

# ***IMPACT*** of **Chronic** **Liver Disease**

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## on **Healthcare Systems**

Supported by an educational grant from Mallinckrodt Pharmaceuticals and Grifols, S.A.

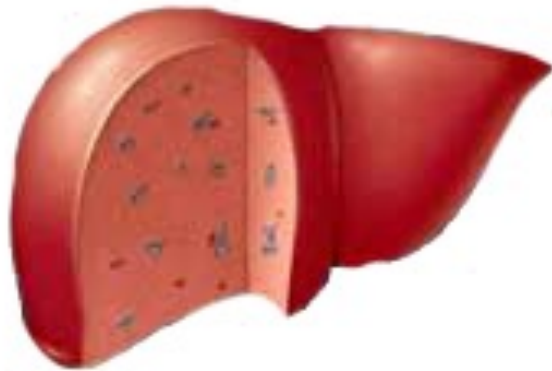
# Chronic Liver Disease Quality Assessment and Indicators for the Practicing Healthcare Provider

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Section of Gastroenterology and Hepatology  
Baylor College of Medicine  
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# Cirrhosis Is the Final Common Pathway of All Chronic Liver Diseases

**Normal Liver**



Hepatitis C

Alcohol use



Non-alcoholic fatty liver disease

Hepatitis B

Other chronic liver diseases

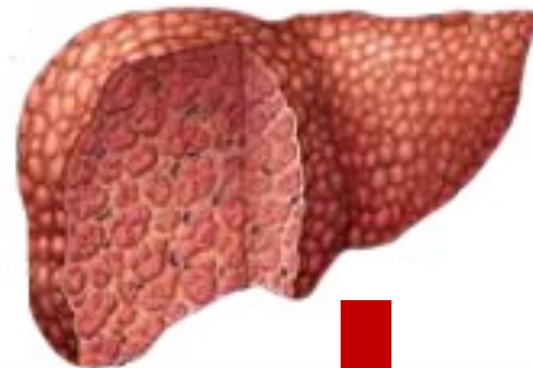
(hemochromatosis, Wilson,

A1AT, autoimmune hepatitis, PBC, PSC)

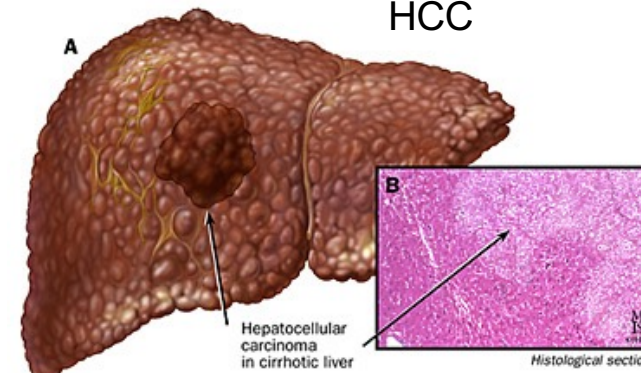
Vascular: Budd Chiari

CF, GSD, biliary injury, methotrexate

**Cirrhosis**



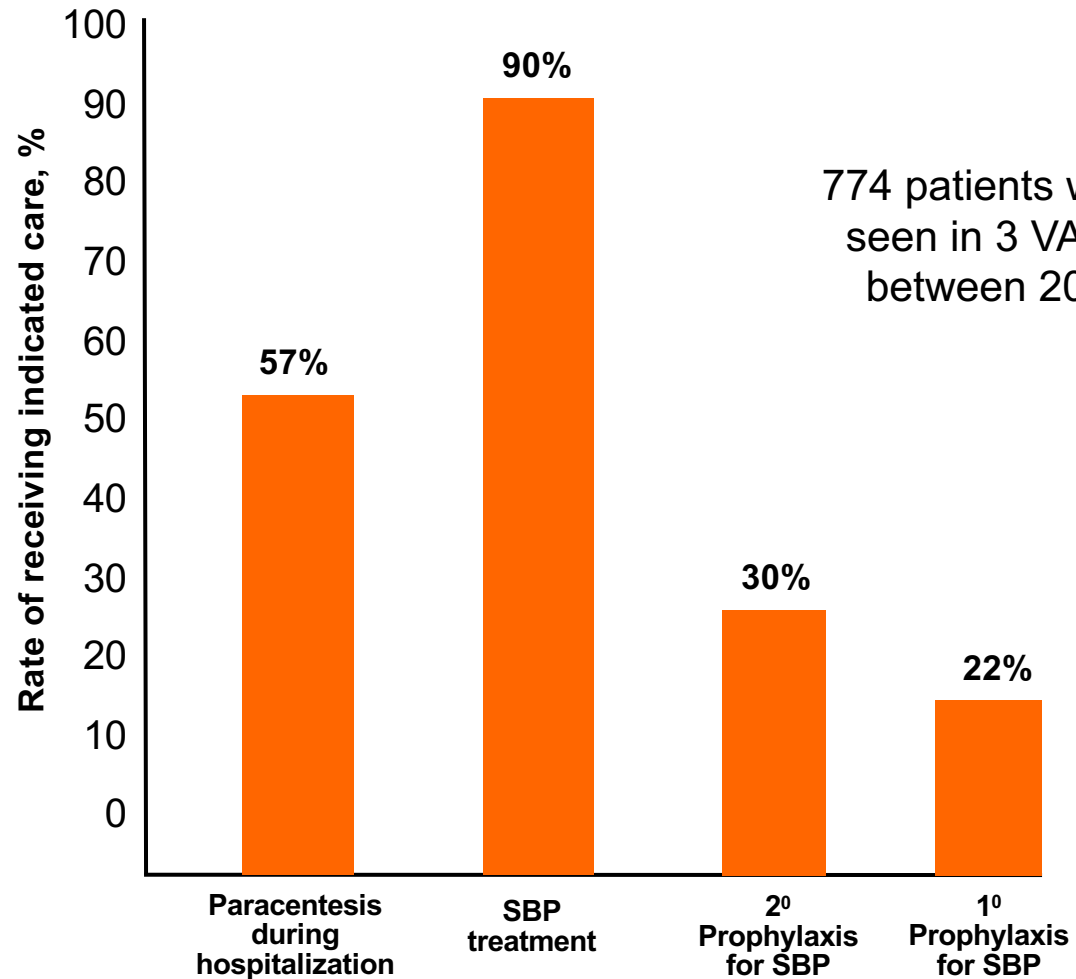
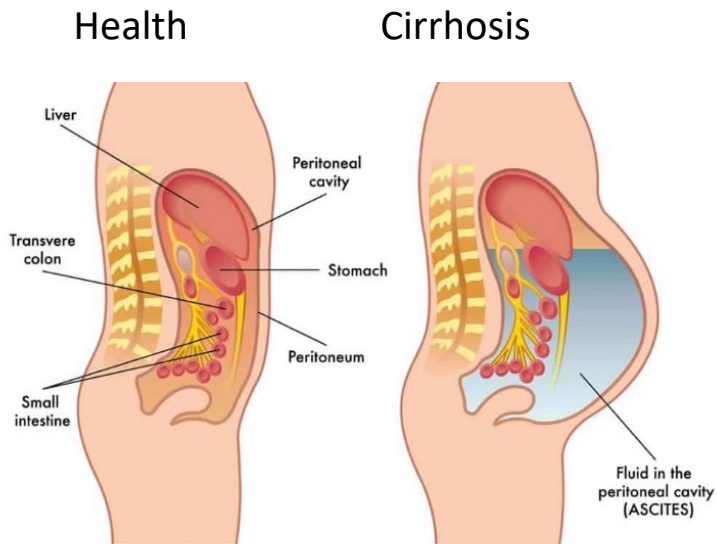
**HCC**



# Measuring Quality of Care

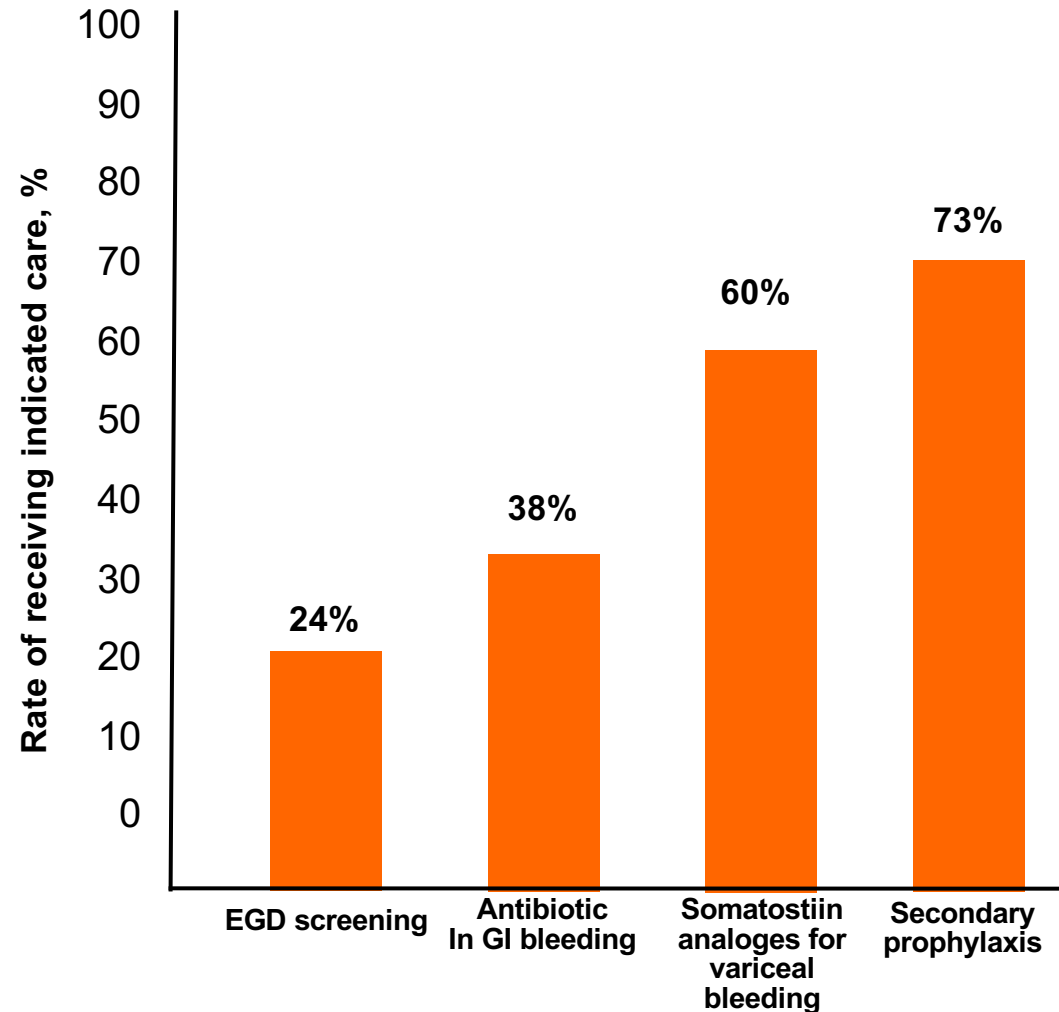
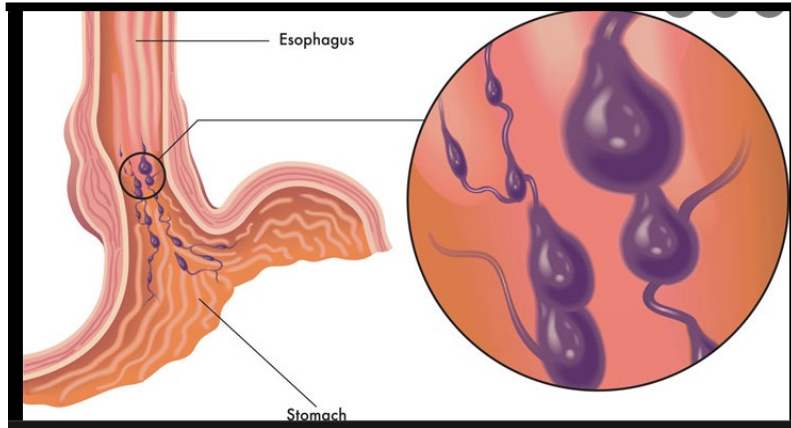
- Criteria for quality assessment:
  - Common condition
  - Effective treatments exist
  - Documented quality gaps

# Ascites Related Care Retrospective Cohort of Cirrhosis Patients



774 patients with ascites  
seen in 3 VA hospitals  
between 2000-2007

# Varices Related Care Retrospective Cohort of Cirrhosis Patients



# Failures in the Transplantation Process Impede Access to Liver Transplantation

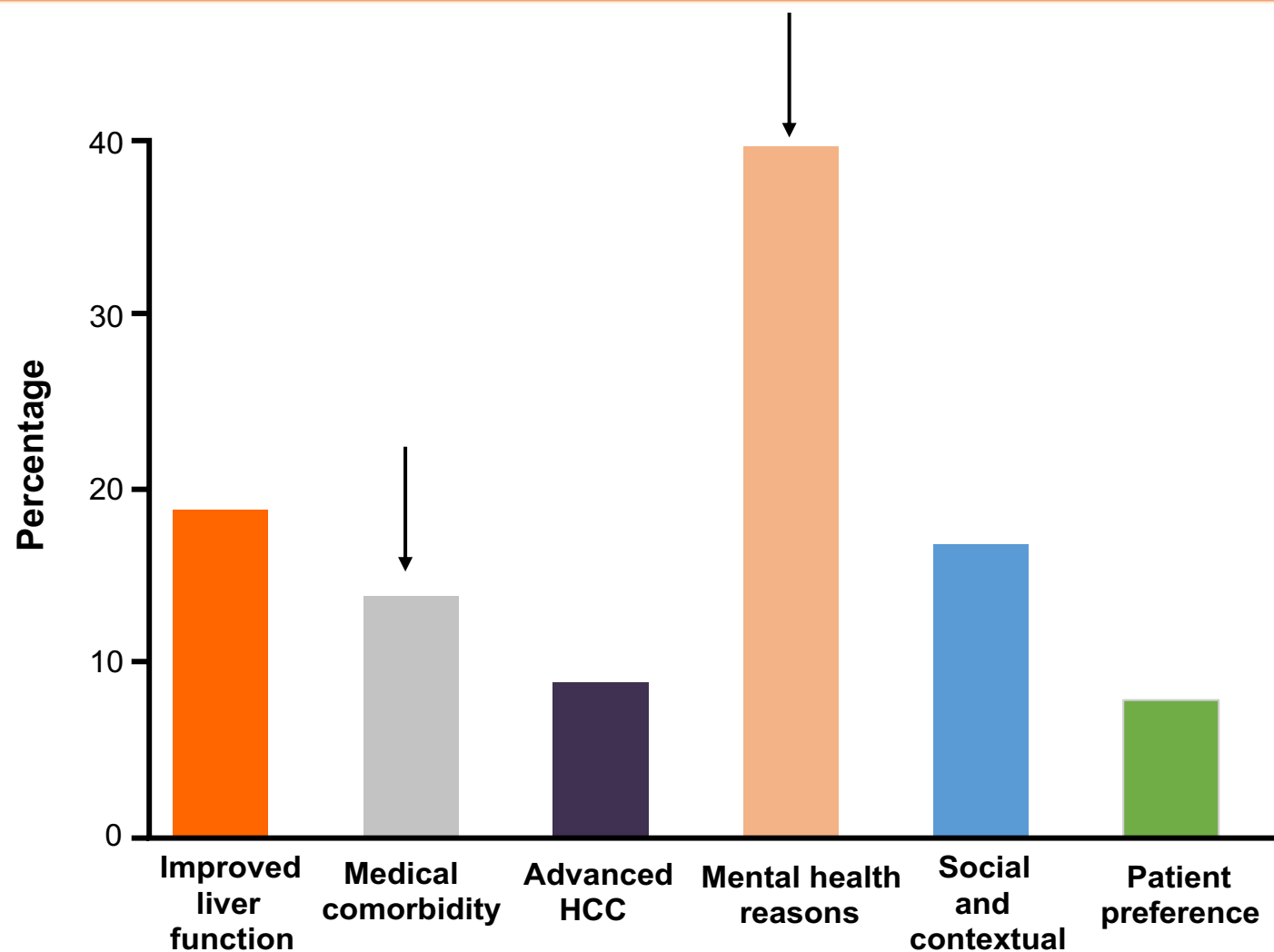
**34,494** cirrhosis patients meeting clinical indications for liver transplantation in the national Veterans Affairs

**4.5%**  
Referred

**3.0%**  
Listed

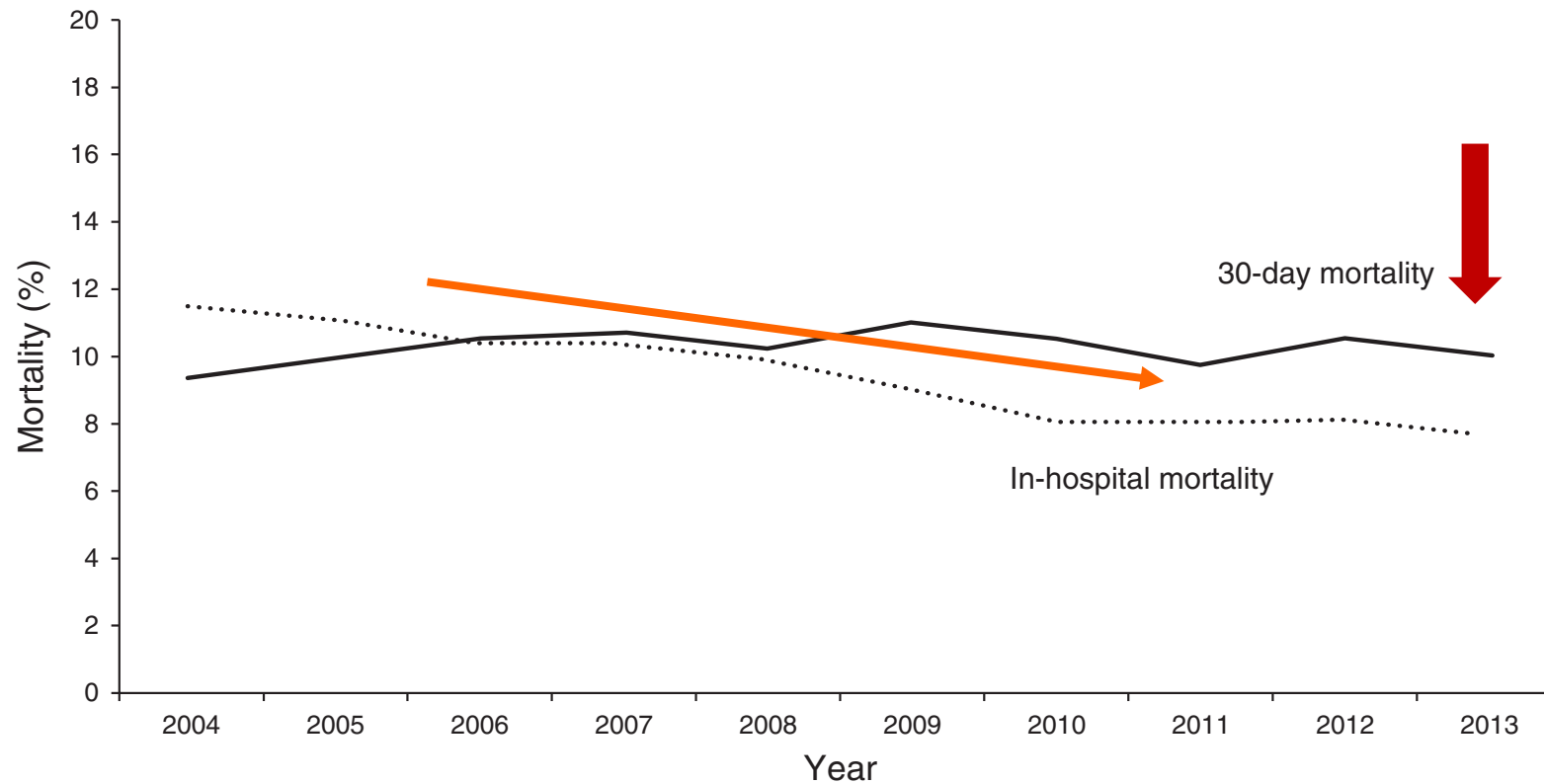
**1.8%**  
Transplanted

# Medical and Psychosocial Comorbidity Explained Most Instances of Under-Referral





# Cirrhosis Outcomes are Not Improving Over Time



109,358 unique patients hospitalized with cirrhosis between 2004 and 2013. In-hospital mortality decreased from 11.4 to 7.6%, whereas 30-day mortality increased from 9.3 to 10.1%

# Summary – 1

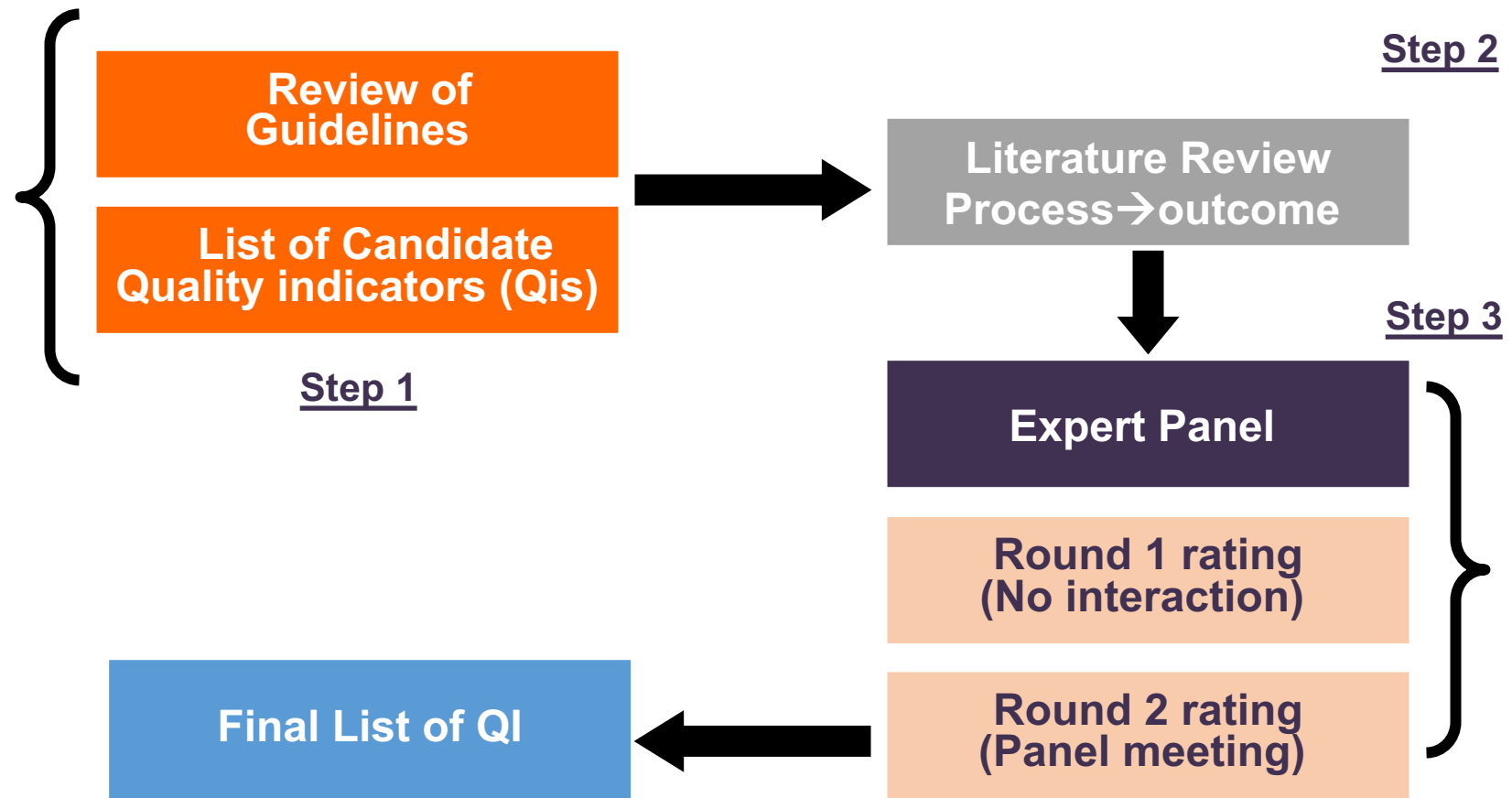
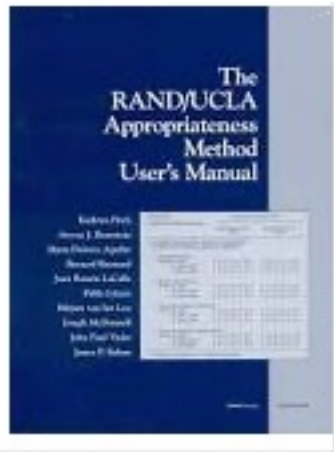
- Quality of cirrhosis care leaves room for improvement
- The first step towards improving the quality of cirrhosis care is to try to measure such care

# Measuring Quality of Care

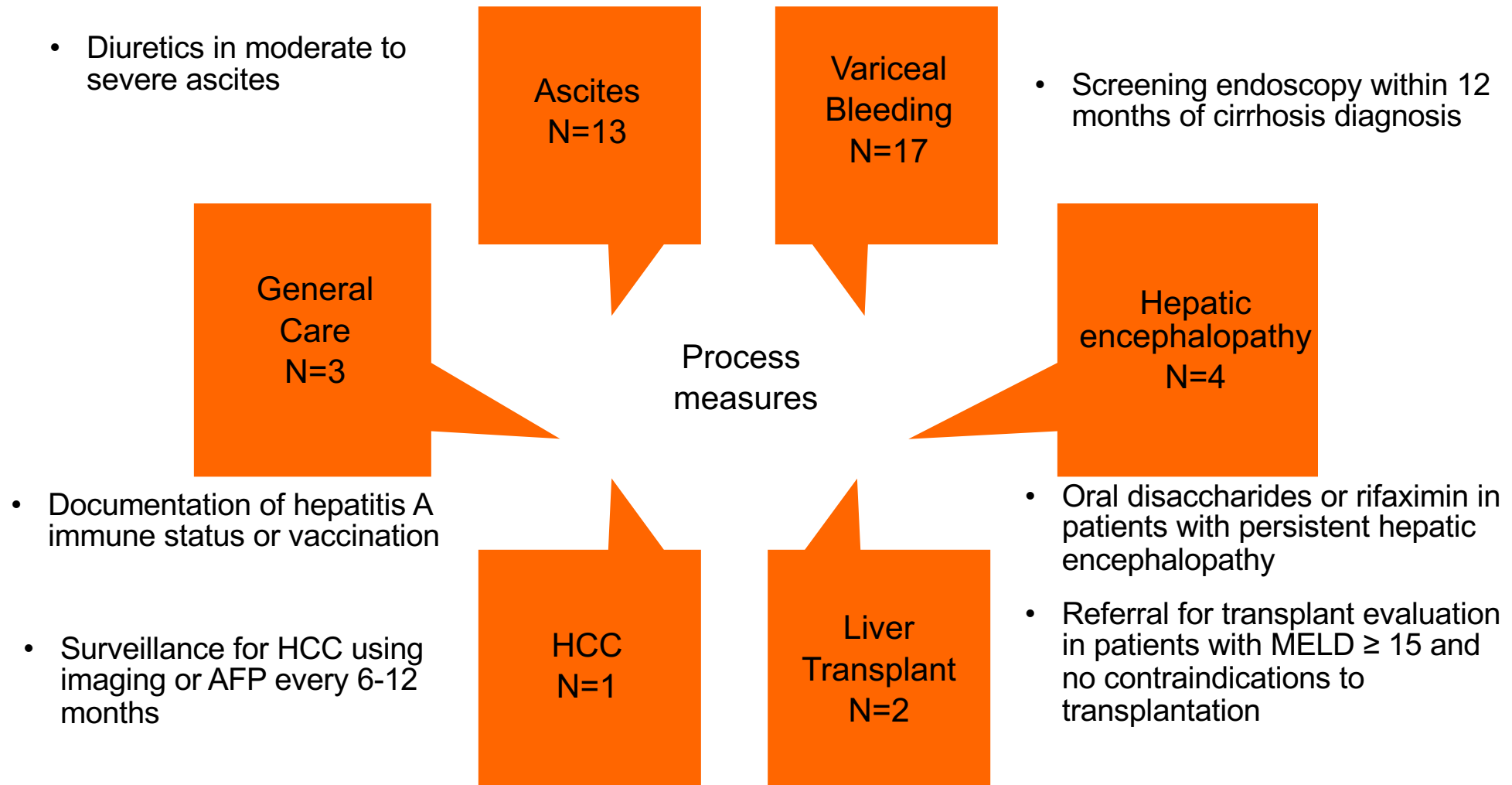
- Methods for quality assessment:
  - Implicit, e.g., case review
  - Explicit, e.g., use of quality indicators (QIs)
- QI is a statement about:
  - Process of care with a strong link to desired outcome/s (e.g., # on beta-blockers for variceal bleeding)
  - Outcomes of care (e.g., # with readmissions)

# An Explicit Quality Indicator Set for Measurement of Quality of Care in Patients With Cirrhosis

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# Process Based Cirrhosis QIs



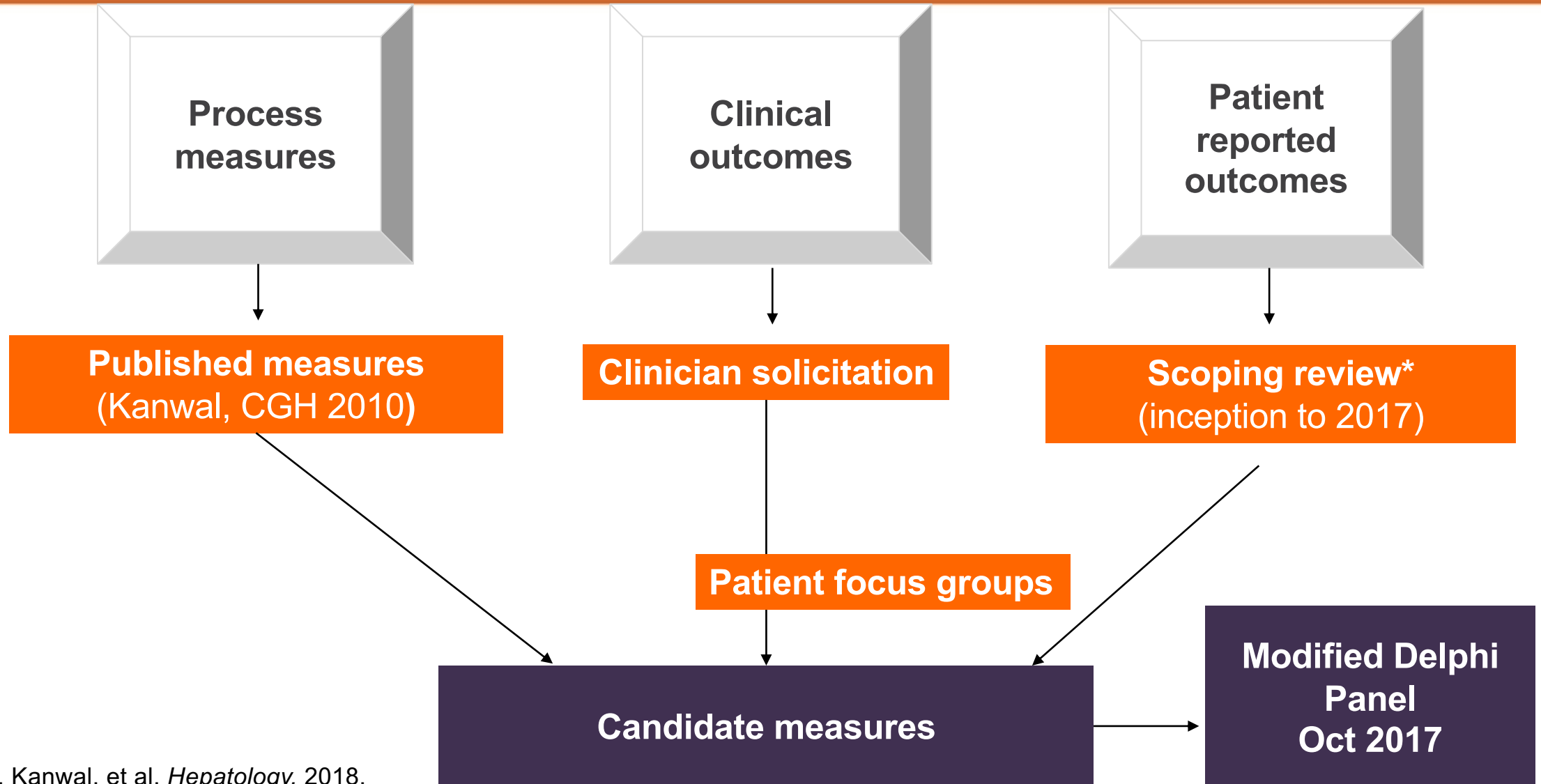
# Development of Quality Measures in Cirrhosis by the Practice Metrics Committee of the American Association for the Study of Liver Diseases

2018

Fasiha Kanwal,<sup>1-3</sup> Elliot B. Tapper,<sup>4</sup> Chanda Ho,<sup>5</sup> Sumeet K. Asrani ,<sup>6</sup> Nadia Ovchinsky,<sup>7</sup> John Poterucha,<sup>8</sup> Avegail Flores,<sup>9</sup>

**1** Victor Ankoma-Sey,<sup>10</sup> Bruce Luxon,<sup>11</sup> and Michael Volk<sup>12</sup>

# AASLD Cirrhosis Measures



\*Tapper, Kanwal, et al. *Hepatology*. 2018.

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**26**  
Process  
measures

**7** Clinical  
outcomes

**13**  
Patient  
reported  
outcomes



# AASLD Cirrhosis Measures

**7** Clinical  
outcomes

Patient survival  
First variceal bleeding  
Variceal rebleeding  
Early-stage HCC ←  
Liver related hospitalization ←  
Rehospitalization within 30 days

**13**  
Patient  
reported  
outcomes

Ascites ←  
Ankle swelling  
Confusion  
Concentration and memory  
Pruritis  
Muscle cramps  
Falls  
Depression ←  
Stigma of having liver disease  
Medication side effects  
Ability to drive  
Burden on family  
Ability to avoid alcohol



CIRRHOSIS QUALITY  
COLLABORATIVE



## ABOUT CIRRHOSIS QUALITY COLLABORATIVE [CQC]

American Association for the Study of Liver Diseases (AASLD)'s Cirrhosis Quality Collaborative (CQC) is a multi-site Learning Health Network (LHN) that combines quality improvement and research to improve the care and treatment outcomes of patients with cirrhosis.

At launch, 10 health systems from across the USA had joined the CQC. Early efforts focused on laying the foundation for quality improvement (QI) and research, including the development of a centralized web-based registry, QI training for members, planning and identifying local care quality gaps, and development of tools and materials to support active improvement and research.

## PARTICIPATING SITES

- Baylor College of Medicine and Baylor-St. Luke's Medical Center
- Baylor Scott & White Health, Dallas
- Icahn School of Medicine at Mount Sinai
- Loma Linda University Medical Center
- Massachusetts General Hospital/Harvard
- Stanford University Medical Center
- Sutter Health/California Pacific Medical Center
- University of Michigan Medical Center
- University of Minnesota Medical Center
- Weill Cornell Medicine

## GOVERNANCE

The CQC Steering Committee provides oversight to the CQC LHN, registry development, and operations. The Committee oversees the design, implementation, management, and sustainability of the registry and ensures successful progress of the CQC LHN. Members of the committee are listed below:

- Meena Bansal, MD, FAASLD, Chair
- John R. Lake, MD, FAASLD
- Sumeet K. Asrani, MD, MSc
- Elliott B. Tapper, MD
- Lalit K. Gupta, MD

The CQC was developed and is being led by Fasiha Kanwal, MD, MSHS, FAASLD and Michael Volk, MD, MSc, FAASLD.

## CONTACT US

To contact the CQC, email Sheila Tynes, CQC project manager, at [stynes@aaasld.org](mailto:stynes@aaasld.org).

# CQC Cirrhosis Measures

Outcomes	Processes
Ascites control ←	Assess for memory and concentration
Hazardous drinking	HCC screening
Abstinence from alcohol	Depression screening ←
Early-stage HCC ←	Referral to alcohol abuse program
Liver related hospitalization ←	Follow up within 2 weeks following liver related hospitalization
Survival	Liver transplant evaluation

# CQC Cirrhosis Measures

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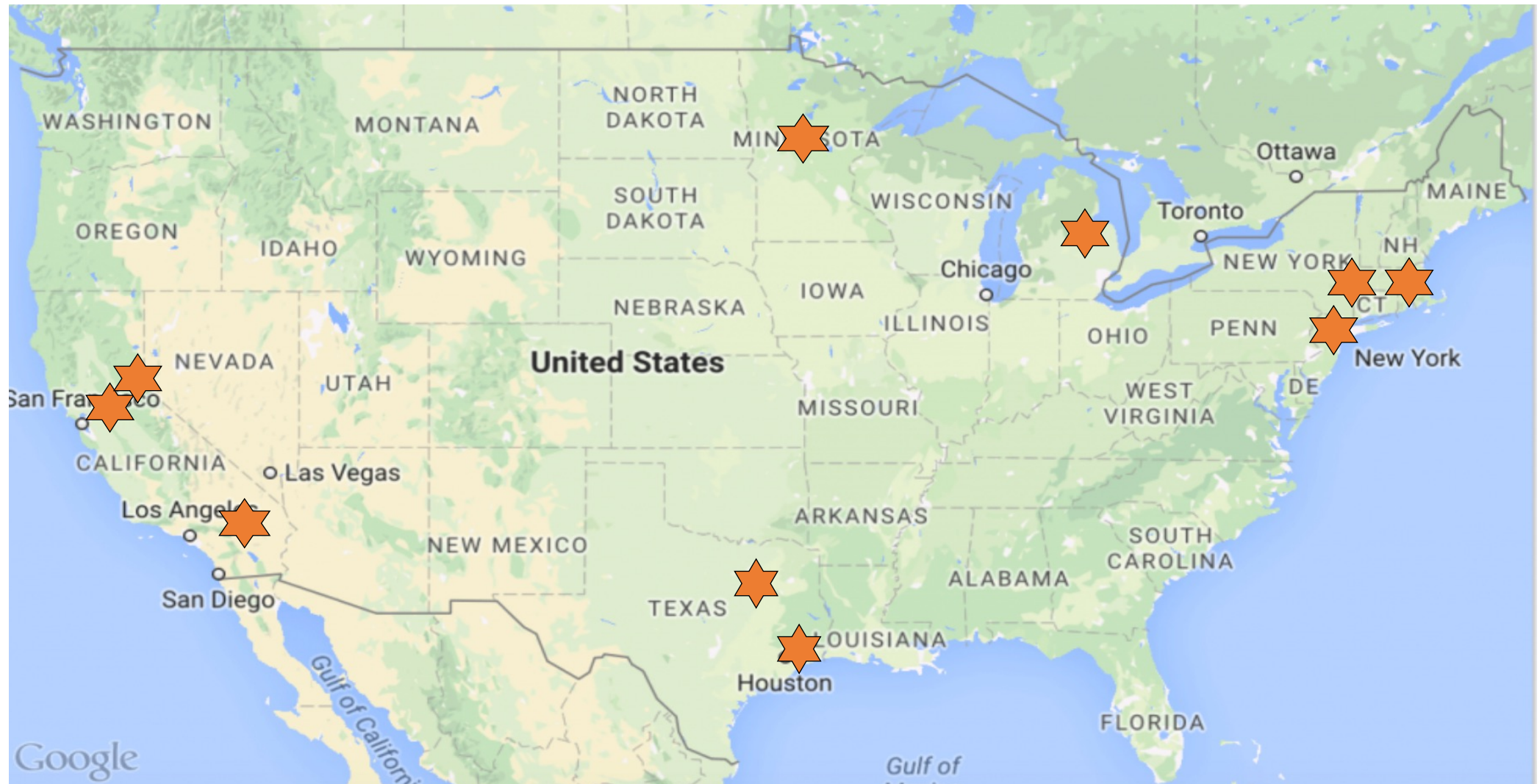
Data collected via surveys (patient reported outcomes)

# CQC Cirrhosis Measures

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Survival	Liver transplant evaluation

Data collected via EMR

# CQC Sites



# CQC Patients

- **3,499** patients enrolled with both survey and EMR data
- **29,770** patients with EMR data (health system cohort)
  - Represents patients with cirrhosis seen at 5 of the 10 sites.
- Patient characteristics
  - Median age 62-year, 46% female
  - Median MELD-Na score 15
  - Two thirds of patients have a cirrhosis comorbidity score of 0, indicating that the liver disease is their only major medical problem

# Outcome Data

Numerator: # of Survey Responses in the past 12 months with an ASI-7 Score  $\leq 15$  on most recent survey.

Denominator: # of Survey responses in the past 12 months where patient is age 18+ with decompensated cirrhosis and ascites who filled out all the Ascites Control form questions on PRO survey.

Overall Survey Response Average

**74.6%**

[Go to PRO Responses](#)

Moving 12 Month Survey Response Performance Rate



**Ascites control**

Numerator: # of Survey Responses in the past 12 months that indicated that they never have a drink containing alcohol.

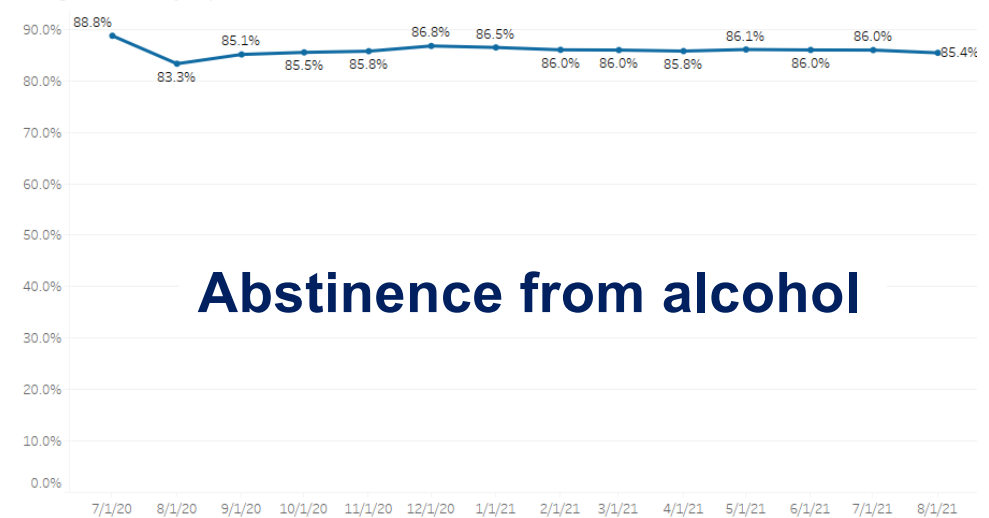
Denominator: # of Survey responses in the past 12 months where patient is age 18+ with decompensated cirrhosis who filled out the Audit-C questions on PRO survey.

Overall Survey Response Average

**85.5%**

[Go to PRO Responses](#)

Moving 12 Month Survey Response Performance Rate



**Abstinence from alcohol**



# Summary

- Data indicate shortfalls in the quality of care provided to patients with cirrhosis
  - The first step towards improving the quality of care is to try to measure such care
- Cirrhosis Quality Collaborative (CQC) is a learning collaborative with teams from different institutions who work together and learn from each other
  - CQC cirrhosis indicators serve as candidate measures that can be used in clinical practice
  - Few CQC sites have implemented PROs as part of myChart; others rely on surveys, with link sent via email.
  - We are also working on creating “smart notes” within the electronic medical record to capture data in discrete format that is currently only available as free text

# Cirrhosis Quality: Next Steps

- In 2023 and beyond, we hope to partner with payers to analyze the cost side of the healthcare value equation and develop a value-based purchasing model
- We also plan to use this platform for multi-center research studies, particularly those involving patient-reported outcomes, and submit for grant funding.
- Finally, we hope to demonstrate that these quality improvement efforts yield sustained improvement in patient outcomes

Thank You