death. For example, if the participant died on their date of surgery, the length of stay would be 0.

In-person visits >55 days after surgery

ISSUE: A participant rescheduled their 30-day follow up appointment and now it is outside of the 55 day window for the Post-Operative Form. Can the Post-Operative Form be completed based on this visit?

SOLUTION: Yes. In-person visits that have been rescheduled outside of 55 days may now be used to complete the 30-day Post-Operative Forms. It is of the utmost importance that the information recorded on the 30-day Post-Operative Form be limited to 30-days post-surgery regardless of when the information is collected. Any events/information more than 30 days after surgery should not be recorded. However, the status date on the form should reflect that date of the in-person visit. In addition, in-person visits outside of the 55 day window will be monitored at each site.

Post-Operative Pain Management

ISSUE: A participant received pain management medication in the recovery room immediately following surgery. Should this be recorded?

SOLUTION: Yes. Any pain management given in the recovery room, after surgery, should be captured on the *Discharge Form*.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #17

DATE: February 1, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 StepWatch Issues

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel.** Please distribute this memo to the appropriate personnel at your site.

Guidelines for prioritizing patients for StepWatch Monitor distribution as well as information related to the recording limit are included in this Operations Memo. LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. Prioritizing patients for StepWatch Monitors distribution when monitors are limited

1. Participants with baseline appointments should be given priority over participants with follow-up visits, since the annual follow-up windows are much larger and there is more time to send participants a StepWatch Monitor (SAM) via mail for a follow-up assessment.

	12-month	annual
protocol adherence window	+/- 60	+/- 60
assessment window	-90/+180	+/- 180

2. When determining priority between two participants with baseline appointments, the coordinator should use their own discretion. However, there are two major considerations. First, the participants' surgery dates. If a participant will only have time to wear the SAM if given one immediately, he/she should receive priority over a participant with a later surgery date. Another consideration is the participants' attitudes. Priority should be given to the participant who does not seem likely to comply if not given a SAM immediately and in-person, while the other participant should be sent a SAM via mail when the next one becomes available.

3. When determining priority between participants with follow-up appointments, first priority should be given to participants with baseline SAM data. If participants do not differ on this (they either all have baseline SAM data or none has baseline SAM data) the participant with the lesser amount of time left in the assessment window should be given the available SAM.

II. Recording limit

The SAM is only capable of recording 15 days worth of data. Therefore, it is advisable to alert the patient to this so the SAM is not kept with the intention of make-up days past the 15 day limit.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #17a

DATE: August 13, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: StepWatch Activity Monitors

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo supersedes information provided in LABS-2 Operations Memo #17.

This memo addresses issues for the **Coordinators.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. A SAM has been returned that does not appear to have been worn. Do I still need to download the data?

Yes. For tracking purposes, always download and save the data file from the monitor so it can be sent to the DCC.

II. A participant uses a wheelchair. Should they be given a SAM?

If a participant uses a wheelchair at times, but is not bound to the wheelchair, then a SAM should be given.

If a participant exclusively uses a wheelchair, a SAM should not be given and an OFF form should be completed to report "Participant is exclusively bound to wheelchair".

III. New OFF protocol form requirements for the SAM.

A. If data from a SAM is downloaded and there is insufficient wear, an OFF form is no longer required to report "Participant was given the SAM but wore it for fewer than 4 days with at least 10 hours of wear".

B. If a SAM is given to a participant, but the data is not downloaded and saved for any reason (e.g. monitor not returned, technical problem with data) an OFF form must be completed to explain why the data was not downloaded.

C. If a participant is not given a SAM, an OFF form must be completed to explain why a SAM was not given.

IV. Prioritizing participants for SAM distribution when monitors are limited.

A. In general, first priority goes to follow-up participants with SAM data at previous visits. Thus, a participant at their one year follow-up with baseline data is higher priority to a new baseline participant.

B. A participant at their one year follow-up without baseline data is lower priority to a new baseline participant because, in the long run, there is a better chance of getting complete data on the baseline patient.

C. A participant with baseline and 1 year follow-up SAM data is higher priority than a participant with only baseline SAM data

D. A participant with baseline data and 1 year follow-up SAM data is higher priority than a participant with baseline and 2 year follow-up because he/she is not missing any SAM data.

E. Once a participant has missed baseline SAM data, he/she should not be approached for SAM data at follow-up appointments unless there are sufficient SAMs for all follow-up participants with baseline data.

V. Reminder of Recording Limit

The SAM is only capable of recording 15 days worth of data. Therefore, it is advisable to alert the patient to this so the SAM is not kept with the intention of make-up days past the 15 day limit.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #18

DATE: February 1, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Clinical Issues

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Surgeons.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. Liver Biopsies

Needle biopsies should immediately be placed in buffered formalin/formaldehyde (or the fixative that is commonly used at your institution's pathology laboratory) to prevent any damage to the sample. Per the study Pathologist, ideal time is approximately 15 minutes after obtaining the sample.

II. Liver Slides

The LABS protocol states that 1 H&E, 1 Masson, 1 Iron stained slide and 7 unstained slides be sent to the study pathologist. If it is not possible to send special stained slides that have been prepared by the site, 1 H&E slide and 9 unstained slides should be sent in their place.

III. Urine Collection

For participants that are using a catheter, urine collection is still possible. Please consult local clinical staff for help with clamping the catheter tube, or instructions on obtaining new urine using the standard procedure of the local GCRC and/or phlebotomist.

IV. Physical Measurements

Participants with protruding hernias should still have their Saggital Abdominal Diameter and Waist Circumference measured as per the LABS protocol. In addition, the study coordinator must be alerted so they may record that the hernia was present pre-surgery on the Surgeon Medical Assessment form (SMAB/SMAF).

V. Blood Pressure

Blood pressure should not be taken immediately after a blood draw. Preferably, the participant's blood pressure should be taken prior to the blood draw if being completed during the same part of the visit. If this is not possible, a minimum of 10-15 minutes should elapse after the blood draw before the blood pressure measurement is performed.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #19

DATE: August 28, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: LABS-2 Miscellaneous Issues

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Surgeons.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. Sleep Apnea

A. If a participant reports using a Vpap for treatment of sleep apnea, it should be noted by marking yes to C-pap/ Bi-pap on the applicable form (i.e., Pre-operative form, Pre-operative Update form, Surgeons Medical Assessment Baseline form and/or Surgeons Medical Assessment Follow-up form).

B. If a participant reports using a C-pap/ Bi-pap (or Vpap) every night, the frequency selected on the Surgeons Medical Assessment Baseline form and Surgeons Medical Assessment Follow-up form should be 'always'.

C. If a participant returns for a follow-up appointment and they have not had a sleep study done to determine if their sleep apnea has been resolved, participant self-report is acceptable.

II. Band Adjustment done outside of site hospital

If a participant reports that they had a band adjustment done outside of the site hospital, a Health Care Utilization form must be completed to capture this information.

III. Pre-operative Antibiotics

Antibiotics that were administered after the 1st surgical incision are NOT considered pre-operative antibiotics and will not be captured on any forms. Specifically, it should not be recorded under Q6 of the Surgeons Questionnaire.

IV. Stomaphx

Stomaphx should be captured as an endoscopic procedure on Q7.1 of the Post-operative form.

LABS-2
OPERATIONS MEMO #20

DATE: October 15, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Form & QxQ clarifications

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

I. Weight History Questionnaire (WHQ)

The WHQ form collects historical data from the participant; therefore there is no window of completion. It should not be reported on an OFF form unless the participant 1) has been inactivated from the study or 2) the participant refuses to complete the form. If the participant is inactivated or refuses the form, the WHQ should be reported on the Pre-Operative OFF protocol form.

II. Serious Adverse Event (SAE) - Deaths

SAE forms for deaths are only required if the death is *related to the study visit*.

III. 6 Month Follow-Up Form (FO6)

7. Since your weight control surgery, how many **times** have you seen a nutritionist/dietitian **for weight control**?

Never 1 to 5 times 6 to 10 times 11– 20 times more than 20 times

Only nutritionists and dieticians should be counted. Nurses, Nurse Practitioners or Medical Doctors should not be counted, unless they are also certified nutritionists or dieticians.

9. Since your weight control surgery, how many **weeks** did you participate in group exercise **for weight control**?

_____ weeks

Group exercise is defined as formal group exercise (supported in a class setting or formally organized). Do not include walking with friends or family.

10. Since your weight control surgery, how many **weeks** did you participate in a support/self help group **for weight control**?

_____ weeks

Support/self help group for weight control is defined as a professional group or organization. Do not include religious leaders, family members or one-on-one conversations.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

IV. Health Care Utilization (HC)

3. Treatment/care utilized: 1. Hospitalization 2. Out-patient procedure

To alleviate coordinators burden, it was recommended that sites make every effort to confirm ALL treatment/care and reasons for treatment/care with medical discharge summary/medical records for ***hospitalizations***. Sites are encouraged, but not required, to make every effort to follow-up treatment/care and reasons for treatment/care with medical discharge summary/medical records for ***out-patient procedures***.

V. Post-Operative Form (POST2) - Heparin

If Heparin is given thru an IV, it should be recorded under Q8, Other, as shown below. The dose and units should be recorded as -5: Not Done.

8. Were any post-discharge anticoagulation therapies received? 0. No 1. Yes

If yes,

No	Yes		Prophylactic (preventative) Use? No	Prophylactic (preventative) Use? Yes	# of Days	Times per day	Therapeutic (as treatment) Use? No	Therapeutic (as treatment) Use? Yes	# of Days	Times per day
		5000 units sub-cutaneous heparin			____	____			____	____
		Other dose heparin (Dose: _____ units)			____	____			____	____
		Low molecular weight heparin If yes,			____	____			____	____
		Specify dose: 20 mg 40 mg 60 mg Other (Specify: _____ mg)								
	☑	Other Anticoagulant If yes,			____	____			____	____
		Specify name: IV Heparin Specify dose: -5 1.mg 2. units ☑-5. Not Done								

LABS-2
OPERATIONS MEMO #21

DATE: November 20, 2008

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Subsequent Bariatric Procedure Form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Surgeons/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

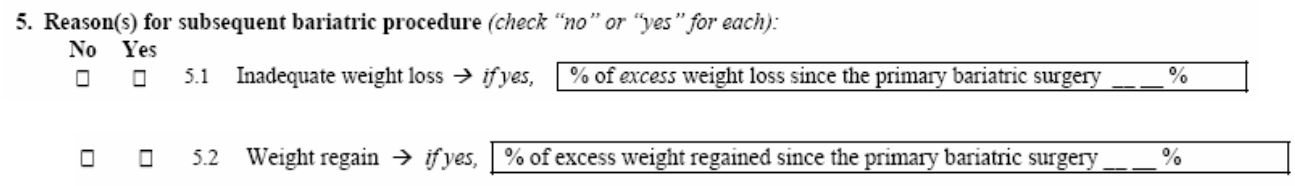
I. Subsequent Bariatric Procedure

A. A Health Care Utilization form should be completed for ***every*** Subsequent Bariatric Procedure. The Health Care Utilization form should be completed at the time of the follow-up appointment and not at the time of surgery.

B. If a participant reports having a subsequent bariatric procedure done at a non-LABS site or by a non-LABS certified surgeon, a Health Care Utilization form should still be completed to capture the procedure.

II. Subsequent Bariatric Procedure Form calculations

Sites are no longer required to calculate % of excess weight loss or % of excess weight gain if "yes" is selected for Q5.1 and Q5.2 on the SBP form. Please enter -5 for both values. These fields will be removed from the form during the next round of form updates.


5. **Reason(s) for subsequent bariatric procedure** *(check "no" or "yes" for each):*

No	Yes			
☐	☐	5.1	Inadequate weight loss → *if yes,*	% of *excess* weight loss since the primary bariatric surgery __ __ %
☐	☐	5.2	Weight regain → *if yes,*	% of excess weight regained since the primary bariatric surgery __ __ %

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #21a

DATE: June 16, 2009

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Non-LABS facility subsequent bariatric surgeries

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This Operations Memo supersedes information provided in LABS-2 Operations Memo #21.

This memo addresses issues for the **Coordinators/Clinical personnel/Surgeons/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Research Coordinator Assessment – Follow-Up (RCAF) Form

For all patients, the coordinator should specifically ask "Have you had any subsequent bariatric surgeries done at another facility?"

If the participant has, the event should be recorded under Q4 of the RCAF form.
Please note that Q4 of the RCAF form will trigger a corresponding HC form.

4. **In the past 12-months,** other than noted in item 3, have you:

4.1. been **hospitalized**? ☐ 0. No ☐ 1. Yes →

If yes, did this **hospitalization** occur in the last **6-months**?
☐ 0. No
☐ 1. Yes

4.2. had any **out-patient** procedures? ☐ 0. No ☐ 1. Yes →

If yes, did this **out-patient** procedure occur in the last **6 months**?
☐ 0. No
☐ 1. Yes

Health Care Utilization (HC) Form

The HC form should be completed for any subsequent bariatric surgeries done at a non-LABS facility.

Surgery Related forms

A SBP, as well as the SQ and surgery specific forms, should be completed to the best of the surgeon's ability for subsequent bariatric surgeries done at a non-LABS facility.

The certification number used for an SBP form should be 99999.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #22a

DATE: June 16, 2009

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Non-LABS facility band adjustments/Upper GI Series

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This Operations Memo supersedes information provided in LABS-2 Operations Memo #22.

This memo addresses issues for the **Coordinators/Clinical personnel/Surgeons/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

The information in this memo pertains to adjustable gastric band patients ONLY.

Research Coordinator Assessment – Follow-Up (RCAF) Form

For adjustable gastric band patients, adjustments should NOT be included in Q4.2 per the definition of an out-patient procedure.

4. **In the past 12-months,** other than noted in item 3, have you:

4.1. been **hospitalized**? ☐ 0. No ☐ 1. Yes →

If yes, did this **hospitalization** occur in the last **6-months**?
☐ 0. No
☐ 1. Yes

4.2. had any **out-patient** procedures? ☐ 0. No ☐ 1. Yes →

If yes, did this **out-patient** procedure occur in the last **6 months**?
☐ 0. No
☐ 1. Yes

Definition of an Outpatient Procedure: A procedure with any of the following: 1) anesthesia is required, 2) a tube is placed in the throat, nose or rectum, 3) anything is removed from the body 4) a needle(s) is inserted into the skin 5) anything must be taken or swallowed for an x-ray, 6) anything removed from, or inserted into, the patient 7) imaging study (e.g. MRI, CT). Exclusions: Flu shots, blood donation, blood draw to have labs done, acupuncture, **adjustments to gastric bands**.

Health Care Utilization (HC) Form

The HC form should NOT be completed for an adjustment to gastric band per the definition of out-patient procedure.

Adjustment to Gastric Band Procedure (AGBP) Form

An AGBP form should be completed for adjustments even though the adjustment was performed at a non-LABS facility.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #23

DATE: June 23, 2009

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Discharge Form and Post-Op Form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel//Data Management.** Please distribute this memo to the appropriate personnel at your site.

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Low Molecular Weight Heparin

The information below applies to Q8 of the Post-Operative Form and Q1 of the Discharge Form.

Were any planned post-discharge anticoagulation therapies received? ☐ 0. No ☐ 1. Yes

If yes,

			Prophylactic (preventative) Use?				Therapeutic (as treatment) Use?			
No	Yes		No	Yes	# of Days	Times per day	No	Yes	# of Days	Times per day
☐	☐	5000 units sub-cutaneous heparin	☐	☐	____	____	☐	☐	____	____
☐	☐	Other dose heparin (Dose: _____ units)	☐	☐	____	____	☐	☐	____	____
☐	☐	Low molecular weight heparin If yes,	☐	☐	____	____	☐	☐	____	____
		Specify dose: ☐ 20 mg ☐ 40 mg ☐ 60 mg ☐ Other (Specify: _____ mg)								
☐	☐	Other Anticoagulant If yes,	☐	☐	____	____	☐	☐	____	____
		Specify name: _____ Specify dose:_____ ☐1.mg ☐2. units								

To calculate "# of Days" and "Times per day" for participants that received low molecular weight heparin a different number of times per each day, use the following examples:

3 days @ 3x day, 1 day @ 1x day = 10/3=3.33 days (@3x day)
2 days @ 3x day, 1 day @ 1x day = 7/3 = 2.33 days (@3x day)
3 days @ 2x day, 1 day @ 1x day = 7/2 = 3.50 days (@2x day)

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #24

DATE: March 2, 2010

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Discharge Form, Post-Op Form, HC Form, SMAF Form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel//Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Discharge Form and Post-Operative Form

Low Molecular Weight Heparin

The information below applies to Q8 of the Post-Operative Form and Q1 of the Discharge Form.

Were any planned post-discharge anticoagulation therapies received? ☐ 0. No ☐ 1. Yes

If yes,

			Prophylactic (preventative) Use?				Therapeutic (as treatment) Use?			
No	Yes		No	Yes	# of Days	Times per day	No	Yes	# of Days	Times per day
☐	☐	5000 units sub-cutaneous heparin	☐	☐	____	____	☐	☐	____	____
☐	☐	Other dose heparin (Dose: _____ units)	☐	☐	____	____	☐	☐	____	____
☐	☐	Low molecular weight heparin If yes,	☐	☐	____	____	☐	☐	____	____
		Specify dose: ☐ 20 mg ☐ 40 mg ☐ 60 mg ☐ Other (Specify: _____ mg)								
☐	☐	Other Anticoagulant If yes,	☐	☐	____	____	☐	☐	____	____
		Specify name: _____ Specify dose:_____ ☐1.mg ☐2. units								

For participants that received low molecular weight heparin at different doses, the average dose should be used and captured under "other". To calculate the average dose, use the following examples:

60 mg/2x day = 120 mg
40 mg/2x day = 80 mg

Surgeons Medical Assessment Form

Apnea-Hypopnea Index Score

If an Apnea-Hypopnea Index Score is in decimals, the score should be rounded down to the nearest whole number. (Ex. 14.5 = 14)

12. Polysomnogram: *If Yes* → Apnea-Hypopnea Index (AHI): __ __ __

Health Care Utilization Form

Length of Stay

If a participant is still residing at a Rehabilitation facility, Skilled nursing facility, Other hospital or Other post-discharge location (with the exception of home) at the time that the HC Form is completed, Q3.3 should be answered as -2: N/A.

An error will be generated as a result of entering a -2 in the database. A help desk ticket should be submitted confirming that the participant is still residing in the care facility or other post-discharge location upon completion of the HC form.

3.1 Discharge location: ☐ 1. Home ☐ 2. Rehabilitation facility ☐ 3. Skilled nursing facility ☐ 4. Other hospital ☐ 5. Other _____

3.2 Discharge Date: __ __ / __ __ / 20 __ __ (mm dd yy)

3.3 If not discharged to home, specify length of care at facility or other hospital: _____ (days)

LABS-2
OPERATIONS MEMO #25

DATE: April 13, 2010

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Walk Eligibility Form, 400 Meter Data Collection Form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

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Please contact the LABS Help Desk or Wendy King, PhD (kingw@edc.pitt.edu) if you have any questions about the corridor walk eligibility or data collection forms.

WEF Form:

4. Is there evidence of any of the following abnormal ECG findings in the last *12 months?*

If a participant recently had an ECG but you do not have the report and the participant does not know the results, mark "no" to all ECG sub-questions under "Is there evidence of any of the following abnormal ECG findings in the last 12 months." However, if the participant feels it would be unsafe to attempt the walk because of a heart related problem that might have been picked up with the ECG, mark "yes" to " Do you feel it would be UNSAFE for you to walk up and down this hallway?" and "yes" to "Test results pending."

4. Is there evidence of any of the following abnormal ECG findings in the last *12 months? Check "no" or "yes" for each:*

No	Yes		
		Atrial fibrillation or atrial flutter (new onset)	→ *If yes, do not test.*
		Wolff-Parkinson-White (WPW) or ventricular pre-excitation	→ *If yes, do not test.*
		Idioventricular rhythm	→ *If yes, do not test.*
		Ventricular tachycardia	→ *If yes, do not test.*
		Third degree or complete A-V block	→ *If yes, do not test.*
		Any statement including reference to acute injury or acute ischemia, or marked T-wave abnormality	→ *If yes, do not test.*
		Abnormal cardiogram indicative of ischemia without medical/cardiac clearance for surgery: (Specify: _____)	→ *If yes, do not test.*

6. Do you feel it would be **UNSAFE** for you to walk up and down this hallway?

*If the participant says yes but does not actually provide a reason related to safety (e.g., I'm tired, my knees hurt…) please gently encourage the participant to attempt the walk, noting that if he/she gets too tired or uncomfortable he/she may stop at any time. If the participant is not convinced to attempt the walk, please indicate the reason the participant feels it would be "unsafe" under item 6 **or** indicate that the participant refused (e.g. participant is not in the mood or has to go vs. SAFETY reason). You will be able to select "refused" in the next version of the form. For the time being since "refused" is not an option, please write "Refused" under "6.6 Other."*

6. Do you feel it would be **UNSAFE** for you to walk up and down this hallway?	☐ 0.No	☐ 1. Yes	→ *If yes, do not test*

If yes, specify why by checking "no" or "yes" for each:

6.1 Participant is light headed or dizzy.	☐ 0.No	☐ 1. Yes
6.2 Participant did not feel well (e.g., too tired, ill, hot, sweaty, nervous)	☐ 0.No	☐ 1. Yes
6.3 Participant was afraid of falling	☐ 0.No	☐ 1. Yes
6.4 Participant said that it was painful to walk or had an injury that limited walking.	☐ 0.No	☐ 1. Yes
6.5 Test results (ECG/BP/HR) pending	☐ 0.No	☐ 1. Yes
6.6 Other:	☐ 0.No	☐ 1. Yes
(Specify: _____)		

MWF Form:

6.3 Why didn't the participant complete 400 meters *(specify no or yes to each)*?

Please note that you should only mark yes to reason(s) why the participant didn't complete the walk, not to all symptoms the participant experienced during the walk. In many cases only one reason should be marked.
Please use the option "reported calf pain during test" to report ***ANY leg pain*** *that was the reason the participant quit the walk. Thus, shin, thigh and quadriceps pain should all be reported under calf pain from this point forward (and should no longer be listed under "other").*

6.3 Why didn't the participant complete 400 meters *(specify no or yes to each)*?

No	Yes		No	Yes	
☐	☐	Participant reported that they felt too tired	☐	☐	Participant sat down during test
☐	☐	Reported chest pain, tightness, or pressure during test	☐	☐	Participant needed to rest for more than 60 seconds
☐	☐	Reported trouble breathing or shortness of breath during test	☐	☐	Participant requested or needed cane or assistive device
☐	☐	Reported feeling faint, lightheaded or dizzy during test	☐	☐	More than 15 minutes elapsed from start of test
☐	☐	Reported knee pain during test	☐	☐	Participant heart rate was over 135 bmp for 5 minutes
☐	☐	Reported hip pain during test	☐	☐	Participant refused
☐	☐	Reported calf pain during test	☐	☐	Other (Specify: _____)
☐	☐	Reported back pain during test			

12. While you were walking did you have any of the following symptoms:

*Please use the option "calf pain" to report **ANY leg pain** that is not tingling (item 12.7) or cramps (item 12.8). Thus, shin, thigh and quadriceps pain should all be reported under calf pain from this point forward (and should no longer be listed under "other"). Do not use the "other, specify" option to be more specific than the provided options. For example, please use "foot pain" to report ANY pain in the foot (toe, Achilles, heal, etc).*

	No	Yes	Don't Know	Refused
12.1 Chest pain?	☐	☐	☐	☐
12.2 Shortness of breath?	☐	☐	☐	☐
12.3 Knee pain?	☐	☐	☐	☐
12.4 Hip pain?	☐	☐	☐	☐
12.5 Calf pain?	☐	☐	☐	☐
12.6 Foot pain?	☐	☐	☐	☐
12.7 Numbness or tingling in your legs or feet?	☐	☐	☐	☐
12.8 Leg cramps?	☐	☐	☐	☐
12.9 Back pain?	☐	☐	☐	☐
12.10 Other (*specify* _____)	☐	☐	☐	☐

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #26

DATE: April 20, 2010

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Weight

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

The definitions of weight in this Operations Memo supersede all QxQ and previous Operations Memo definitions of weight.

Hierarchy of weight measurement, as captured on the RCAF:

1.1 Weight: ___ ___ ___ (lb) → How was weight measured?
- ☐ 1. Tanita Scale → (Percent Body fat: ___ ___ . ___ %)
- ☐ 2. Other Scale
- ☐ 3. Last available bed weight
- ☐ 4. Estimate

1.2 How was weight reported?
- ☐ 1. Coordinator
- ☐ 2. Doctors office
- ☐ 3. Chart
- ☐ 4. Participant
- ☐ 5. Other (specify: _____)

I. Tanita Scale

Participant is weighed on the ***study*** Tanita Scale. Q1.2 is 1.Coordinator.

II. Other Scale

a. Weight is measured by someone who is LABS certified during a LABS study visit, but not on the study Tanita Scale. Q1.2 is 1.Coordinator.

b. Medical Records:
If a participant is not weighed by someone who is LABS-certified, medical records should be searched for a weight obtained within the visit window. Q1.2 is 3.Chart.

c. Medical Care Provider (obtained by LABS certified personnel):
If the participant is not weighed by someone who is LABS-certified and the participant has given consent (recorded on the LABS-2 consent form) for contact with the medical care provider, study personnel may obtain a weight from the participant's medical care provider via phone, e-mail, fax, etc.. Q1.2 is 2.Doctors office.

d. Primary Care Physician or other medical care provider (reported by participant):
If the participant is not weighed by someone who is LABS-certified, and a weight is not available directly from a medical care provider (or personnel at the medical care provider's

office), but the participant reports that he or she was weighed by a medical care provider. Q1.2 is 4.Participant.

e. A weight measured by a "professional organization" (e.g. Jenny Craig, Weight Watchers). Q1.2 is 4.Participant.

III. Last Available Bed Weight

Last available bed weight should only be recorded on a follow-up visit form if it is the only weight that is available and if the measurement was performed within the visit window. A bed weight will result in an edit during data entry asking the site to confirm. A help desk ticket will need to be submitted to confirm. Q1.2 is dependent on the source.

IV. Estimate

A self-reported weight that was obtained from a scale other than as described above (e.g., home, gym). Ask for the participant to weigh themselves now. Q1.2 is 4.Participant.

If the participant reports not being weighed with a scale, weight is to be recorded as -5:Not Done.

LABS-2
OPERATIONS MEMO #27

DATE: September 16, 2010

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Upper GI series

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

This Operations Memo supersedes all QxQs and previous Operations Memos regarding the form completion necessary for Upper GIs.

All Upper GI series performed on participants who have a band must be captured on both the Health Care Utilization form (HC) and Adjustment to Gastric Band Form (AGBP).

Health Care Utilization Form (HC)

If an Upper GI series is performed on a LABS participant, it must be captured on an HC form.

Adjustment to Gastric Band Form (AGBP)

For participants that have an adjustable gastric band, an Upper GI series may be captured on the same AGBP form along with an adjustment regardless of whether or not the radiological study was used to determine the placement of the band or was reviewed prior to the adjustment. The ABGP form will include both the Upper GI series and the band adjustment information.

The alternative is to capture the Upper GI on a separate AGBP form.

For participants who have had a band removed, Upper GI series performed after band removal must be captured on an AGBP form and an HC Form.

LABS-2
OPERATIONS MEMO #28

DATE: December 15, 2010

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Source of data and ER visits

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Source of Data

1. Weight

Weight obtained by the coordinator, whether over the phone or in person, should be recorded on the Research Coordinator's Assessment Form (RCAF).

Weight obtained by the coordinator cannot be transcribed onto the WGT form, which is a self-assessment form to be completed by the participant.

2. Other Medical Information

The SHORT form was designed to capture key information from a participant that would be available should the participant fail to attend a visit. The SHORT form is to be administered by the coordinator over the phone. The SHORT form **cannot** be completed from medical records.

The Surgeon's Medical Assessment Form (SMAF) was designed to be completed by the surgeon or personnel who have completed the SMAF certification module. Information can be obtained from the participant (in person or over the phone) as well as from medical records.

Health Care Utilization Form (HC)

Emergency Room visits should only be captured on the HC form if the visit resulted in a hospital admission or a procedure that should be captured per the definition of out-patient procedure in the HC form QxQ:

A procedure with any of the following: 1) anesthesia is required, 2) a tube is placed in the throat, nose or rectum, 3) anything is removed from the body 4) a needle(s) is inserted into the skin 5) anything must be taken or swallowed for an x-ray, 6) anything removed from, or inserted into, the patient 7) imaging study (e.g. MRI, CT). *Exclusions*: Flu shots, blood donation, blood draw to have labs done, acupuncture, band adjustments.

LABS-2
OPERATIONS MEMO #29

DATE: February 28, 2011

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Source of data and SHORT form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Source of Data

Weight

Per Operations Memo #28...

Weight obtained by the coordinator, whether over the phone or in person, should be recorded on the Research Coordinator's Assessment Form (RCAF).

Weight obtained by the coordinator cannot be transcribed onto the WGT form, which is a self-assessment form to be completed by the participant.

In addition, a weight obtained by the coordinator, whether over the phone, in person, via PCP, or using medical charts, should never be transcribed to the WGT form. The WGT form is specifically for participant self report.

Likewise, a weight from the WGT form should never be transcribed to the RCAF form. The RCAF form is specifically for a weight obtained by the coordinator.

SHORT form

Per Operations Memo #28...

*The SHORT form was designed to capture key information from a participant that would be available should the participant fail to attend a visit. The SHORT form is to be administered by the coordinator over the phone. The SHORT form **cannot** be completed from medical records.*

In addition, if the SHORT form is completed, the visit will not be deemed a missed visit. The visit should not be reported as a missed visit on the OFF protocol form, but all missing data components will need to be reported.

LABS-2
OPERATIONS MEMO #30

DATE: May 20, 2011

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: SMAF and Upper GIs

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This memo addresses issues for the **Coordinators/Clinical personnel/Data Management.** Please distribute this memo to the appropriate personnel at your site.

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Surgeon's Medical Assessment Form (SMAF)

When using medical charts to complete an SMAF, a comorbidity or condition should be marked as "unknown" if there is no documentation relating to it.

If there is notation that a participant's entire "system" or overall health was evaluated and the comorbidity or condition is not documented, then personnel completing the SMAF may assume a comorbidity or condition does not exist and can mark as "No".

Upper GIs

A UGI series is not the same procedure as an Upper GI endoscopy.

UGI series: a set of radiological images also known as a "barium swallow".
Upper GI endoscopy: a tubal imaging procedure.

On the HCU form, both the UGI series and Upper GI endoscopy are reported under 3.11 **Gastrointestinal, "**Non-surgical or screening". The UGI series should be reported under "Imaging", which will trigger an AGBP form.

Please note: If the early version of the Health Care Utilization form (HC form) needs to be used for any reason, UGI should be recorded under "Other".

LABS-2
OPERATIONS MEMO #31

DATE: July 8, 2011

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: HC/HCU and VTYPE (in-person)

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Health Care Utilization Form (HC/HCU)

HC/HCU forms are required based on the hospitalization and outpatient questions on the Research Coordinator's Assessment Follow-up (RCAF) form. If an RCAF is not completed/entered, the data management system will not prompt for an HC/HCU form. In addition, although the SHORT form captures hospitalization and outpatient information, an HC/HCU form is not administered in conjunction with the SHORT (which is designed to be completed in a few minutes over the phone). Therefore, the data management system does not prompt for an HC/HCU based on the information from the SHORT. The DCC has identified three scenarios sites are experiencing with regard to the HC/HCU, RCAF and SHORT combinations.

No RCAF; SHORT form and HC/HCU completed.
Since an HC/HCU is not typically completed if the SHORT form reports an outpatient procedure or hospitalization, HC/HCU forms are being flagged in the system as No Match Rule. Although the HC/HCU will not be required to be completed when only the SHORT indicates hospitalization or outpatient procedures, the system will be modified to accept an HC/HCU in this scenario.

*No RCAF, No SHORT; HC/HCU form completed (**and other visit data collected**).*
There are cases where neither the RCAF nor the SHORT has been completed but site personnel have obtained health care utilization information via medical charts and have completed an HC/HCU. ***As long as other visit data have been collected (one or more self-assessment or clinician forms; excludes forms completed solely via chart review)***, complete Q5.1 and Q5.2 on the RCAF using a form completion date that matches the completion date of the HC/HCU form. All other items on the RCAF, including physical measures, should be marked as "not done". Entry of the RCAF will prevent the HC/HCU form from being flagged as unexpected in the data management system.

*No RCAF, No SHORT; HC/HCU form completed (**no other visit data collected**)*
If there are no other data available for a visit, the HC/HCU form should not be entered. If it is the only form entered, it will generate a no-match rule and a help desk ticket should be entered to request deletion.

VTYPE (In-person visit)

The definition of an in-person LABS research visit:

The participant is seen by personnel certified in the **full** LABS protocol (excludes surgeon-only and SMAF-only certification) AND at least 1 of the following occurs during the visit:

- Physical Measures (taken per the LABS protocol)
- Eligibility for the corridor walk is assessed (WEF form is completed in-person)
- Blood draw
- Clinician-administered form is completed. NOTE: This includes clinician forms that are completed during a LABS **research** visit. This does not include an SMAF that is completed by a LABS-certified surgeon or an SMAF-only certified clinician during a **clinic** visit. A clinic visit is not a LABS in person visit.

LABS-2
OPERATIONS MEMO #30a

DATE: May 25, 2011

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: SMAF and Upper GIs

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

This Operations Memo supersedes information provided in LABS-2 Operations Memo #30.

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Surgeon's Medical Assessment Form (SMAF)

When using medical charts to complete an SMAF, a comorbidity or condition should be marked as "unknown" if there is no documentation relating to it.

If there is notation that a participant's entire "system" or overall health was evaluated and the comorbidity or condition is not documented, then personnel completing the SMAF may assume a comorbidity or condition does not exist and can mark as "No".

Upper GIs

A UGI series is not the same procedure as an Upper GI endoscopy.

UGI series: a set of radiological images also known as a "barium swallow".
Upper GI endoscopy: a tubal imaging procedure.

On the HCU form, both the UGI series and Upper GI endoscopy are reported under 3.11 **Gastrointestinal, "**Non-surgical or screening". The UGI series should be reported under "Imaging", which will trigger an AGBP form (for band participants only).

Please note: If the early version of the Health Care Utilization form (HC form) needs to be used for any reason, UGI should be recorded under "Other".

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #32

DATE: June 27, 2012

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Hierarchy of weight obtained from medical chart

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

When medical charts are reviewed to find a participant weight, there may be multiple weights in the chart. What is the correct weight to use?

If a **participant had an in-person visit**, the weight closest to the visit date should be used.

If a **participant did not have an in-person visit**, the weight closest to the surgery anniversary date should be used.

Note that it is important that accurate weight measurements are reported in the research database. If the weight chosen (per the above protocol) seems to be inconsistent with the other weights in the charts, the PI should be consulted to determine the most appropriate weight to record and enter into the database.

LABS-2 definition of in-person visit:
As a reminder, Operations Memo #31 defines an in-person visit as follows:

The participant is seen by personnel certified in the full LABS protocol (excludes surgeon-only and SMAF-only certification) AND at least 1 of the following occurs during the visit:

- *Physical Measures (taken per the LABS protocol)*
- *Eligibility for the corridor walk is assessed (WEF form is completed in-person)*
- *Blood draw*
- *Clinician-administered form is completed. NOTE: This includes clinician forms that are completed during a LABS research visit. This does not include an SMAF that is completed by a LABS-certified surgeon or an SMAF-only certified clinician during a clinic visit. A clinic visit is not a LABS in person visit.*

LABS-2
OPERATIONS MEMO #33

DATE: January 24, 2013

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: SMAF definition of "treatment for irregular heart beat"

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

The definition of Q6 of the SMAF has been modified as follows:

6. Treatment for Irregular heart beat

Treatments include physical Maneuvres (Vagal), Antiarrhythmic or other drugs used to prevent arrhythmia, electricity (ex., shock or defibrillation) or electrical devices (ex., implanted defibrillator or pacemakers) or electrical cautery (fine probes inserted through the blood vessels to map electrical activity from within the heart) or other techniques (pulmonary vein isolation). The participant must have had treatment for irregular heart beat in the past 12-months. Note that if a participant had a pacemaker inserted more than 12-months ago, "no" should be selected for treatment for irregular heart beat.

LABS-2
OPERATIONS MEMO # 34

DATE: September 5, 2013

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Administering the Events and Complications (EC) form

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

Some of the items on the Events and Complications (EC) form have been similarly assessed on other **self-assessment** forms at previous visits. To augment the administration of the EC form, a list by participant ID of events or complications previously reported on **self-assessment** forms (see table on second page) has been compiled by the DCC and sent to sites. Note, events/complications reported on the Surgeon's Medical Assessment form or the Health Care Utilization form are not included on the DCC list of self-reported events/complications since assessment may have been based on a clinical exam or medical records rather than self-report. .

It is mandatory that all coordinators refer to the DCC list of self-reported events/complications when administering the EC form. The list is to be used to stimulate a participant's memory. For example, if the event/ complication list shows that a participant reported kidney stone symptoms at the 24-month visit, the coordinator should use this information during the form administration by saying something like, "you previously reported that you had kidney stone symptoms during our 24-month visit. "Can you please tell me the date this occurred?"…"Has this also happened at another time?" If the participant denies that the event happened, after some gentle probing, the coordinator should report "no" on the EC form and continue to the next item.

Notes:

- For items in which the participant denies that an event or complication happened, even though it was reported on a self-assessment form at a previous visit – do not update the previous self-assessment form.

- Information obtained in medical records CANNOT be used to assist in probing for responses.

If it is not possible to complete the EC form over the phone or at the in-person visit, and as a last resort it is mailed to the participant, along with the Event and Complication cover letter (example letter included on next page). Based on the list of previous reported events and complications that was provided by the DCC in in September, 2013 the coordinator must list the appropriate items at the end of the cover letter in order to refresh the participant's memory that a specific event(s) was previously self-reported.

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

Table that maps EC question to the form that the participant may have previously reported the event/complication.

EC form	**Form that participant previously reported the event/complication.**
Did you have your gallbladder removed after your first bariatric surgery?	MAF: In the **past 12 months,** have you had surgery to remove your gallbladder?
After surgery, were you told by a medical professional that you have diabetes or have started taking medication for diabetes?	MAF: Do you **currently** have diabetes? Are you **currently** taking medications for diabetes? SHORT: Do you **currently** have diabetes?
Heart attack	MAF: In the **past 12 months**, have you been told by a doctor or other health professional that you had a myocardial infarction or heart attack? SHORT: been told by a doctor or other health care professional that you had a myocardial infarction or heart attack
PCI	SHORT: had a percutaneous coronary intervention? (i.e., angioplasty, stent placement)
BYPASS	SHORT: Had coronary artery bypass graft (CABG) surgery?
Since your first bariatric surgery have you been diagnosed with cancer?	CD: Have you **ever** been told by a medical professional that you have cancer*?* CDF: **Since bariatric surgery**, have you been told by a medical professional that you have cancer*?* CDFM: **In the last 12 months,** have you been told by a medical professional that you have a NEW cancer*?*
Since your first bariatric surgery have you been hospitalized for a psychiatric problem?	PETSF: **In the past 12 months,** have you been admitted to a hospital (including partial hospitalization or day hospital treatment) for treatment of psychiatric or emotional problems?
…Did it involve suicidal thinking or behaviors?	PETSF: What was the most recent psychiatric or emotional problems you were treated for in a hospital? Were you treated for any other psychiatric or emotional problems in a hospital?
…Did it involve alcohol or drug abuse?	PETSF: What was the most recent psychiatric or emotional problems you were treated for in a hospital? Were you treated for any other psychiatric or emotional problems in a hospital?
Since your first bariatric surgery, have you undergone dialysis	SHORT: In the past 12, month, had any on-going health care such as chemotherapy or dialysis?
Since your first bariatric surgery, have you had symptoms that a medical professional told you were caused by kidney stones?	MAF: In the **past 12 months,** have you had a kidney stone?
Since your first bariatric surgery, have you had plastic surgery because of your bariatric surgery?	ESS: **Since having bariatric surgery** have you had contouring surgery on your **upper arms, back, etc…**
Since you first bariatric surgery, have you been pregnant?	RHF: Are you **currently** pregnant? In the **past 12 months**, have you had any pregnancies **end** (due to miscarriage, ectopic or tubal pregnancy, abortion, still birth or live birth)?

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

Cover letter for the Events and Complications (EC) form

We are asking you to complete a brief new form, the Events and Complications (EC) form, which asks about major changes to your health that may have occurred since your surgery. Please mark whether these events have occurred, and if so, when they happened.

We have created a list of some of the health events that you have already told us about at previous study visits, to help you fill out this new Events and Complications form.

Please note:

- You may not have previously reported an event or complication because it did not occur within the time frame specified on a previous survey (e.g., in the past 12 months).
- The Events and Complications form includes some events/complications that we have not asked you about previously (e.g. if you've had a stroke).
- Unlike previous forms, the Events and Complications form assesses the dates of events and complications.

Event/complication previously reported following primary bariatric procedure on ___ /___/_____	Visit when reported
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __
	__ __ __ __

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #35

DATE: September 26, 2014

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Adverse / Severe Adverse Event Reporting

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

As a reminder, the Safety Subcommittee identified the following categories for potential adverse events:

1. 400 meter corridor walk
2. Stepwatch Activity Monitor
3. Environmental (e.g., falling at a research visit)
4. Blood draw
5. Physical measures
6. Other (e.g., breach of confidentiality)

An adverse event must be reported if a causal relationship between an event and the research cannot be ruled out by the investigator(s). Only adverse events that arise from a LABS research-related activity are reportable

If the adverse event is determined to be a Serious Adverse Event* in addition to the AE form, complete a mandatory SAE form and fax it to Rocco Mercurio at the Data Coordinating Center within 24 hours of finding out about the event @ 412 624-5268. Follow the detailed instructions in the SAE QxQ's.

A ***Serious Adverse Event* *is defined as meeting one or more of the below bulleted list:*

- *fatal or life-threatening*
- *requires or prolongs hospitalization*
- *produces a significant or permanent disability*
- *results in a congenital anomaly/birth defect.*

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

LABS-2
OPERATIONS MEMO #36

DATE: September 26, 2014

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Adverse / Severe Adverse Event Reporting

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

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- *fatal or life-threatening*
- *requires or prolongs hospitalization*
- *produces a significant or permanent disability*
- *results in a congenital anomaly/birth defect.*

LABS-2
OPERATIONS MEMO #35

DATE: September 12, 2014

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Completing the Abdominal Surgery Classification (ASC) form

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LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

The Abdominal Surgery Classification (ASC) form was designed to classify and provide details of participants' abdominal surgeries, other than gallbladder removal, since their initial LABS-2 bariatric surgery.

Abdominal surgeries were identified by participant report on question 1, page 3 of the Events and Complications (EC) form. The DCC provided sites with a list of participants who answered 'yes' to the question "Since your first bariatric surgery, have you had abdominal surgery other than gallbladder removal?", and requested that the site obtain the following medical documents that pertain to the event: history & physical; operation note(s); discharge summary; other medical record document(s) that may provide details of the event. If medical documentation can NOT be obtained directly from the hospital at which treatment was provided, an attempt should be made to collect documentation by contacting the participants' primary doctor's office or other specialist (if consent provided) to obtain lab results, diagnostics exams, post-operative notes, etc., that may be able to provide details of the event. *If the event is known to be a Cesarean section or a Tubal Ligation, the ASC can be completed without medical records.*

Primary Investigators or designated surgeon(s) should complete the ASC form in its entirety. Items required to be answered include: 1. If documentation was collected, 2. Reason for abdominal surgery; 3. Timing (elective or emergent/urgent); 4. The *primary* procedure; 5. The approach to the procedure; 6. The reviewer's level of certainty of the procedure; 7. Relatedness of the procedure to the initial bariatric surgery. If any of items cannot be assessed/determined per the documentation, it should be noted on the form that the item is 'unknown.'

LABS-2
OPERATIONS MEMO #37

DATE: May 13, 2015

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Further instructions for completing the Abdominal Surgery Classification Form (ASCF)

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

The Abdominal Surgery Classification form (ASCF) is designed to determine surgeries and their relatedness to a LABS-2 bariatric surgery. Participants report abdominal surgeries (other than gallbladder removal / cholecystectomy) via the Events and Complications (EC) form. If proper release was obtained, medical records were requested and reviewed by the site PI and the ASCF was completed based on this information. Note that the LABS study collected detailed information on revisions, reversals and other subsequent bariatric procedures. The ASCF was not designed to provide complete information on subsequent bariatric procedures but, rather, to determine complications and relatedness to the primary bariatric surgery of all self-reported abdominal surgeries. However, if there was a report of a bariatric procedure not previously reported, then the appropriate subsequent bariatric surgery forms are to be completed.

Some reported surgeries will include concurrent procedures. An ASCF is to be completed for each concurrent procedure (record the procedure under "primary" procedure). In this way, all procedures will be noted and included in the database.

The medical record may include additional abdominal surgeries that were not reported by the participant on the EC form. When a participant had procedure(s) not reported by the participant that are part of a sequence of surgeries, or otherwise related to the reported surgery, then these surgeries are also to be reported. For example, a participant reported an abdominal surgery November, 2009 on the Event and Complication form (EC). After requesting medical records, the documentation reported an operation for septic wound care after a panniculectomy. The date of the panniculectomy was September, 2009 and was performed at a different institution than the participant reported. If in the judgment of the PI, the septic wound care was the result of the panniculectomy, then documentation for the panniculectomy should be obtained (if there is proper authorization to do so) and the ASCF completed. This may require that additional medical records be requested. All "related" surgeries are to be reported on ASCFs. However, if the PI considers a surgery to not be related to the self-reported surgery, no further action is needed.

LABS-2
OPERATIONS MEMO #38

DATE: May 28, 2015

TO: LABS CLINICAL CENTERS

FROM: LABS DATA COORDINATING CENTER

RE: Reporting abdominal Surgeries based on the Health Care and Health Care Utilization forms

*This memo should be placed in the appropriate section of the **LABS-2** Manual of Operations. If you notice at any point during the study that your memos are not in consecutive order, please contact the LABS Data Coordinating Center to obtain the memo that is missing or print it from the LABS website.*

LABS-2 Operations Memos may be found under the Researchers Section of the LABS website http://www.edc.gsph.pitt.edu/labs/Research/Documents/LABS-2/OperationsMemos/.

On May 26, 2015, the Data Coordinating Center generated lists of procedures reported on the Health Care (HC) and Health Care Utilization (HCU) forms that could possibly be reported on the Abdominal Surgery Classification Form (ASCF). The lists were sent to sites and are to be used to classify abdominal surgeries that were not already reported on the Events and Complications (EC) form. Sites should review the list and determine if the procedure should be reported on the ASCF. To do this, the following instructions should be followed:

HOW TO DETERMINE IF A PROCEDURE SHOULD BE REPORTED ON THE ASCF

1. Review the list and determine if the procedure should be reported on the ASCF.
    a. Confirm that the procedure was 'self-report' on the HC / HCU. You can best judge how to do this at your site. In case it is helpful to your site, 2 variables for each procedure were included with the list:
        i. whether patient self-report was marked on the HCU (i.e., Yes if source of information was "patient in person," "patient by telephone," or "patient representative.")
        ii. whether reason for treatment or procedure were marked as confirmed by medical records on the HC or HCU.
    b. The procedure must be an abdominal surgery, other than gallbladder removal.
    c. Confirm that the procedure was not already reported on an ASCF form.
2. For all procedures identified, obtain pertinent medical documentation if not already obtained.
3. Once steps 1 and 2 are complete, PI should complete ASCF's for each procedure.

IN THE HEADER OF THE ASCF…

1. Record the admission / treatment date reported on the HC / HCU form In the field "Date of Abdominal Surgery (as reported on the EC form)".
2. The Event number should be not applicable.

The Longitudinal Assessment of Bariatric Surgery (LABS)

Adjudication Committee Handbook

Table of Contents

I. LABS Adjudication Chair

Committee membership and contact information removed

II. LABS Adjudication Committee Members

Committee membership and contact information removed

III. Ex-Officio Members

Committee membership and contact information removed

IV. Data Center Contacts

Committee membership and contact information removed

V. Statement of Purpose

The purpose of the LABS Adjudication Committee (AC) is to periodically review and classify deaths and unconfirmed reasons (causes) for: (i) surgical re-operations; and (ii) unplanned post-discharge anticoagulation therapies recorded in LABS using information provided through the LABS Data Coordinating Center (DCC). This adjudication process is conducted to accurately classify patient events for subsequent analyses as part of the LABS project. All findings and decisions of the AC are confidential. Data, masked with respect to patient and medical staff (physician, surgeon, clinical center, etc.) are sent to the DCC from the clinical center at which the death or event with unconfirmed reason (cause) occurred. The DCC forwards the data, along with a summary of LABS data to two initial AC reviewers, neither of which will be from the same site at which the event occurred. These committee members then return their determinations to the DCC following their review, within two weeks of receipt. The DCC may also present this data to two initial AC reviewers at face to face AC meetings, which are held at LABS Steering Committee meetings, where the committee member immediately returns their determinations. The resulting outcome data are used to prepare monitoring reports for review by the LABS Data Safety Monitoring Board, and to report endpoint results.

The AC meets at Steering Committee meeting, or at the request of the DCC. Minutes of each meeting are prepared by the DCC staff. The committee consists of 10 members, two members from the DCC, and one from the NIDDK. Each member is appointed for the duration of the study.

The specific functions of the AC are as follows:

1. To develop criteria for classification of cause of death, and determination of the reasons (causes) for LABS-1 recorded surgical re-operations and unplanned post-discharge anticoagulation therapies.
2. To review and classify the underlying cause of all deaths.
3. To review and classify the underlying reason(s), not confirmed at the clinical site, for the occurrence of post-bariatric surgical operations and/or unplanned post-discharge anticoagulation therapy.

VI. General instructions for Adjudication Committee (AC) Member Review

1. Files received contain confidential data and must be kept in a secure place.
2. For each event to be classified, a **patient packet** is enclosed (*Patient Summary and mortality or event with unconfirmed reason form, prepared by the DCC*)**.**
3. Review each patient's file and make a determination by completing the form. To assist with your determination, you may consult with a surgeon or other health professional to gain insight on medical and surgical issues at large, but not to share any specific characteristics of the case.
4. Retain the patient file and a copy of the form in a secure location in case classification disagreements arise and require discussion.
5. **Forms** should be returned to the DCC within two weeks, unless the review is conducted at an in person AC meeting in which forms are returned to the DCC immediately. Please destroy the copies of the medical charts you were working from.

VII. Description of Patient Packet

Each packet will contain confidential, masked material about the patient. There are two types of packets:

1. Mortality Packet

a. Mortality Data Form
b. Serious Adverse Event Report (if applicable)
c. Principal Investigator's Death Report (if available) - in the event of no information being available for a death, the PI may write a report of information obtained by speaking to the surgeon or other verbal communications to assist the reviewers.
d. Relevant hospital and procedural reports – all dictated hospital report records including: history and physical, operative and procedure notes, discharge summary
e. Death Certificate (if available)
f. Coroner's Report (if available) – Autopsy report (from coroner) and Autopsy data form

g. Patient Summary Report, including: demographics (i.e. gender), pre-surgery anthropometrics and risk factors (i.e. BMI, smoking), prior obesity surgeries, pre-surgery comorbidities (i.e. diabetes, CHF), classes of medications used pre-surgery (i.e. statins), surgical characteristics (i.e. type of surgery performed), evaluation from most recent clinic visit (i.e. medications, anthropometrics, lab results), and surgical procedures and adverse events since the index bariatric surgery. This information will be forwarded by the Data Coordinating Center.
h. Additional information, as requested and deemed necessary by the committee.

2. Event with Unconfirmed Reason (Cause) Packet

a. Reason for Unconfirmed Intervention Form
b. All dictated hospital report records including: history and physical, operative and procedure notes, discharge summary
c. Operative notes
d. Discharge summary
e. SAE report, if applicable
f. Report of information obtained by verbal communications with surgeon, or other source of information that is not documented in writing.
g. Patient Summary Report, including: demographics (i.e. gender), pre-surgery athropometrics and risk factors (i.e. BMI, smoking), prior obesity surgeries, pre-surgery comorbidities (i.e. diabetes, CHF), classes of medications used pre-surgery (i.e. statins), surgical characteristics (i.e. type of surgery performed), evaluation from most recent clinic visit (i.e. medications, anthropometrics, lab results), and surgical procedures and adverse events since the index bariatric surgery. This information will be forwarded by the Data Coordinating Center.
h. Additional information, as requested and deemed necessary by the committee.

VIII. Process of Adjudication.

Events are identified at the time of a data freeze, which is generally during the first week of each month. After identification, documentation is immediately requested from the site at which the event occurred. The site has two (2) weeks to return the documentation to the DCC. There may be a time extension when medical records or autopsy reports are not immediately available. Upon receipt, the DCC will prepare a summary of LABS data for the particular patient, copies of hospital/medical documentation and the relevant adjudication form.

When no more than five (5) event packets are ready, they are distributed for adjudication to two (2) member of the AC. If there is an upcoming Steering Committee Meeting planned, these cases may be reviewed by two (2) members of the AC at an in person AC meeting instead of being mailed. None of the members selected for review will be from the same institution in which the event to be adjudicated originated. The reviewers are to return their determination to the DCC within two (2) weeks of receipt. The DCC should be notified immediately if further documentation is required. If there is unanimous agreement among the two (2) members, the event will be considered adjudicated. Unanimous agreement is defined as either: (i) rating of **definite** or **probable** level of certainty for the same primary cause assigned by both members; or (ii) rating of **less than probable** cause by both members. If there is not unanimous agreement among the two (2) members, the DCC will assist the two (2) members discussing the difference of opinion to resolve if possible. If unanimous agreement is still not reached, the event will be considered discrepant.

Discrepant cases will be reviewed by an Adjudication Resolution Committee (ARC). The ARC will consist of three (3) members of the AC, chosen on a rotating basis, or chosen from the available members of the AC that are present at the Steering Committee Meeting. The members of the ARC will not have been one of the initial two (2) reviewers of the discrepant case or from the same institution in which the event to be adjudicated originated. A copy of the original event packet and the discrepant adjudication forms will be sent to the ARC to prepare for a teleconference to be scheduled by the DCC as needed. If the ARC is in unanimous agreement with one of the two initial reviewers, the event is considered adjudicated. If the ARC is not in agreement with either of the two initial reviewers or is not able to reach a unanimous decision, the event will remain discrepant and be discussed among the available AC member during a teleconference. At least five (5) AC members must be present for the teleconference to be valid. In the event of a voting tie (i.e. 4-to-4 vote), the Adjudication Committee Chairman will cast the final vote required for determination.

IX. Patient Summary Report Form – PROPOSED FORMAT

LABS
ADJUDICATION COMMITTEE
PATIENT SUMMARY REPORT FORM

1.	**Identifying Information**	
	a. LABS ID (*without Site ID*)	nnxxxxx
	b. Event for adjudication	Death or event with unconfirmed cause
	c. Date of event	mm/dd/yyyy
2.	**Patient Demographics**	
	a. Date of birth	mm/dd/yyyy
	b. Age at surgery	nn
	c. Gender	Male/Female
	d. Race	American Indian/Asian/African American/ Pacific Islander/White
	e. Hispanic	Yes / No
3.	**Pre-Surgery Data**	
	a. Weight prior to surgery	nnn
	b. BMI	nn
	c. Smoking status	Current/Former/Never
	d. Prior obesity surgery	If Yes, specify type of surgery
	e. Planned procedure	Gastric bypass (Roux-en-Y)/ Biliopancreatic diversion (BPD)/ Biliopancreatic diversion with Doudenal Switch (BPDS)/ Laparoscopic adjustable gastric band (LAGB)/ Sleeve gastrectomy-initial stage/ Sleeve gastrectomy/ Other/ Unknown
	f. Planned approach	Laparoscopic/ Other/ Unknown
	g. Pre-surgery comorbidities	List all pre-surgery comorbidities (i.e. diabetes, CHF, etc.)
	h. Medications in past 90 days	List all classes of medications used (i.e. statins)
4.	**Surgical Characteristics**	
	a. Date of surgery	mm/dd/yyyy
	b. Length of hospital stay	nn
	c. Type of surgery	Gastric bypass/ Biliopancreatic diversion (BPD)/ Biliopancreatic diversion with Duodenal Switch (BPDS)/ Adjustable band/ Sleeve gastrectomy – initial stage/ Sleeve gastrectomy – second stage
	d. Approach	Laparoscopic/ Laparoscopic converted to open/ Open
	e. Anesthesia risk classification	Stage I / Stage II / Stage III / Stage IV
	f. DVT prophylaxis administered	Yes (specify) / No
	g. Concurrent procedure(s)	Yes (specify) / No
	h. Intraoperative event(s)	Yes (specify) / No
5.	**Post-operative evaluation (30 days)**	
	a. Discharge location	Home/ Rehabilitation facility/ Skilled nursing facility/ Other hospital/ Was not discharged
	b. Re-hospitalized after discharge	Yes / No
	c. # times rehospitalized	Nn
	d. Re-hospitalized cardiac event	Yes / No
	e. Post-bariatric operation(s) (and suspected reason)	Yes (reason) / No
	f. Post-op anticoagulation treatment	Yes (specify) / No
	g. Other types of re-admission (and suspected reason)	Yes (specify) / No

Sections

Section 1: Overview Remote Visit to Enhance Retention

Section 2: Participant eligibility criteria for a remote visit & components of a remote visit.

Section 3: Contacting the DCC once the participant meets eligibility criteria of the remote visit.

Section 4: Contacting the participant to confirm willingness and best time for EMSI to call.

Section 5: Contacting EMSI to schedule the remote visit

Section 6: The EMSI remote visit

Section 7: After the remote visit

Forms

Form 1: DCC Contact Request Form

Form 2: EMSI Request form – UPITT LABS

Form 3: EMSI version of the Research Coordinators Assessment Follow-up.

Form 4: Central Lab Specimen Log

Form 5: Biosample Repository Log

Form 6: Adverse Event Form

Form 7: Severe Adverse Event Form

Form 8: LABS Phlebotomist Checklist

Form 9: Example Thank You Letter

Section 1: Overview, Remote Visit to Enhance Retention and Justification

Overview, Remote Visit to Enhance Retention

To enhance retention, LABS coordinators may utilize Examination Management Services, Inc. to conduct remote study visits. The field representative from Examination Management Services, Inc. will be a trained healthcare professional, subject to confidentiality rules and will be required to become certified on the LABS protocol prior to performing a subject visit. LABS participants who agree to a remote visit will sign an addendum consent form to indicate their permission to provide data to EMSI.

The EMSI representative will be responsible for obtaining weight and physical measurements (waist and neck circumferences) and biospecimens including blood and urine. The EMSI representative will transmit collected data and biospecimens back to the originating clinical center for data entry and biospecimen processing. If a participant has completed the self-assessment forms or currently has a StepWatch Activity Monitor, the EMSI representative can collect these items in the study-provided SASE and drop them in any USPS mailbox for return to the clinical site.

In the event of an adverse event or unexpected problem during the visit, the EMSI examiner must report it to EMSI National Service Center (NSC) immediately by phone. EMSI NSC will notify the site coordinator and DCC central study coordinator immediately.

Justification

To enhance retention, the LABS protocol is being modified to allow an outside service provider, Examination Management Services, Inc. (EMSI) to conduct visits with LABS participants away from the clinical center. At these visits, the EMSI field representative will collect study data collection forms, obtain weight, physical measurements and biospecimens. Since the visit will not be at a medical facility, the full blood draw at these visits could become overly burdensome. Therefore, the LABS Steering Committee has agreed that the EMSI will collect 10mL less than the usual LABS blood draw (55.5mL). This reduction in the blood draw amount will not affect any LABS analysis but may mean that there will be less specimen available in the NIDDK Repository for future studies. The LABS Steering Committee agreed that other parts of the LABS protocol, such as the corridor walk, could not be administered in a standardized fashion at a home visit. Since the lack of standardization could affect data integrity, it was agreed that this component of the study would be waived for the EMSI visit. To ensure consistency across remote visits, the EMSI rep will become certified on the abbreviated LABS protocol prior to conducting the visit, including how to handle any adverse events that may arise during the visit.

The EMSI representative will be covered by a confidentiality and data use agreement to ensure that participant confidentiality will not be breached.

In line with the protocol amendment, an addendum consent form has been created for participants to sign as permission that they allow staff from EMSI to collect their data. Please notify the DCC if your site does not require anaddendum consent so that it can be documented accordingly.

Section 2: Participant eligibility criteria for a remote visit & components of the remote visit

A. Participant eligibility criteria for a remote visit:

In order for a participant to meet eligibility criteria for a remote visit, the below conditions must be met of the participant. If any of the questions below are answered "no," the participant should NOT be considered to be a candidate for a remote visit.

1. Was the participant consented to LABS-2?
2. Is the participant unable or unwilling to take part in an in-person visit, due to significant hardship or the inability to otherwise be scheduled for an in-person visit (e.g. – the participant has moved away from the originating clinical center)?
3. Did the participant agree to have a blood draw attempted and have physical measures collected?
4. If applicable, is the participant willing to provide written consent to participating in a remote visit?
5. Will it be more than 6-weeks before the extended window closes for this time point?

B. Components of the remote visit:

EMSI
Physical measures
- Blood pressure
  Tanita weight
- Neck and Waist Circumference
- Questions 3 – 5.2 on the EMSI version of the Research Coordinators Assessment Follow-up (RCAFM)

Partial blood sample collections
- Central labs: hba1c (2ml), lipid profile/creatinine (3ml), crp/cystatin (.5ml), insulin (.5ml), albumin/creatine (2.5ml).
- Repository: ten .5ml cryovials plasma/ ten .5ml criovials serum, four .5ml urine cryovials.

Coordinator

- Phone interview for: Modified Activity Questionnaire (MAQ), Surgeons Medical Assessment Follow-up (SMAF), Beck Depression Inventory (BDI), Suicide Behavior Questionnaire (SBQF), Health Care Utilization (HC), if applicable
- Send out Self-Assessment forms with SASE.
- Send out StepWatch Activity Monitor with padded envelope for return.

Section 3: Contacting the DCC once the participant meets eligibility criteria for the remote visit.

Sites are required to contact the DCC, using the DCC Contact Request Form (Form 1), after a participant has met the eligibility criteria for a remote visit. The DCC must authorize scheduling the remote visit before EMSI can be contacted. The primary reasons for this contact are so that the DCC can monitor and facilitate remote visits.

The DCC will review the DCC Contact Request Form and respond via fax or e-mail within 2 working days to acknowledge receipt of the form and notify you whether this participant is being added to the waiting list for EMSI visits.

Potential reasons why the DCC will decline authorizing a remote visit:

- Too many requests are made in a short period of time
- Participant's window has not opened yet
- If any of the eligibility criteria is unknown
- Participant does not meet all of the eligibility criteria
- The budget is used up

You may view the waiting list on the research web site under the EMSI folder. It will be updated on a weekly basis to reflect any visits that have occurred during that week. The DCC will notify you when EMSI is able to contact your participant for a potential visit.

Section 4: Contacting the participant to confirm willingness and best time for EMSI to call.

Once the DCC authorizes a remote visit with the site, the site must contact the participant to inform them that EMSI will be calling them soon to set up a visit. At this time, the following must be done.

1. Request a range of times from the participant when the EMSI field representative can call to schedule the visit.

2. Request a range of times when the MAQ, SMAF, BDI, SBQF, and HCU (if necessary) can be completed. Note that if the participant is willing, and both the BDI and SBQF intervention protocols can be followed, then the phone interview, can be completed immediately.

3. Prepare the self-assessment packet of forms. This will be done by the site to assure that the most current version will be used.

4. Program a Stepwatch Activity Monitor (SAM) and Diary form. Note that the site should continue to follow the hierarchy procedure to disperse SAMs.

5. Complete Form 2 EMSI Request Form

Special note: The site is required contact the participant via phone to review how to wear the SAM and complete the diary on the day of arrival. For efficiency, try to schedule at the same time as the phone visit.

Section 5: Contacting EMSI to schedule the remote visit.

Once the DCC authorizes the visit, it is the responsibility of the site to notify EMSI to schedule the visit. The site must complete Form 2: EMSI Request Form UPITT LABS

1. EMSI central coordinating center will confirm receipt of the request form (with the site coordinator) and contact a field representative who covers the vicinity where the participant is located. The central office must notify the site coordinator to confirm that a field coordinator is available and willing to schedule the remote visit. If you do not hear from EMSI to confirm receipt of your e-mail in one business day, please e-mail them again.

2. EMSI central coordinating center will train the field representative to follow the LABS protocols. The field representative will schedule the remote visit according to the EMSI call protocol. **The visit must be scheduled more than 4 weeks away from the window close date to allow time for preparation of the visit.** Once the visit is scheduled, the field representative will notify EMSI's central coordinator.

3. EMSI's central coordinator will email the site and the DCC with the specific information regarding the plans for the scheduled remote visit and will be responsible for documentation of all communication regarding the visit. The data forms and files for these visits will be kept confidential and track-able for compliance with Good Clinical Practices and regulatory standards.

4. The DCC, the site coordinator, and the central coordinator will collaborate with the field representative to facilitate scheduling and completion of the remote visit.

   <u>The site coordinator must</u>:
   - Mail the packet of self-assessment forms, the SAM and Diary, and the addendum consent within 2 business days of EMSI's confirmation that the visit can be scheduled.
   - Complete the phone interview to collect data for the MAQ, SMAF, BDI, SBQF and HCU.

   <u>The EMSI central must prepare and send to the field representative</u>:
   - Equipment (Tanita scale, Gullick tape measure) for physical measures, along with the EMSI version of the RCAF (Form 3).
   - Blood draw kits to the field represent.
   - Folder so that the field representative can store the data forms.

   <u>The DCC must</u>:
   - Maintain a log to track scheduling and completion of visits.

5. Prior to the EMSI remote visit the field representative must call the participant confirming the visit appointment. If the visit date has changed or the participant no longer wants the visit to be scheduled, then the field coordinator must notify central EMSI coordinating office. The EMSI central coordinating office must notify the site and the DCC.

Section 6: The EMSI Remote visit.

Once the site receives notice that the visit is scheduled, the self assessment forms, the SAM and diary, and the addendum consent must be mailed to the participant. The EMSI central office will prepare the equipment for the physical measures (Tanita scale, Gullick tape), the EMSI version of the RCAF, the kits for the blood draw, and the Phlebotomist Check Sheet, and mail them to the field representative.

When the field representative arrives at the remote visit:

1. The physical measures are taken according to their protocols and the information gets recorded on the EMSI version of the RCAF. At this time the field representative completes the reminder of the EMSI version of the RCAF (Form 3).

2. The blood draws are completed and processed according to protocol. The Central Lab and Biosample Repository Logs must be completed at this time. (Forms 4 and 5)

3. If there is a serious adverse event, the field representative must notify the EMSI central office, the DCC and the site coordinator **immediately** via telephone so that the appropriate response can be taken. Adverse Events should be reported to EMSI central office and then captured on the Adverse Event (AE) form and the Severe Adverse Event (SAE) forms (Forms 6 and 7).

4. Administers any emergency care procedures, if arises, and reports emergency action plans, and results, to the EMSI central office, the DCC and the site coordinator via telephone.

5. At the end of the visit, the EMSI field representative will complete the Phlebotomist Checklist Sheet (Form 8). The self-assessment forms are collected from the participant with the return envelope sent by the coordinator. If the participant didn't do, or didn't finish the packet, then the field representative requests that they are done at a later date. If the Stepwatch Activity Monitor (SAM) was sent to the participant, and it was worn according to instructions, the field representative collects this in its padded envelope and drops it off at any USPS mailbox.

7. The thank-you letter is given to the participant (Form 9).

8. Prepares all documents and samples to be shipped to the originating site. Packs the Tanita scale and tape measure in the black corrugated shipping box and returns it to EMSI central offices.

9. Notifies the central office, so that the central office can notify the DCC and site can be informed that the visit was completed.

Section 7: After the remote visit.
Once the remote is complete:

EMSI central office responsibilities:

- Forward all documents and samples to site.
- Return Tanita Scale and Gulick tape measure to EMSI central offices.

DCC responsibilities:

- Following the home visit, the DCC will be notified of completed home visit by EMSI headquarters.
- Track receipt of laboratory shipments to the originating clinical site.
- Record emergency action plans and any AEs encountered by home EMSI during visit to DSMB as appropriate.

The site coordinator does the following after the remote visit:

- Phone follow-up with study participant to insure satisfaction with the visit within 24-hours of notification of the completed visit.
- Receives shipment with forms from remote visit sent by EMSI, opens it immediately upon receipt, and reviews and enters required documents into the database.
- Receives shipment with specimens. Removes specimens from unmarked Revco box and adds them to stored freezer boxes. Records the freezer box number and visit on logs according to protocol.
- Complete the OTTprotocol form if any components of the remote visit was not done.
- Enters all data to DCC per standard operating procedures. The Coordinator should fill in the Visit number on the RCAF.
- Follow-up with participant on results of any emergency action plans and AEs within one week of notification of event. This must be documented and kept in the participant's research file.
- Report to DCC any emergency action plans executed and AEs encountered by EMSI on appropriate form(s); determine if any such events rise to level of local IRB reporting the same day that site notified of event. This must be documented and kept in the participant's research file.

DCC Contact Request Form for EMSI Remote Visit– Version: 1/1/2011

Patient ID __ __ __ - __ __ __ __ - __ __ **Request Date** __ __ / __ __ / 20 __ __
mm dd yy

To be completed by the site
(Part 1)

1. Site: _____

2. LABS personnel/certification # requesting remote visit: _____ ___ ___ ___ ___ ___
(name) (certification number)

3. Visit: _____

4. Surgery date: __ __ / __ __ / 20 __ __

5. Extended window close date: __ __ / __ __ / 20 __ __ *(must be at least 6 weeks after request date)*

	No	Yes
6. Was the participant consented to LABS-2?	☐	☐
7. Is the participant unable or unwilling to take part in an in-person visit, due to significant hardship or the inability to otherwise be scheduled for an in-person visit?	☐	☐
8. Did the participant agreed to have a blood draw attempted and physical measures?	☐	☐
9. Is the participant willing to provide written consent to participant in a remote visit?	☐	☐
9. Is the request date 6-weeks before the extended window closes for a visit?	☐	☐

10. Why is the participant unable or unwilling to take part in an in-person visit?
_____
_____

To be completed by the DCC and faxed back to the site within 2 business days of date request received by the DCC
(Part II)

1. Date request received by the DCC: __ __ / __ __ / 20 __ __
mm dd yy

2. DCC response:
☐ 1. Contact EMSI
☐ 2. Do **not** contact EMSI →

2.1 Specify reason why this participant should not be contacted:
_____
_____

3. Date response faxed to site: __ __ / __ __ / 20 __ __
mm dd yy

EMSI Service Request Form
Bracco "CIN Markers"
Protocol IOP-116, IOP-117, IOP-118

PARTICIPANT ID	PARTICIPANT FIRST NAME	PARTICIPANT LAST NAME	PARTICIPANT ADDRESS (first line)	PARTICIPANT CITY	PARTICIPANT STATE	PARTICIPANT ZIP	VISIT TYPE (36 month, 48 month, etc.)	Must be seen before	PARTICIPANT PHONE PRIMARY (please only numeric characters in this field, no dashes, no spaces, etc.)	PARTICIPANT PHONE SECONDARY (please only numeric characters in this field, no dashes, no spaces, etc.)

Entered: _ _ / _ _ / 20_ _ Initials: _____ Verified: _ _ / _ _ / 20_ _ Initials: _____

For office use only.

Research Coordinator Assessment Follow-up – Version: 6/1/2013

Patient ID __ __ __ - __ __ __ __ - __ __ **Form Completion Date** __ __ / __ __ / 20 __ __
mm dd yy

Certification number: 88888 **Visit: _____**

1. Measurements: Date of when physical measures were taken: __ __ / __ __ / 20 __ __

1.1 Weight: ___ ___ ___ (lb) → How was weight measured? □ 1. Tanita Scale → (Percent Body fat: [redacted] % *Enter -5 for body fat into the database.*)

[redacted]

1.2 How was weight reported?

[redacted]

□ 5. Other (specify: EMSI FIELD REPRESENTATIVE)

1.3 Blood Pressure: __ __ __ / __ __ __ (mmHg)
(systolic) (diastolic)

1.4 Resting Heart Rate __ __ __ (bpm)

1.5 Waist circumference: *Record the first two measurements. If they are not within 2 cm of each other, record a third measurement.*
___ ___ ___ . ___ (cm)
___ ___ ___ . ___ (cm)
___ ___ ___ . ___ (cm) *record only if first two are not within 2 cm of each other.*

1.6 Neck circumference: *Record the first two measurements. If they are not within 2 cm of each other, record a third measurement.*
___ ___ ___ . ___ (cm)
___ ___ ___ . ___ (cm)
___ ___ ___ . ___ (cm) *record only if first two are not within 2 cm of each other.*

2. Did the participant meet with any members of the bariatric surgical team the same day as the research visit? □ 0. No □ 1. Yes

Ask questions 2 - 4 if this is a ***post-operative visit only***.

3. **In the past 12-months**, have you resided in a care facility (for example: personal care home, rehab facility, long-term care facility, assisted living)? *If someone was discharged to one of these facilities only mark "yes" if they went home and then subsequently entered a facility.* □ 0. No □ 1. Yes

If yes,
3.1 Did you reside in a care facility **in the past 6-months**? □ 0. No □ 1. Yes
3.2 Do you currently reside in a care facility? □ 0. No □ 1. Yes

4. **In the past 12-months,** have you had a revision or reversal of your bariatric procedure? □ 0. No □ 1. Yes

Entered: _ _ / _ _ / 20_ _ Initials: _____
mm dd yy

Patient ID __ __ __ - __ __ __ __ - __ __ **Visit:____**

Central Lab Specimen Log (CSPEC) –Version 10/28/2005

1. Was the 2.0 mL Purple-Top Draw done? ☐ Yes ☐ No **(Goto Question 2)**

HbA1C	**Draw date (mm/dd/yyyy)**	**Draw time (military hours)**	**Volume**	**Freezer Box**
	__ __ / __ __ / 20 __ __	**__ __ : __ __**	**___ . ___ mL**	
Comments:				

2. Was the 8.5 mL Tiger-Top SST Draw done? ☐ Yes ☐ No **(Goto Question 3)**

Lipid Profile/Creatinine	**Draw date (mm/dd/yyyy)**	**Draw time (military hours)**	**Volume**	**Freezer Box**
	__ __ / __ __ / 20 __ __	**__ __ : __ __**	**___ . ___ mL**	
Comments:				
CRP/Cystatin			**___ . ___ mL**	
Comments:				
Insulin			**___ . ___ mL**	
Comments:				

3. Was the urine obtained? ☐ Yes ☐ No **(Goto Question 4)**

Albumin/Creatinine	**Sample date (mm/dd/yyyy)**	**Sample time (military hours)**	**Volume**	**Freezer Box**
	__ __ / __ __ / 20 __ __	**__ __ : __ __**	**___ . ___ mL**	
Comments:				

4. If Question 1, 2 or 3 is YES, record the date/time that the patient last ate or drank (other than water):

___ ___ / __ __ / 20 ___ ___ ___ ___ : ___ ___ (military time)
mm dd yy hh mi

Entered: _ _ / _ _ / 20_ _ Initials: _____
mm dd yy

Patient ID __ __ __ - __ __ __ __ - __ __ **Visit:____**

Repository Specimen Log (RSPEC) –Version 08/09/2005

Blood Draw Date __ __ / __ __ / 20 __ __
mm dd yy

SERUM: Was all ***serum*** obtained (20 x 0.5 ml)? □ Yes □ No					**PLASMA:** Was all ***plasma*** obtained (20 x 0.5 ml)? □ Yes □ No			
Vial	**Serial code**	**If not all serum obtained, record volume (ml) for each vial**	**Freezer box #**		**Vial**	**Serial code**	**If not all plasma obtained, record volume (ml) for each vial**	**Freezer box #**
S1		__. __ __ ml			P1		__. __ __ ml	
S2		__. __ __ ml			P2		__. __ __ ml	
S3		__. __ __ ml			P3		__. __ __ ml	
S4		__. __ __ ml			P4		__. __ __ ml	
S5		__. __ __ ml			P5		__. __ __ ml	
S6		__. __ __ ml			P6		__. __ __ ml	
S7		__. __ __ ml			P7		__. __ __ ml	
S8		__. __ __ ml			P8		__. __ __ ml	
S9		__. __ __ ml			P9		__. __ __ ml	
S10		__. __ __ ml			P10		__. __ __ ml	
S11		__. __ __ ml			P11		__. __ __ ml	
S12		__. __ __ ml			P12		__. __ __ ml	
S13		__. __ __ ml			P13		__. __ __ ml	
S14		__. __ __ ml			P14		__. __ __ ml	
S15		__. __ __ ml			P15		__. __ __ ml	
S16		__. __ __ ml			P16		__. __ __ ml	
S17		__. __ __ ml			P17		__. __ __ ml	
S18		__. __ __ ml			P18		__. __ __ ml	
S19		__. __ __ ml			P19		__. __ __ ml	
S20		__. __ __ ml			P20		__. __ __ ml	

ID __ __ __ - __ __ __ __ - __ __

ADVERSE EVENT FORM

Date of onset (mm/dd/yy)	Study Activity (code) 10 = 400 meter 20 = Stepwatch 30 = Environment 40 = Phlebotomy 50 = Other	Event (code) See codes on back	Relationship to study 0=not related 1=possible related 2=probably related 3=definitely related 4=indeterminate	Serious adverse event? N = No Y = Yes *(See definition of SAE on back of form)*	Severity 1=mild 2=moderate 3=severe 4=life threatening 5=death	Action taken 1=none 2=out-patient evaluation 3=hospitalization 4=other	Outcome date (mm/dd/yy)	Outcome Status 1=resolved 2=continuing 3=controlled 4=death	For office use only Entered	 Verified
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y
___/___/____	__ __ *(If other, specify: ______________)*	__ __ *(If other, specify: ______________)*	__ __	N Y	__ __	__ __ *(If other specify: ___________)*	___/___/___	__ __	Y	Y

Event codes:

400 Meter Corridor Walk

01 = angina, chest pain, tightness, or pressure
02 = trouble breathing, shortness of breath, wheezing or dyspnea
03 = MI
04 = stroke
05 = lightheaded or dizzy
06 = loss of consciousness
07 = back pain
08 = hip pain
09 = knee pain
10 = calf pain, leg cramps
11 = foot pain
12 = numbness or tingling in legs or feet
99 = other-specify

Environmental Related

01 = skin or peripheral nerve pressure injury (from too small chair, etc)
02 = physical injury occurring during research visit (e.g. fall walking during visit)
03 = physical injury occurring to/from visit (e.g. fall getting out of car)
04 = staff injury (e.g., coordinator injured while transporting study equipment)
99 = other-specify

Stepwatch Monitor

01 = skin and peripheral nerve pressure injury (from band/monitor)
02 = back pain (from bending over to put on/remove monitor)
99 = other-specify

Phlebotomy related

01 = temporary discomfort or bruising
02 = infection at the skin puncture site
03 = fainting
99 = other-specify

Other

01 = breach of confidentiality

NOTE: *This list is not all inclusive and the recording of an adverse event remains at the discretion of the investigator. A symptom or condition that is present but does not fit one of these levels may still be recorded as an adverse event.*

Definition of Serious Adverse Event

A serious adverse event is defined as fatal or life-threatening, requires or prolongs hospitalization, produces a significant or permanent disability, or results in a congenital anomaly/birth defect.

Severity Definitions:

Mild:	awareness of sign or symptom, but easily tolerated.
Moderate:	discomfort sufficient to cause interference with normal activities.
Severe:	incapacitating, with inability to perform normal activities.
Life threatening:	imminent peril of loss of life.
Death:	Death has occurred.

Relatedness to the study:

Not related:	Indisputably not related to any of the categories.
Possibly related:	Unlikely but uncertain as to whether the event is related to the category.
Probably related:	Likely but uncertain as to whether the event is related to the category.
Definitely related:	Indisputably related to any of the categories.
Indeterminate:	complete lack in clarity or judgment as to whether the event is related to the category.

Outcome status:

resolved	Patient returned to previous health status with no subsequent problems.
continuing	Patient has not yet returned to previous health status and continues to be followed for the AE.
controlled	Event is present but is controlled .
death	Death has occurred.

ADVERSE EVENTS QXQ

DATA SECTION	COMPLETION INSTRUCTIONS
GENERAL INFORMATION:	The safety committee has identified four study categories, of LABS-2, where potential adverse events are possible. The study event categories include the 400 meter corridor walk, the Stepwatch Activity Monitor, Environmental related events and blood draw related events. An adverse reaction must be considered to be associated with the research category if there is a reasonable possibility that the reaction may have been caused by the research intervention (i.e., a causal relationship between the reaction and the research intervention cannot be ruled out by the investigator(s)). **NOTE:** **If the adverse event is determined to be a Serious Adverse Event (as defined on page 2 of the AE form) in addition to the AE form, complete a mandatory SAE and fax it to the Coordinating Center at the University of Pittsburgh within 24 of the knowledge of the event @ 412 624-5268. Follow the detailed instructions in the SAE QxQ's.**
GUIDELINES FOR ADVERSE EVENT REPORTING:	Each page of the Adverse Event form is designed to capture up to 10 events per patient. Each new onset of an adverse event should be recorded on one line of the Adverse Event form. If a patient has more than 10 adverse events, use a second form, etc. Each adverse event should have a date of onset and outcome date, regardless of the duration of the event. Do not record the same event on more than one line if the event is continuing from one evaluation to the next. Leave the outcome date and outcome status columns blank until the event either resolves or is determined to be continuing but controlled. If the outcome status is determined to be continuing/controlled and then the patient has an exacerbation of the same event type, record the new onset on a new line. Only new onsets should be recorded on a new line. **All Adverse Events must be entered into the LABS MATRIX database.**
Person(s) Responsible:	Research Coordinators
Source(s) of information:	Patients, family members, physician(s), hospital records, hospital and research staff
Time of data collection:	As soon as knowledge of the event(s) occur.

DATA SECTION	COMPLETION INSTRUCTIONS
Specific Form Information	**ID:** Record the patient's ID number **Date of onset:** Record the date (month/day/year) that the patient adverse event started. If any part of the date is unknown, record "unk" in that field and complete the remaining fields. **Study Activity:** Record the code of the study activity in which the event occurred. The codes are as follows: 10 = 400 meter corridor walk 20 = Stepwatch Activity Monitor 30 = Environment 40 = Blood draw 50 = Other **Event:** Record the code for the event. Below are coded events for each study activity. At a minimum, the list of events should be used as a guide for recording adverse events: <u>400 Meter Corridor Walk</u> 01 = angina, chest pain, tightness, or pressure 02 = trouble breathing, shortness of breath, wheezing or dyspnea 03 = MI 04 = stroke 05 = lightheaded or dizzy 06 = loss of consciousness 07 = back pain 08 = hip pain 09 = knee pain 10 = calf pain, leg cramps 11 = foot pain 12 = numbness or tingling in legs or feet 99 = other-specify <u>Environmental</u> 01 = skin or peripheral nerve pressure injury (from too small chair, etc) 02 = physical injury occurring during research visit (e.g. fall walking during visit) 03 = physical injury occurring to/from visit (e.g. fall getting out of car) 04 = staff injury (e.g., coordinator injured while transporting study equipment) 99 = other-specify <u>Stepwatch Monitor</u> 01 = skin and peripheral nerve pressure injury (from band/monitor) 02 = back pain (from bending over to put on/remove monitor)

DATA SECTION	COMPLETION INSTRUCTIONS
	99 = other-specify Blood draw 01 = temporary discomfort or bruising 02 = infection at the skin puncture site 03 = fainting 99 = other-specify **Relationship to study:** Record the relationship to the study as possibly, probably, definitely or indeterminately related. 1 = Possibly related – Unlikely but uncertain as to whether the event is related to the category. 2 = Probably related – Likely but uncertain as to whether the event is related to the category. 3 = Definitely related – Indisputably related to the category. 4 = Indeterminately related – complete lack in clarity or judgment as to whether the event is related to the category. **Serious Adverse Event?:** Circle "N" (no) or "Y" (yes) to indicate if the adverse event is a serious adverse event. If yes, complete a SAE form and submit that form to the coordinating center within 24 of knowledge of the event. *NOTE: A **Serious Adverse Event** is defined as meeting one or more of the below bulleted list:* • *fatal or life-threatening* • *requires or prolongs hospitalization* • *produces a significant or permanent disability* • *results in a congenital anomaly/birth defect.* **Severity:** Record the code that indicates the "most severe" severity of the episode. 1 = mild; awareness of sign or symptom, but easily tolerated. 2 = moderate; discomfort sufficient to cause interference with normal activities. 3 = severe; incapacitating, with inability to perform normal activities. 4 = life threatening; imminent peril of loss of life 5 = Death; death has occurred. **Action taken:** Record the code that indicates the action taken for the adverse event. 1=none 2=out-patient evaluation 3=hospitalization 4=other. if other, specify **Outcome date:** Record the date (month/day/year) of the outcome of the adverse event. If the adverse event is continuing but not controlled this column should be left blank until the event is resolved or continuing but controlled. Some events may continue through the end of the treatment period or follow-up period before being resolved

DATA SECTION	COMPLETION INSTRUCTIONS
	or continuing but controlled. **Outcome status:** For each adverse event, record the code that indicates the outcome status. If the adverse event is continuing but not controlled record as continuing. When the event is either resolved or controlled, update both the outcome date and outcome status on the form and in the database. If an event is continuing (or controlled) and later deemed to be controlled (or resolved), then update both the outcome date and outcome status on the form and in the database. Resolved – patient returned to previous health status with no subsequent problems Continuing – patient has not yet returned to previous health status and continues to be followed for the AE Controlled – event is present but is controlled Death – death has occurred Events that are coded as Continuing will be reviewed periodically throughout the course of the study to determine whether they have Resolved or are Controlled. **For Office Use Only:** This section is for data entry purposes only. When each record is entered, the person entering the data should circle the "Y" (initial for "yes") under the column *Entered* and when the record is verified, the person entering the data should circle the "Y" under the column *Verified.*

LABS-2 Serious Adverse Event (SAE) – Version 01/06/2006

Patient ID __ __ __ - __ __ __ __- __ __ **Form Completion Date** __ __ / __ __ / 20 __ __
mm dd yy

Certification number: __ __ __ __ __

Guidelines for Serious Adverse Event Reporting: An adverse event will be deemed a Serious Adverse Event (SAE) if it is fatal or life-threatening; requires or prolongs hospitalization; produces a disability; or results in a congenital anomaly/birth defect. If an Adverse Event is determined to be a SAE, this form must be completed and **faxed** to the DCC within 24 hours of site notification of the event.

1. Date of Onset: __ __ / __ __ / __ ___ __ ___ (mm/dd/yyyy)

2. Explanation of Event (Explanation required; attach additional paper, if necessary):

_____

_____

_____

_____

3. Specify nature of SAE (check no or yes for each):

No	Yes	
☐	☐	a. Death
☐	☐	b. Life threatening
☐	☐	c. Required hospitalization or prolonged hospital stay
☐	☐	d. Produced significant or permanent disability
☐	☐	e. Resulted in a congenital abnormality/birth defect

4. Was the event a result of a research activity?

☐ 0. No ☐ 1. Possibly Related ☐ 2. Probably Related ☐ 3. Definitely Related ☐ 4. Indeterminate

4.1. Indicate how event related to study. Check yes or no for each.

No	Yes	Procedure/intervention
☐	☐	400 meter corridor walk
☐	☐	Stepwatch Activity monitor
☐	☐	Environment related
☐	☐	Phlebotomy related
☐	☐	Other (Specify: _____)

4.2. Was the local IRB notified of the SAE? ☐ 0. No ☐ 1. Yes → Notification date __ __ / __ __ / 20 __ __

(Form not to be entered into MATRIX)

SERIOUS ADVERSE EVENTS

DATA SECTION	COMPLETION INSTRUCTIONS
GUIDELINES FOR SERIOUS ADVERSE EVENT REPORTING:	An Adverse Event will be deemed a Serious Adverse Event (SAE) if it is fatal or life-threatening; requires or prolongs hospitalization; produces a disability; or results in a congenital anomaly/birth defect. If an Adverse Event is determined to be a SAE, the SAE Form will be completed and **faxed** to the DCC within 24 hours of site notification of the event. See appendix A for example of Adverse Events. Adverse reactions of minor severity or adverse reactions which are determined by the investigator to be unrelated to research-specific procedures or interventions need not be reported to the local IRB. If the patient experiences a Serious Adverse Event: 1. Clinical center personnel complete the Serious Adverse Event (SAE) form. 2. The completed form must be faxed to the Coordinating Center at the University of Pittsburgh within 24 hours of knowledge of the event. 3. The Coordinating Center will submit the form to the Safety chair. The Coordinating Center will be responsible for distributing the report to the Data Safety Monitoring Board chair, and NIDDK project officer. 4. The Clinical Center and Coordinating Center Principal Investigators are responsible for notifying their local Institutional Review Board.
Person(s) Responsible:	Research Coordinator
Source(s) of information:	Patients, family members, physician(s), hospital records.
Date of data collection:	As soon as knowledge of events or knowledge of the event occurs.

FORM COMPLETION	DEFINITION
	Patient ID: Enter the patient ID **Form Completion Date:** Enter the date that the SAE form was completed. **Certification Number:** Enter the certification number of the person completing this form. 1. Date of Onset: Enter the date (month/day/year) that the patient adverse event started. If any part of the date is unknown, record "unk" in that field and complete the remaining fields. 2. Explanation of the event: An explanation of the event is required and should include enough information about the event to allow the coordinating center and others to whom the event is reported (IRB, NIDDK, DSMB, etc.) to determine if a possible link exists between the event and LABS. Attach additional paper if necessary. **Do not include patient name, randomization assignment or any other patient identifying information.** 3. Specify the nature of the SAE (check "no" or "yes" to each)? Check whether the SAE was a death, life-threatening, required hospitalization or prolonged hospital stay, produced significant or permanent disability, or resulted in a congenital abnormality/birth defect. 4. Was the event a result of a research activity? Specify if the activity was possibly related, probably related, definitely related or indeterminate. ***Related to the research activity*** is defined as an event that, at minimum, there is a reasonable possibility that the event may have been caused by the research activity (i.e., a causal relationship between the reaction and the research activity cannot be ruled out by the investigator(s)). 1 = Possibly related – Unlikely but uncertain as to whether the event is related to the category. 2 = Probably related – Likely but uncertain as to whether the event is related to the category. 3 = Definitely related – Indisputably related to the category. 4 = Indeterminately related – complete lack in clarity or judgment as to whether the event is related to the category. 4.1 If yes, indicate whether or not event was related to the following research category: 400 meter corridor walk, Stepwatch Activity monitor, environmental , phlebotomy related events or other. Check "no" or "yes" for each. 4.2 Was the local IRB notified of the SAE? If the local IRB

	was notified of the SAE, select “yes” and enter the notification date, otherwise notify the local IRB.

Appendix A: Examples of adverse events associated with Study Activities:

400 Meter Corridor Walk

- angina, chest pain, tightness, or pressure
- trouble breathing, shortness of breath, wheezing or dyspnea
- MI
- stroke
- lightheaded or dizzy
- loss of consciousness
- back pain
- hip pain
- knee pain
- calf pain, leg cramps
- foot pain
- numbness or tingling in legs or feet
- other

Environmental Related

- skin or peripheral nerve pressure injury (from too small chairs, etc)
- physical injury occurring during research evaluation/visit (e.g. fall walking during visit)
- physical injury occurring to/from visit (e.g. fall getting out of car)
- staff injury (e.g., coordinator injured while transporting study equipment)
- other

Stepwatch Monitor

- skin and peripheral nerve pressure injury (from band/monitor)
- back pain (from bending over to put on/remove monitor)
- other

Phlebotomy related

- temporary discomfort or bruising
- infection at the skin puncture site
- fainting
- other

Other

- breach of confidentiality

NOTE: This list is not all inclusive and the recording of an adverse event remains at the discretion of the investigator. A symptom or condition that is present but does not fit one of these levels may still be recorded as an adverse event.

EXAMINATION MANAGEMENT SERVICES, INC.
Health Services Division

lead and innovate

EMSI Field Office Phlebotomist Checklist

Client Sponsor Name: University of Pittsburgh S2 account #

Project Name: LABS

PARTICIPANT ID#:	
COLLECTION DATE:	
COLLECTION TIME:	

FAX THIS DOCUMENT SAME DAY AS COLLECTION TO

AND TO **INVESTIGATIVE SITE FAX.**

(see "special instructions section of the S2 notification ticket for investigative site fax number)

Waist Circumference #1 _____ cm	Waist Circumference #2 _____ cm	** *IF NEEDED* ** *Waist Circumference #3* _____ cm
Neck Circumference #1 _____ cm	Neck Circumference #2 _____ cm	** *IF NEEDED* ** *Neck Circumference #3* _____ cm
Weight #1 _____ /kg	Weight #2 _____ /kg	** *IF NEEDED* ** *Weight #3* _____ /kg

UPS AIRBILL NUMBER

for frozen shipper sent to lab

_____

STEPWATCH ACTIVITY MONITOR ***(choose one)***

☐ Participant stated monitor was used, and EMSI tech took possession of unit for mailling

☐ Participant stated monitor was NOT used, and monitor was left with participant

The following specimens were to be collected:

TWO 8.5ml SST tiger top tube	☐	Complete	☐	Not Complete	Reason:
ONE 3.5ml SST tiger top tube	☐	Complete	☐	Not Complete	Reason:
ONE 10ml lavender top tube	☐	Complete	☐	Not Complete	Reason:
ONE 3ml lavender top tube	☐	Complete	☐	Not Complete	Reason:
ONE 2ml lavender top tube	☐	Complete	☐	Not Complete	Reason:
Clean catch urine sample	☐	Complete	☐	Not Complete	Reason:

The following aliquots were to be created from those specimens:

3ml of serum marked "Lipid/Creatinine"	☐	Complete	☐	Not Complete	Reason:
.5ml of serum marked "CRP/Cystatin"	☐	Complete	☐	Not Complete	Reason:
.5ml of serum marked "Insulin"	☐	Complete	☐	Not Complete	Reason:
TEN of .5ml of serum marked "S1-S10"	☐	Complete	☐	Not Complete	Reason:
TEN of .5ml of plasma marked "P1-P10"	☐	Complete	☐	Not Complete	Reason:
2.5ml of urine marked "Albumin/Creat"	☐	Complete	☐	Not Complete	Reason:
FOUR of .5ml of urine marked "U1-U4"	☐	Complete	☐	Not Complete	Reason:

Paperwork distribution

EMSI Phlebotomist Checklist	☐								
Central Lab Specimen Log	☐								
Biosample Repository Specimen Log	☐								
Remote Visit Check Sheet	☐								
Research Coord. Assess. Followup Form	☐								

EMSI Branch Name		EMSI Branch #	
Phlebotomist Name			
Date Completed			
Phlebotomist Signature			

LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY

Date _____

Dear _____

Thank you for allowing me, a staff member from Examination Management Services, Incorporated (EMSI), to come in to you home to complete your LABS Study visit! Because of your continued participation in this very important research study, we are able to collect the data that will help us learn a great deal about the outcome of adolescents who have weight loss surgery.

The LABS team wants to encourage you to keep in contact with your clinical team, surgeon, and local study staff. You will find the phone number listed below in this letter along with your hospital's logo. It is important that you continue follow up with them by keeping your clinical appointments. They care about you and your well-being! Please make sure that you contact them if you change phone numbers, email or home address, so that they can make sure you continue to receive the clinical care you need as a post surgical patient.

We greatly appreciate your allowing us to make this EMSI home visit possible.

If you have any concerns or comments please contact our EMSI Clinical Project Manager and she will send your message to your LABS Study Coordinator.

Clinical Project Manager, HSD

Sincerely,

Name of EMSI Examiner _____

1.0 Introduction.

This document defines the sampling scheme for enrolling participants from the LABS-1 cohort into LABS-2. Actual versus expected enrollment figures will be monitored.

2.0 LABS-2 Sampling Goals.

Consistent with the LABS-2 protocol, which describes in detail the study objectives and hypotheses, the following sampling goals have been set for LABS-2:

a) A total of 2,400 participants.
b) At least 1-year of follow-up possible for all participants
c) Sufficient number of participants undergoing lap band procedures to study mechanisms involved in weight loss and weight gain, energy expenditure, glucose control, and other aspects of the pathophysiology of obesity and obesity-related complications among participants who undergo this procedure (see justification below).

3.0 Parameters for Defining Sampling Scheme.

The following parameters have been used to develop the LABS-2 sampling scheme:

a) Anticipated enrollment start date of July 1, 2005.
b) Anticipated enrollment end date of July 31, 2007. This allows 13 months of follow-up for the last participant enrolled. Enrollment occurs over 25 months which means an average of 96 participants per month to obtain 2400.
c) Recognition that not all LABS-1 participants approached will provide consent to participate in LABS-2. A 20% refusal rate has been assumed.

4.0 Lap-Band Estimates.

Various analyses are envisioned using participants undergoing lap band procedures. These include comparisons between lap band surgical participants and other surgical participants, and analyses within lap band surgical participants.

The number of lap band procedures that can be included in LABS-2 is limited by the number of lap bands expected to be performed by participating centers, estimated to be 112 per year. Over the 25 month enrollment period, this corresponds to 233 procedures. Assuming attempted recruitment of all lap band procedures and a 20% refusal rate, a total of 187 lap band procedures would be included in LABS-2. The precision and effect sizes detectable with this sample size are described below. All power estimates are based on 2-sided type I error rate (α) of 0.05.

4.1 Precision Estimates - Lap Band Participants Only.

Among lap band participants, 187 participants will provide the following precision (95% confidence interval) for mean values and percentages.

95% confidence interval (C.I.) for mean values					95% C.I. for percentages (%)		
Mean	SD	CV	Lower	Upper	Proportion	Lower	Upper
100	5	5%	99.3	100.7	5%	1.9%	8.1%
100	10	10%	98.6	101.4	10%	5.7%	14.3%
100	15	15%	97.8	102.2	15%	9.9%	20.1%
100	20	20%	97.1	102.9	20%	14.3%	25.7%
100	25	25%	96.4	103.6	25%	18.8%	31.2%
100	30	30%	95.7	104.3	30%	23.4%	36.6%
100	35	35%	95.0	105.0	35%	28.2%	41.8%

100	40	40%	94.3	105.7	40%	33.0%	47.0%
100	45	45%	93.5	106.5	45%	37.9%	52.1%
100	50	50%	92.8	107.2	50%	42.8%	57.2%

SD: standard deviation; CV: coefficient of variation.

4.2 Pre/Post Surgery Within-Participant Change: Lap Band Participants Only.

For continuous variables (e.g. weight loss, energy expenditure, glucose control), an initial sample size of 187 lap band procedures at study entry and allowing for 10% loss to follow-up at one-year will provide 90% power to detect a small effect size of 0.25 (difference in means before and after surgery / standard deviation). Thus, if relatively small pre/post surgery changes are observed among anthropometric and physiological parameters measured on a continuous scale, the expected sample of 187 lap band participants will enable such changes to be detected.

For dichotomous variables (e.g. prevalence of diabetes), a sample size of 187 lap band procedures (allowing for 10% loss to follow-up) will provide 90% power to detect odds ratios ranging from 1.79 to 3.61 (see table below), as long as the pre-surgery prevalence is at least 15%. For less common co-morbidities, the detectable odds ratios increase beyond 3.6. For these within-person analyses, the prevalence of a comorbidity, such as diabetes, will be compared before and after surgery. Because this type of analysis is based on matched pairs (participant status before and after surgery), the final analysis makes use of only those participants who experience a pre/post surgery change in status. Hence, the power is influenced by the overall percentage of discordant pairs (i.e. participants who experience a pre/post surgery change in comorbidity status). These examples demonstrate that the estimated sample of 187 lap band participants (168 with one-year follow-up) will provide adequate power to detect modest to large clinically relevant within-participant changes in the prevalence of comorbidities that were fairly common prior to surgery. We will have little power to detect even substantial effect sizes for comorbidities that are relatively rare prior to surgery. For example, if the prevalence of the comorbidity before surgery is 10% (17 participants), and 80% of these participants (n=14) improve after surgery, while 3% of the 151 previously unaffected participants develop the comorbidity (n=5), the power to detect the resulting odds ratio of 2.77 will be only 53%.

Prevalence of Comorbidity			**Proportion of Pairs**	**Detectable Odds**
Before Surgery	**After Surgery**	**Difference**	**Discordant**	**Ratio at 90% Power**
15.7%	4.3%	11.3%	20%	3.61
21.9%	8.1%	13.8%	30%	2.71
28.0%	12.0%	16.0%	40%	2.33
34.0%	16.0%	18.0%	50%	2.12
39.8%	20.2%	19.6%	60%	1.97
45.6%	24.4%	21.2%	70%	1.87
51.3%	28.7%	22.6%	80%	1.79

4.3 Between Group (Subgroup) Comparisons: Lap Band Participants Only.

For continuous variables and assuming 168 lap band participants at follow-up and a 50%/50% distribution of participants within respective subgroups (e.g. BMI above or below 40), the sample will provide 90% power to detect a medium effect size of 0.50. If the two groups being compared are imbalanced at 80%/20%, only a relatively large effect size of 0.63 will be detectable with 90% power.

For discrete variables, and assuming a 50%/50% distribution of participants within respective subgroups (e.g. BMI above or below 40), an odds ratio of 3.2 will be detectable with 90% power

assuming an event rate of 20% in the reference group (e.g. BMI below 40). If the event rate is 10% in the reference group, then an odds ratio of 4.1 will be detectable at 90% power. Moreover, if the two groups being compared are imbalanced, only very large odds ratios will be detectable at 90% power (table below). Thus, the expected sample of 187 lap band participants will be able to detect only large between-group differences in discrete outcomes.

5% event rate in reference group		10% event rate in reference group		20% event rate in reference group	
Distribution of subgroups	**Detectable odds ratio**	**Distribution of subgroups**	**Detectable odds ratio**	**Distribution of subgroups**	**Detectable odds ratio**
50%/50%	5.78	50%/50%	4.06	50%/50%	3.17
60%/40%	5.86	60%/40%	4.12	60%/40%	3.20
70%/30%	6.28	70%/30%	4.40	70%/30%	3.46
80%/20%	7.48	80%/20%	5.20	80%/20%	4.03
90%/10%	11.14	90%/10%	7.45	90%/10%	5.94

4.4 Comparison of Lap Band Participants to Other Surgical Participants.

Finally, for discrete outcome data (e.g. clinical events) and considering the full expected participant cohort of 187 lap band procedures and 1,995 other surgeries, the study will have 90% power to detect hazard ratios of approximately 2.3 or lower (see table below). These estimates are based on a log-rank test and survival analysis, assume 10% loss to follow-up, and an incidence of at least 5% in the reference group (i.e. non lap-band procedures).

Hazard ratios detectable at 90% power	Incidence Rate in Reference Group			
	5%	**10%**	**15%**	**20%**
Assuming 168 lap band participants and 1,796 other surgery participants with follow-up	2.30	1.91	1.74	1.64

4.5 Conclusion: Lap Band Sampling.

As seen above, the expected 187 lap band participants with 10% loss to follow-up at 1-year will provide adequate power to detect small to medium within-participant changes. For between group changes, medium effects can be detected when the full cohort of lap band versus non-lap band procedures is used. However, when restricting the analysis to lap band participants, only large to very large differences will be detectable.