Orders

Cirrhosis Admission Adult

More detailed information supporting cirrhosis order sets is available at the cirrhosiscare.ca website. Consider specialty referrals for circumstances such as hepatocellular carcinoma, management of decompensated cirrhosis and assessing potential candidacy for liver transplantation.

Note that cirrhosis syndrome-specific order groups (panels) appear at the end of this set. These can also be opened independently as panels. Consider merging this order set with other appropriate set(s), such as:

- Alcohol Withdrawal Adult Order Set
- Electrolyte Disturbance Order Panel
- Gastroenterology Ascites Fluid Analysis Panel
- Transfusion Medicine Adult (packed cells)
- Plasma Protein Product Albumin 25% Panel

- Cirrhosis Care (Guidance)

General

Notify Primary Care Physician of patient admission

☐ Notify Primary Care Physician of patient admission

Goals of Care Designation Orders

Conversations leading to the ordering of a Goals of Care Designation (GCD) Order, should take place as early as possible in a patient's course of care. The Goals of Care Designation Order is created, or the previous GCD Order is affirmed or changed resulting from this conversation with the patient or, where appropriate, the Alternate Decision-Maker. Select a GCD order below and document the content of conversations and/or decisions on the Advanced Care Planning (ACP)/GCD Tracking Record.
Specify on the GCD order, if there are specific clarifications to this GCD Order. Document these clarifications on the ACP/GCD Tracking Record as well.

- ○ GCD-R1
- ○ GCD-R2
- ○ GCD-R3
- ○ GCD-M1
- ○ GCD-M2
- ○ GCD-C1
- ○ GCD-C2

Isolation

Suspected or Known:	Required Isolation Type: Airborne	Airborne & Contact	Contact	Contact & Droplet	Droplet
Antibiotic Resistant Organism (ARO) (e.g. MRSA, VRE, CPO)			X		
C. difficile infection			X		
Chickenpox		X			
Gastroenteritis – infectious, no vomiting			X		
Gastroenteritis – infectious, vomiting				X	
Group A *Streptococcus*, invasive infection				X	
Influenza-like Illness				X	
Measles	X				
Meningitis – Bacterial or cause unknown					X
Meningococcus, invasive infection					X
Mumps					X
Mycobacterium tuberculosis (pulmonary)	X				
Mycoplasma pneumoniae					X
Pertussis					X
Respiratory tract infection, viral				X	
Rubella (German measles)					X
Shingles - Disseminated		X			

- Safety and Precautions - Refer to Infection Prevention and Control (IPC) guidelines

- ○ Initiate Airborne Isolation
- ○ Initiate Airborne and Contact Isolation
- ○ Initiate Contact Isolation
- ○ Initiate Contact and Droplet Isolation
- ○ Initiate Droplet Isolation

Diet and Nutrition

Diet and Nutrition

Recommended that majority of patients receive High Protein/ High Calorie diet. If clinically required, both High Protein/High Calorie and low sodium diet (2 grams of sodium) can be selected.

- ☐ Adult Diet Regular; High Pro High Cal
  Now or Specify Date/Time
- ☐ Adult Diet Regular; 2000 mg/2 g Na; High Pro High Cal
  Now or Specify Date/Time
- ☐ NPO Diet
  Now or Specify Date/Time
- ☐ Oral Nutrition Supplements; Ensure Protein Max
  3 TIMES DAILY, Give at time of medication administration. Note: This Medpass can be used to increase calories and protein and is appropriate when patient is on any type of oral diet including gluten free and diabetic. Suitable for lactose intolerance but NOT appropriate for dairy allergy. Give 3 to 5 times per day.
- ☐ Total Fluid Intake (TFI)
  Until discontinued

Patient Care

Precautions and Safety

- [ ] Must Be Up for Meals
  Patient should be upright and fully alert during all oral intake and for 30 minutes afterwards.

Activity

- ( ) Mobilize Patient
  - [ ] Ambulate
    3 times daily, Mobilize by ambulating at least daily progressing to at least 3 times daily in hallway
  - [ ] No Activity Restrictions: Up in Chair TID with Meals
  - [ ] Nursing Communication - Notify Physiotherapist
    Notify Physiotherapist if prehospital mobility concerns or if patient requires more than one-person assist
- ( ) No Activity Restrictions
- ( ) Bed Rest With Expections
- ( ) Strict Bed Rest

Vital Signs

- [ ] Vital Signs
  Per protocol, Every 2 hours for 8 hours, THEN every 4 hours
- [ ] Vital Signs
  Every 4 hours
- [ ] Vital Signs
  Every 8 hours
- [ ] Vital Signs
  Every 12 hours
- [ ] Vital Signs
  Per protocol
- [ ] Nursing Communication - Do Not Record Vital Signs

Intake and Output

- [ ] Intake and Output
  Every shift

POCT Glucose

- [ ] Glucose Meter POCT
  4 times daily before meals and at bedtime, 15 to 30 minutes before scheduled meals and at bedtime, AND PRN for suspected hypoglycemia.
- [ ] Glucose Meter POCT
  Daily at Night (0200), Starting 11/1/22
- [ ] Glucose Meter POCT
  3 times daily after meals, Assess 2 hours post meal time
- [ ] Glucose Meter POCT

Height and Weight

- [ ] Weigh Patient - on Admission
  Once for 1 occurrence
- [ ] Weigh Patient
  Daily, Weigh between 0800 hours and 1000 hours.
- [ ] Weigh Patient
  Weekly
- [ ] Measure Height or Length

Patient Care Assessments

- [ ] Nursing Communication - Stool Chart
  Use stool chart flowsheet.
- [ ] Nursing Communication - Audit Score
  Until discontinued, Starting 10/1/22, Complete Audit flowsheet.
- [ ] Notify Most Responsible Health Practitioner (MRHP) - Audit Score
  Until discontinued, Starting 10/1/22, Notify MRHP if Audit score positive (greater than 3 in males and greater than 2 in females).
- [ ] Patient Education
  -Initiate patient teaching when patient / family ready. -Provide and review cirrhosis patient education. Go to Discharge Navigator > References > References/Attachments link > additional search box. Find Cirrhosis: Care Information: General Info (English). Select handout, then print (top right). -Ask patient to view cirrhosis discharge video series video available at www.cirrhosiscare.ca.
- [ ] Nursing Communication
  Please ensure that if the patient has a liver specialist in the community, the liver specialist is listed on the Patient Care Team.

NG Feeding Tube Insertion and Management

Be cautious with NG tube placement if patient has had recent variceal banding (less than 5 days). Consider GI consult if questions.

- [ ] Small Bore (Feeding Tube) Insert and Maintain

  Enteral nutrition is to be initiated only after feeding tube placement is verified as per site / zone policy, procedure or guideline, and placement should be confirmed per protocol before each use. An NG/OG Unclogging Order Panel is available on the browse.

  - [ ] Feeding Tube Insertion/Replacement - Insert NG Feeding (small bore) Tube
    Once, today at 1629, For 1 occurrence
    Insert NG Feeding (small bore) Tube
  - [ ] Adjust Head of Bed to: Other; 30-45 degrees
    Until discontinued, Starting today at 1629, Until Specified
    Head of bed adjustment: Other
    Specify the head of bed adjustment: 30-45 degrees
  - [ ] Gastric Tube Care Maintain
    Until discontinued, Starting today at 1629, Until Specified
    Action: Maintain
    Flush with: Sterile water 10mL
  - [ ] GR Chest 1 Projection

- [ ] Large Bore (Drainage Tube) Insert and Maintain
  - [ ] Gastric Tube Care Insert
    Once, today at 1630, For 1 occurrence
    Type of tube: NG tube
    Action: Insert
  - [ ] Connect to:
    - [ ] Low Suction - Continuous
      Once for 1 occurrence
    - [ ] Low Suction - Intermittent
      Once for 1 occurrence
    - [ ] Straight Drainage
    - [ ] Nasogastric Tube (Special Instructions)

- [ ] NG/OG Tube Unclogging

NG/OG Tube Unclogging

Attempt Unclogging Per Protocol
Until discontinued, Starting today at 1630, Until Specified
Unclog attempts per protocol (includes: patency check, warm water instillation)

pancrelipase 1 capsule + sodium bicarbonate 500 mg tablet

lipase-amylase-protease (COTAZYM) 10000 unit-40000 unit-35000 unit capsule 1 capsule ($0.20)
1 capsule, nasogastric tube, once, as needed, NG/OG tube unclogging, Starting today at 1629, For 1 dose
Do not crush or chew. Capsules may be opened for administration via feeding tube.

And

sodium bicarbonate tablet 500 mg ($0.11)
500 mg, nasogastric tube, once, as needed, NG/OG tube unclogging, Starting today at 1629, For 1 dose

Indwelling Urinary Catheter Management

- [ ] Insert Indwelling Urinary Catheter
- [ ] Urinary Catheter - Discontinue
- [ ] Urinary Catheter - Discontinue
  Discontinue Once on Unit

Respiratory Interventions

- [ ] Oxygen therapy: Titrate oxygen to maintain saturation range of SpO2 92% to 96%
  Oxygen Therapy: All presentations EXCEPT Acute Coronary Syndrome, known CO2 retainers and Carbon Monoxide poisoning. All other presentations (including pregnancy and acute stroke) should adhere to the above Sp02 goals. NOTE: For acute stroke, do not apply supplemental oxygen unless SpO2 is under 90%:
- [ ] Oxygen therapy: Known CO2 retainer (Sp02 88% to 92%)
- [ ] Oxygen Therapy: All Acute Coronary Syndromes (ACS)
  When SpO2 is under 90%, titrate Oxygen to maintain saturation range SpO2 90-92%
- [ ] Notify Provider (MRHP) - if Oxygen flow increases by greater than 2L/min from previous to maintain the same level of oxygenation, or if there is a progressive increase in the work of breathing
  If Oxygen flow increase by greater than 2 L/min from previous to maintain the same level of oxygenation or if there is a progressive increase in the work of breathing
- [ ] Notify Provider (MRHP) - If a new change to Oxygen Flow of 8L/min or Higher to maintain same level of oxygenation
  if new change to Oxygen flow of 8 LPM or higher to maintain same level of oxygenation

Laboratory Investigations - Routine

Hematology

- [ ] CBC with differential
  Once

Chemistry

Consider Liver Disease work-up panel if new diagnosis of cirrhosis and hasn't previously been done. Alpha Fetoprotein if clinical need or not completed in prior 6 months. Vitamin D if not completed in prior 6 months.

- [ ] Aspartate Amino Transferase (AST)
  Once
- [ ] Alpha Fetoprotein (AFP)
  Once
- [ ] Alanine Amino Transferase (ALT)
  Once
- [ ] Bilirubin, Total
  Once
- [ ] Albumin
  Once
- [ ] Urea
  Once
- [ ] Creatinine
  Once
- [ ] Electrolyte Panel (Na, K, Cl, CO2, Anion Gap)
  Once
- [ ] Glucose, Random
  Once
- [ ] Calcium
  Once
- [ ] Magnesium
  Once
- [ ] Phosphate
  Once
- [ ] 25-Hydroxy Vitamin D
  Once
- [ ] Lactate
  Once

Coagulation

- [ ] INR

Therapeutic Drug Monitoring and Toxicology

- [ ] Ethanol Level
- [ ] Alcohol Panel (Ethylene Glycol, Methanol, Isopropanol, Acetone)
- [ ] Acetaminophen Level

Blood Gas

Consider ABG if:

- Patient is critically ill
- Patient shows signs of carbon dioxide retention (e.g. acute breathlessness or drowsiness, increased respiratory rate)
- Patient is at risk of metabolic conditions
- Unexpected or inappropriate drop below 94% SpO2 while patient is awake
- Increased breathlessness or drop of greater than or equal to 3% SpO2 when patient with chronic hypoxemia was previously stable

- [ ] Blood Gas Venous POCT
  Once for 1 occurrence
- [ ] Blood Gas Arterial POCT
  Once for 1 occurrence
- [ ] Inpatient Consult to Respiratory Therapy

Laboratory Investigations - Repeating

Hematology

- [ ] CBC and Differential
  Daily Morning, for 7 occurrences

Chemistry

- [ ] Aspartate Aminotransferase (AST)
  Daily Morning, for 7 occurrences
- [ ] Alanine Aminotransferase (ALT)
  Daily Morning, for 7 occurrences
- [ ] Alkaline Phosphatase (ALP)
  Daily Morning, for 7 occurrences
- [ ] Bilirubin, Total
  Daily Morning, for 7 occurrences
- [ ] Albumin
  Daily Morning, for 7 occurrences
- [ ] Creatinine
  Daily Morning, for 7 occurrences
- [ ] Urea
  Daily Morning, for 7 occurrences
- [ ] Electrolyte Panel (Na, K, Cl, CO2, Anion Gap)
  Daily Morning, for 7 occurrences
- [ ] Calcium
  Daily Morning, for 3 occurrences
- [ ] Magnesium
  Daily Morning, for 3 occurrences
- [ ] Phosphate
  Daily Morning, for 3 occurrences

Coagulation

- [ ] INR
  Daily Morning, for 7 occurrences

Diagnostic Imaging

General Radiology

- [ ] GR Chest 2 Projections

Computed Tomography

- [ ] CT Abdomen Enhanced
  Once
- [ ] CT Abdomen
  Once

Ultrasound

- [ ] US Abdomen Complete 2 or more Organs
  Once

Magnetic Resonance

- [ ] MR Abdomen
  Once

Fluids/Electrolytes

IV Maintenance

- [ ] Initiate IV: Intravenous Cannula - Insert
- [ ] Saline Lock IV
- [ ] sodium chloride 0.9% flush injection ($9.00)
  2-5 mL, IV lock, every 8 hours, as needed, maintenance of line patency

IV Fluid Boluses

- [ ] lactated Ringer's bolus ($1.58)
  intravenous, once
- [ ] sodium chloride 0.9 % bolus ($3.00)
  intravenous, once

IV Fluid Infusions

- [ ] ringers lactate infusion ($2.00) ⓘ
  intravenous, continuous
- [ ] sodium chloride 0.9% infusion ($4.75)
  intravenous, continuous
- [ ] dextrose 5% - sodium chloride 0.45% infusion ($1.00)
  intravenous, continuous
- [ ] dextrose 5% - sodium chloride 0.9% infusion ($0.50)
  intravenous, continuous

Medications

Analgesics and Antipyretics

- [ ] acetaminophen tablet ($0.10)
  650 mg, oral, every 6 hours, as needed

Antiemetics

- [ ] dimenhyDRINATE PO/IV
- [ ] metoclopramide PO/IV
- [ ] onsansetron PO/IV
- [ ] ondansetron DISINTEGRATING tablet

Vitamins and Minerals

- [ ] vitamin D3 (cholecalciferol) tablet ($0.02)
  1,000 units, oral, daily
- [ ] folic acid PO/IV
- [ ] multivitamin PO/IV
- [ ] thiamine IV (For suspected Wernicke's encephalopathy)
- [ ] thiamine PO/IV (For Wernicke's prophylaxis dosing)

Consults/Referrals

IP Specialty Consults

- [ ] Inpatient Consult to Infectious Diseases
- [ ] Inpatient Consult to Critical Care Medicine (Intensivist)
- [ ] Inpatient Consult to Nephrology
- [ ] Inpatient Consult to Addiction Services
- [ ] Inpatient Consult to Pharmacy

IP Allied Health Consults

Consider Physiotherapy or Occupational Therapy Consults if routine screens positive for functional dependence, immobility, or fall risk.
Consider Discharge Planning consult if two or more ED visits / admissions in the past year, need for alternate level of care, etc.
Consider Social Work consult if unstable housing, finances, complex psychosocial concerns.

- [ ] Inpatient Consult to Physical Therapy
- [ ] Inpatient Consult to Occupational Therapy
- [ ] Inpatient Consult to Discharge Planning
- [ ] Inpatient Consult to Social Work
- [ ] Inpatient Consult to Dietitian
- [ ] Inpatient Consult to Speech Language Therapy

Cirrhosis Specific Order Panels

Alcohol Associated Hepatitis Adult Panel

Consider US Liver Biopsy (Percutaneous or Transjugular) if patient has MELD greater than 20 or Maddrey's DF greater than or equal to 32 and there is uncertainty about the clinical diagnosis.

Consider POCT glucose monitoring when corticosteroids are used.

For patients with alcohol withdrawal, open and merge the Alcohol Withdrawal (CIWA) order set. If using CIWA order set, Lorazepam is the drug of choice in liver disease.

- [ ] Additional Work Up
- [ ] GR Chest 2 Projections
  Routine, Once
- [ ] US Abdomen Complete 2 or more Organs
  Routine, Once
- [ ] US Liver Biopsy with Surgical Pathology order
- [ ] IR Liver Biopsy Transjugular with Surgical Pathology order
- [ ] Medications
- [ ] Glucose Meter POCT
  4 times daily

For more information, open the specific panels.

Alcohol Use Disorder in Cirrhosis Adult Panel

If patient has moderate to severe alcohol use disorder (more than 3 DSM 5 criteria), consider inpatient or outpatient referral to addiction services (811 or 1-866-332-2322), in conjunction with pharmacologic therapy. Pharmacologic therapies to prevent relapse have not been directly evaluated in patients with alcoholic hepatitis. Please review product monographs before prescribing and use all agents with careful monitoring (see cirrhosiscare.ca)

For more information, open the specific panels.

- [ ] Patient Education
  Once for 1 occurrence, Nursing is to provide and review alcohol education. Nursing is to go to discharge Navigator > References > References/Attachments link > additional search box. Find Alcohol and Drug Problems (English). Select handout, then print (top right). - Nursing to document teaching.
- [ ] Medications

Ascites Hepatic Hydrothorax, Edema in Cirrhosis Adult Panel

Panel is for adult patients with volume overload secondary to cirrhosis. If new onset of ascites or hydrothorax, a work up is suggested (eg: Diagnostic paracentesis, abdominal ultrasound with doppler, diagnostic thoracentesis).

For more information, open the specific panels.

- [ ] Electrolyte Panel, Urine, Random
- [ ] Diuretics
- [ ] Antibiotic Prophylaxis for prior SBP

Hepatic Encephalopathy Adult Panel

In making a diagnosis of hepatic encephalopathy, other causes of decreased level of consciousness must be considered. All patients with presumed hepatic encephalopathy need work up/treatment for potential precipitating factors (including but not limited to an infection screen with diagnostic paracentesis if they have ascites, medication assessment, screen for metabolic abnormalities, and assessment for evidence of GI bleeding).

For more information, open the specific panels.

- [ ] Monitor Bowel Routine - Stool charting
- [ ] Microbiology
- [ ] Urine General Toxicology Panel
- [ ] GR Chest 2 Projections
  Routine, Once
- [ ] Medications

Spontaneous Bacterial Peritonitis (SBP) or Spontaneous Bacterial Pleuritis, Cirrhosis Adult Panel

For adults with cirrhosis diagnosed with Spontaneous Bacterial Peritonitis (ascites PMN greater than 250 cells/mm^3) or Spontaneous Bacterial Pleuritis (pleural fluid PMN greater than 500 cells/mm^3 or greater than 250 cells/mm^3 with positive culture).

Recommendations for Plasma Protein Albumin infusions (ordered using the Plasma Protein Albumin 25% panel):
Day 1 - Albumin 25% (100ml=25g) IV 1.5 g/kg. Maximum dose is 400ml (100g) per day.
THEN
Day 3 - Albumin 25% (100ml-25g) IV 1g/kg on day 3 of SBP treatment. Maximum dose is 400ml (100g) per day.

For more information, open the specific panels.

- [ ] Blood Culture Panel - Adult x 2
- [ ] Diagnostic Imaging
- [ ] Medications

Liver Disease Work Up Adult Panel

- [ ] Standard Investigations
- [ ] Additional Investigations based on patient history

Renal Dysfunction in Cirrhosis Adult Panel

For adult patients with cirrhosis and new onset renal dysfunction. Assess for precipitants (eg. nephrotoxic medications, volume depletion, GI bleeding (consider endoscopy) and infection including diagnostic fluid sampling of ascites or hydrothorax fluid (limiting volume to <5L if significant renal dysfunction, etc).
For patients with suspected hepatorenal syndrome who have not had improvement of creatinine after 48 hours of appropriate treatment (albumin/volume repletion, discontinuation of offending agents) consider open and merge: Hepatorenal Syndrome (HRS) Order Panel.

Consider opening and merging Gastroenterology Ascites Fluid Analysis panel.

Recommendations for Plasma Protein Albumin infusions (ordered using the Plasma Protein Albumin 25% panel):
Albumin 25% (100ml=25g) IV 1 g/kg/day for 48 hours if AKIN 2 or 3. Maximum dose is 400mls (100g) per day.

Consider Bladder Scan if high risk for post renal obstruction.

- [ ] Bladder Scan
- [ ] Intake and Output
  Every shift
- [ ] Urine
- [ ] Microbiology
- [ ] GR Chest 2 Projections
  Routine, Once
- [ ] US Kidneys and Bladder
  Once
- [ ] Inpatient Consult to Nephrology

For more information, open the specific panels.

Hepatorenal Syndrome (HRS) Adult Panel

If working up initial renal dysfunction, use Renal Dysfunction in Cirrhosis panel first.

For patient with renal dysfunction in the setting of liver disease that is unlikely to be ATN or post-obstructive renal dysfunction AND without improvement of creatinine after 48 hours of appropriate treatment (volume repletion, discontinuation of offending agents).

Recommendations for Plasma Protein Albumin infusions (ordered using the Plasma Protein Albumin 25% panel):
Albumin 25% (100ml=25g) IV 1.5 g/kg on day 1 and 1 g/kg on day 3 of SBP treatment. Maximum dose is 400mls (100g) per day.
Reconsider need for albumin on a daily basis and consider discontinuing if serum albumin normalizes.
THEN
Day 3 - Albumin 25% (100ml-25g) IV 1g/kg on day 3 of SBP treatment. Maximum dose is 400ml (100g) per day.

For more information, open the specific panels.

- [ ] Medications
- [ ] Specialty Consults

Variceal Bleed Adult Panel

For patients with a suspected or confirmed variceal bleed.
For stable patients, a hemoglobin threshold of 70 g/L is recommended before initiating Packed Red Blood Cells transfusion; unstable or actively bleeding patients may need transfusion at a higher hemoglobin threshold.
Transjugular intrahepatic portosystemic shunt may be an option in some patients with refractory bleeding-suggest consult liver specialist if considering.

- [ ] Inpatient Consult to Gastroenterology
- [ ] EGD Procedure Order (only intended for use by prescriber who will be performing the procedure).
- [ ] Medications

For more information, open the specific panels.