Hospitalization Evaluation

DATA SECTION	COMPLETION INSTRUCTIONS
GENERAL INFORMATION	The Hospitalization Evaluation form is initiated immediately upon patient enrollment in the PALF registry. The form captures patient demographics, admission, family, and medication histories, and in-hospital information through the first of 1) successful hospital discharge, 2) liver transplantation, or 3) death.
PATIENT ID	Record the patient ID number on the cover page and in the top right hand corner of each page.
DEMOGRAPHICS	GENERAL INSTRUCTIONS: Record the gender, date of birth, ethnicity, race, and education status of the patient, and the number of siblings. SPECIFIC INSTRUCTIONS: Gender: Check whether the patient is male or female. Date of birth: Record the month, day, and year of the patient's birth. If any part of the date is unknown, record 'Unk' (Unknown) in that field and complete the remaining fields. Hispanic, Latino, or Latina: Defined as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. (1) Check "Yes" if the patient identifies himself/herself as Hispanic, Latino, or Latina. If not check "No". (2) If Yes, mark the appropriate box that specifies origin. (3) If origin is not Cuban, Mexican, or Puerto Rican mark "Other" and write in the place of origin. Race: Check the appropriate box to indicate the race of the patient. If the patient identifies with more than one race, check all that apply. White or Caucasian: A person having origins in any of the original peoples of Europe, the Middle East, or North America. Black or African-American: A person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African-American". Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. American Indian or Alaska Native: A person having origins in any of the original peoples of North, Central, or South America, and who maintains tribal affiliations or community attachment.

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	Native Hawaiian or Pacific Islander: A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Other: If the patient's racial background is not listed, check "Other" and specify the patient's race in the space provided. Years of education: Record the number of years of formal education **completed** by the patient. Do not count years started but not completed. Check "N/A" if the patient is not of school age. Check "Unknown" if the years of education completed is not known. Number of siblings: Record the total number of full and half brothers and sisters of the patient. Do not count step-brothers or sisters.
ADMISSION HISTORY	GENERAL INSTRUCTIONS: This section captures patient status from the time of the initial hospital admission. SPECIFIC INSTRUCTIONS: Initial hospital admission: Record the month, day, and year the patient was first admitted to a hospital for this event. If the patient was admitted to a hospital and then transferred one or more times to other institutions, record the date of admission to the first hospital in the series. Hospital Transfer: Check whether or not the patient was transferred to your institution from another hospital. If "Yes", record the date the patient was transferred to your hospital. Date/Time enrolled: Record the month, day, and year that the patient was enrolled in the PALF registry, defined as the date that patient eligibility was determined and a patient consent form was signed. Record the time of enrollment in 24-hour time (military time). Date of onset of jaundice: Record the month, day, and year of onset of jaundice, defined as the deposition of bile pigment in the skin, mucous membranes and sclera of the eye with resulting yellow appearance of the patient. If any part of the date is unknown, record "Unk" in that field and complete the remaining fields. Check "N/A" if the patient is not jaundiced. Symptoms prompting medical attention: Check "Yes" or "No" for each symptom listed to indicate whether or not the presence of that symptom prompted the patient or parent to seek medical attention for this episode of acute liver failure. If it is not known whether the symptom contributed to the reason medical attention was sought, check "Unk". Nausea/vomit: Defined as the sensation leading to or the act of vomiting.

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	Abdominal Pain: Defined as pain in the abdominal area, stomach region, or belly. May also be referred to as stomach pain, belly ache, or abdominal cramps. Rash: An eruption or change in the color or texture of the skin. Symptoms are skin redness or inflammation and skin lesions. Seizure: A sudden attack or convulsion due to involuntary electrical activity in the brain, resulting in a wide variety of clinical manifestations such as: muscle twitches, staring, tongue biting, urination, loss of consciousness, and body shaking. Lethargy: An abnormal drowsiness or stupor, a condition of indifference. Jaundice: characterized by hyperbilirubinemia and deposition of bile pigment in the skin, mucous membranes and sclera with resulting yellow appearance of the patient. Malaise: Defined as a vague feeling of bodily discomfort. Fever: Defined as a body temperature of 100 degrees Fahrenheit or above. Altered consciousness: An altered awareness of surroundings. Other: Any symptom not listed above. If yes, record the symptom(s). Alcohol use: Check "Yes" or "No" to indicate whether or not the patient uses alcohol on a regular basis, as defined as an average of 10 grams of alcoholic per week. 1 glass of beer/wine/spirits ≈ 10 gms 1 can of beer ≈ 15 gms 1 bottle of wine ≈ 80 gms Check "Unk" if it is not known whether the patient uses alcohol on a regular basis. Ecstasy use: Check "Yes" or "No" to indicate whether or not the patient used the illicit drug Ecstasy within the 7 day period prior to the onset of acute liver failure symptoms. Check "Unk" if it is not known whether the patient used Ecstasy during this period.
SYSTEM REVIEW & FAMILY HISTORY	GENERAL INSTRUCTIONS: Circle Y (yes) or N (no) to indicate whether the patient or specific family member has or had each disease or condition. Circle U (unknown) if it is unknown whether the patient or listed family members have the disease or condition. If a disease or condition is not listed but is felt to be critically important to the patient's acute liver disease, contact the Data Coordinating Center and request that the condition be added to the list. Family members listed refer to blood relatives only.

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	History of mother is collected separately because of pregnancy and mitochondrial relationships between the mother and child. Maternal serologies are also captured when applicable. Father/Extended Family includes father, grandparents, aunts, uncles, and first cousins. Siblings refer to full and half brothers and sisters of the patient. Do not consider step-brothers or sisters.
MEDICATIONS	SPECIFIC INSTRUCTIONS: Medication taken within the last 6 months: Check "Yes", "No", or "Unk" to indicate whether or not the patient has taken the following types of medication within the last 6 months, **prior to the initial hospital admission for this event**, at your hospital or a hospital from which the patient was transferred. If a patient has taken a medication within the last 6 months that is not included in the categories listed, record the type of medication in the "Other, specify" field. Medication taken within the last 1 month: List all prescription medications, herbs, xenobiotic agents taken as toxins (mushrooms, acetaminophen, vitamins, etc.), and anesthetics taken within the 30 days **prior to the initial hospital admission for this event**, at your hospital or a hospital from which the patient was transferred. Record the medication/toxin name, date the agent was last taken, total daily dose and unit, and the duration taken in days or months. Date last taken: record the month, day, and year that the medication was last taken. If any piece of the date is unknown, record "Unk" in that field and provide the other pieces. Total daily dose: Calculate the average total daily dose taken over the period of time that the medication/toxin was taken and record that dose in milligrams or micrograms. Duration: record the number of days or months that the medication/toxin was taken. If for some reason the medication/toxin was temporarily interrupted for a period less than 7 days, disregard the interruption when determining the duration of use. Acetaminophen use: Record "Yes" or "No" to indicate whether or not the patient ingested acetaminophen **prior to enrollment in the PALF registry**. If "Yes", record the following: Amount taken: record whether the acetaminophen was taken as a single dose or was chronic use. If a single dose, record the total dose taken, in milligrams, and the date and time of ingestion. Record time taken in 24-hour time (military time).

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	If chronic use, record the average daily dose taken, the number of days taken, whether or not a single dose greater than 100 mg/kg was taken during the illness, and the reason the acetaminophen was taken. If the reason is not listed, check "Other" and specify the reason in the space provided. Acetaminophen toxicity: Applies to a single dose or chronic use. Record whether the acetaminophen was taken as an attempt to commit suicide or an accidental overdose. Record "Unknown" if the intention is not clear or "N/A" if acetaminophen toxicity did not occur.
PHYSICAL EXAMINATION	GENERAL INSTRUCTIONS: The physical examination is to be performed at the time of entry into the PALF registry. SPECIFIC INSTRUCTIONS: Height: Record the patient's height in cm at the time of the physical exam. Check "actual" if the measurement was obtained from a standing measure of height or a bed measurement of length. If the height or length is not recorded in the patient chart, a measurement from the parent is acceptable. In this instance, check "estimate". Weight: Record the patient's weight in kilograms at the time of the physical exam. Temperature: Record the patient's body temperature in degrees Celsius at the time of the exam. Pulse: Record the patient's number of heart beats per minute at the time of exam. Blood Pressure: Record the patient's systolic and diastolic blood pressure in mmHg at the time of the exam. Hepatic coma grade: Using the appropriate scale, indicate the coma grade at the time of the exam. To assess encephalopathy, for patients ranging from 3 to 10 years of age, use the standard clinical scales. For younger patients use the Peter Whittington scale. If for some reason the coma grade recorded in the hospital chart indicates a range rather than the grade, for example, a grade of 2-3 is recorded in the hospital chart, record the lower value as the coma grade. If the coma grade cannot be assessed, check "not assessable".

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Standard Clinical Scales:

Stage	Clinical	Asterixis/Reflexes	Neurological signs	EEG changes
0	None	None/normal	Psych testing only	Normal
I	Confused, mood changes, altered sleep habits, loss of spatial orientation, forgetful	None/normal	Tremor, apraxia, impaired handwriting	Normal or diffuse slowing to theta rhythm, triphasic waves
II	Drowsy, inappropriate behavior, decreased inhibitions	None/ hyperreflexic	Dysarthria, ataxia	Abnormal generalized slowing, triphasic waves
III	Stuporous, obeys simple commands	None/hyperreflexia, up-going toes (+ Babinski)	Rigidity	Abnormal generalized slowing, triphasic waves
IV	Comatose, arouses with painful stimuli (IVa), or no response (Ivb)	Absent	Decerebrate or decorticate	Abnormal, very slow delta activity

Peter Whittington Scale:

Stage	Clinical	Asterixis/Reflexes	Neurological signs
Early (I and II)	Inconsolable crying, sleep reversal, inattention to task	Unreliable/ normal or hyperreflexic	Untestable
Mid (III)	Somnolence, stupor, combativeness	Unreliable/hyperreflexic	Most likely untestable
Late (IV)	Comatose, arouses with painful stimuli (IVa) or no response (IVb)	Absent	Decerebrate or decorticate

PRISM score: record the PRISM score and the date the PRISM score was calculated. If a PRISM score was calculated more than one time during the study period, record the PRISM score calculated closest to the time of enrollment in the registry. If the patient is not in the ICU or a PRISM score was not calculated, check "not assessed".

A PRISM score is normally calculated within the first 24 hours following admission to the ICU using the most abnormal values obtained during that period.

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	GENERAL INSTRUCTIONS: Check "Yes" or "No" to indicate whether or not the patient has any of the following conditions as assessed by the physician via physical examination techniques only. Pupillary dilation: defined as > 5 mm and hypo- or unresponsive. Developmental delay: defined as a history of delayed development characterized by failure to meet standard developmental milestones for age.
LABORATORY TESTS & SEROLOGIES	GENERAL INSTRUCTIONS: Laboratory tests (Blood, Kidney/Electrolyte, Liver, Arterial/Toxins, and Miscellaneous) are to be obtained from tests performed at the time of admission to the PALF registry. Record results according to the units specified. If more than one test was performed on the date of admission to the PALF registry, record the result from the test performed closest to but before the time of enrollment in the registry. If the test was not performed, check "Not Done." Serology results are obtained from tests performed from the time of the initial hospital admission for this event, including tests performed at referring hospitals, through the first of hospital discharge, liver transplantation, or death. If a given test was performed more than once since the initial hospital admission, record the result from the test closest to the time of enrollment in the PALF registry. If a given test was not performed, check "Not done". A "Pending" result may be recorded for the tests that take several weeks to perform. If these tests are ordered but the results are not yet available, record "Pending" and submit the form to the Data Coordinating Center. The Data Coordinating Center will prompt for these results at regular intervals until the results are available.
VIRAL STUDIES	GENERAL INSTRUCTIONS: Record results for all viral tests performed during the hospitalization, from the time of the initial hospital admission for this event through hospital discharge, liver transplantation, or death. Circle "+" (positive) or "-" (negative) to indicate the result of each viral test or "ND" (Not Done) if the viral test was not performed. If the viral test result was positive, record the source code(s) in the space provided. If a viral test other than those listed was completed, specify the type of viral test performed in the space provided and indicate the result and source code, when applicable.
INFECTIONS	GENERAL INSTRUCTIONS: Check the box to indicate that the sample was tested during the course of the hospitalization. Record results for all tests that resulted in a positive culture, from the time of the initial hospital

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	admission through hospital discharge, liver transplantation, or death. If a sample was tested but all results are negative, check the box to indicate that the sample was tested but do not record the negative results. Date of first positive sample: Record the month, day and year of the sample for the first positive culture obtained according to the infection sites listed. Organism: record the organism(s) found in the positive culture. If a positive culture is obtained but the organism is not listed, record the organism in the "Other specify" field. Outcome: Circle "R" (resolved) or "C" (continuing) to indicate the status of the infection at the time of hospital discharge, liver transplantation, or death. Anti-microbials used: record all antibiotics used during the course of the hospitalization, from the time of the initial hospital admission to the time of hospital discharge, liver transplantation, or death. Check all that apply to indicate whether the medication was used as prophylaxis, bowel decontamination, or infection therapy.
METABOLIC STUDIES	GENERAL INSTRUCTIONS: Check "Diagnostic", "Non-specific", or "Normal" to indicate the result for each of the metabolic studies performed during the course of the hospitalization, from the time of the initial hospital admission through hospital discharge, liver transplantation, or death. If a test was not performed, check "Not Done." If a metabolic test that is not included in the list was performed during the hospitalization, record the type of test in the "Other" field and indicate the results of that test.
SCANS, MONITORING, LIVER BX	GENERAL INSTRUCTIONS: Check the box to indicate if a specific test was performed during the course of the hospitalization, from the time of the initial admission through hospital discharge, liver transplantation, or death. For each test performed, record the month, day, and year of the test along with the findings.
LIST STATUS	GENERAL INSTRUCTIONS: Indicate whether or not the patient was ever listed for liver transplantation. If "Yes", indicate the date of initial listing and the UNOS status and MELD/PELD score at the time of listing. If the patient is on the UNOS waiting list at the time of hospital discharge, transplantation, or death, check "Yes" to currently listed and indicate the list status immediately prior to discharge, transplantation, or death. If the patient is not currently listed for a reason other than transplantation or death, check "No" and indicate the date the patient was removed from the list and the primary reason for removal. If "No", record the reason the patient was not listed.

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OUTCOME	GENERAL INSTRUCTIONS: Check the box to indicate which event occurred first, successful hospital discharge, liver transplantation, or death. Do not submit the completed Hospital Evaluation form to the Coordinating Center until the first of these 3 events has occurred. SPECIFIC INSTRUCTIONS: Hospital discharge: Record the date of discharge from hospital and the discharge location. If the patient was discharged from the hospital but not discharged home, record the location to which the patient was discharged. Transplant: Record the date of the transplant, the type of transplant, whether or not the donor and recipient were ABO compatible, the weight of the resected liver, in grams, and resected liver histology. Death: Record the date of death, major underlying cause of death, and whether or not an autopsy was performed. Refer to the most recent codebook on the project website for codes for cause of death. Autopsy consent: Record "Yes" or "No" to indicate whether or not the parent/guardian was approached to obtain consent to collect registry samples at the time of autopsy. If "Yes" record whether or not consent was provided.
DIAGNOSES	GENERAL INSTRUCTIONS: Initial diagnosis: the primary diagnosis as assessed at time of enrollment in the PALF registry. Final diagnosis: diagnosis at the time of the outcome event (hospital discharge, liver transplantation, death). If more than one diagnosis, rank the diagnoses in order of primary=1, secondary=2, etc. SPECIFIC INSRUCTIONS: The following diagnosis definitions are provided as guidelines. Tests and results listed are not required to confirm a diagnosis. Acetaminophen History of acetaminophen ingestion (either suspected overdose or chronic ingestion, especially in combination with significant alcohol use). Toxic serum acetaminophen level or ALT > 3500 U/L with a history of acetaminophen ingestion >100mg/kg/day irrespective of the acetaminophen level. ALF of Pregnancy Acute Fatty Liver - ALF occurring between 26 weeks gestation and the immediate postpartum period - liver biopsy c/w diagnosis (ie microsteatosis) HELLP syndrome - ALF occurring between 22 weeks gestation and

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	immediate postpartum period (> 90% cases) - presence of hemolysis, elevated LFTs (transaminases) and low platelets (< 100,000) - often associated with hypertension/pre-eclampsia <u>Budd-Chiari</u> Obstruction of blood flow of the centrilobular veins at any level as shown by: - doppler US - angiography Liver biopsy c/w diagnosis <u>Shock/Ischemia</u> Development of ALF following documented hypotension. Development of ALF in association with a documented low flow state eg severe cardiac failure Exclusion of other causes <u>Wilson's Disease</u> Serum ceruloplasmin < 20mg/dl Elevated serum free copper > 25μg/dl Urinary copper excretion > 100 μg/ 24 hours with or without Copper concentration in liver biopsy > 250 μg/g of dry weight <u>Hepatitis A</u> Positive anti-HAV IgM <u>Hepatitis B</u> Positive anti-HBc IgM Positive HBsAg <u>Delta Hepatitis</u> Positive HBsAg Positive anti-HDV with or without Positive anti-HBc IgM <u>Hepatitis C</u> Positive anti-HCV (may be absent early in the infection) Positive HCV RNA by PCR <u>Hepatitis E</u> Positive anti-HEV IgM <u>Autoimmune Hepatitis</u> Globulins elevated > 1.5X ULN. ANA, ASMA or LKMA positive in titer of at least 1:80. Negative serology for viruses associated with acute or chronic hepatitis with or without - Liver biopsy showing CAH <u>Drug-Induced Hepatitis</u> Temporal relationship between exposure to suspected drug and onset of ALF Exclusion of other causes

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	Mushroom Intoxication Temporal relationship between mushroom ingestion and onset of ALF Exclusion of other causes Other Viral HSV - anti-HSV IgM positive and anti-HSV IgG negative - four fold increase between acute and convalescent sera or - HSV seen in liver tissue EBV - anti-EBV IgM or - EBV seen in liver tissue CMV - anti-CMV IgM positive and anti-CMV IgG negative - four fold increase between acute and convalescent sera or - CMV seen in liver tissue Indeterminate Exclusion of all the above diagnoses based on history, serology, and other laboratory tests.
COMMENTS	Record additional information not collected elsewhere on the form. When referring to a specific item on the form, record the section and question number with the comment.