



**Flex**  
**Monitoring**  
**Team**

University of Minnesota  
University of North Carolina at Chapel Hill  
University of Southern Maine

# **Outcome Measurement for Financial and Operational Improvement**

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December TASC 90 Call

December 9, 2021



# Learning Objectives

- Review program planning and monitoring issues
  - Theory of change
  - Output/process vs. outcomes
  - Rolling up outcome to connect interventions to desired goals
- Outcome measures for financial and operational improvement (FOI) interventions
  - Educational and collaborative learning
  - In-depth assessment and action planning
  - Revenue cycle management
  - Chargemaster reviews
  - Service line assessments
  - Market share and outmigration analyses
  - Lean and Six Sigma process improvement



# Theory of Change (TOC)

- Describes how and why a set of activities are expected to lead to short, intermediate, and long-term outcomes over time
  - Develops a causal pathway to identify necessary and sufficient outcomes needed to achieve a goal
  - Creates a roadmap that shows how a set of actions would help achieve a goal
  - Identifies and highlights interventions and assumptions that are critical to produce an outcome
  - Highlights critical areas addressed by external actors and how the project will link to them



# TOC: Key Questions

- What problematic condition exists that demands a programmatic response?
- Why does it exist?
- For whom does it exist?
- Who has a stake in the problem?
- What can be changed?



# Evaluating a TOC

- What is the causal chain of events that leads from implementation to the desired outcomes?
- Are outcomes sequenced properly?
  - Do lower-level outcomes lead to higher-level outcomes?
  - Do proposed interventions connect to desired outcomes?
- Are there any large leaps in logic or missing elements?
  - Are short-/intermediate-term outcomes necessary and sufficient to cause the higher-level outcomes?
  - Are all necessary outcomes that others are responsible for included in the TOC?
- Are there sufficient time and resources?

# Outputs vs. Outcomes

- Outputs
  - Result from successful completion of program activities
  - Examples: technical assistance provided to CAH staff
- Outcomes
  - Financial and/or operational changes/benefits to CAHs that result from program activities
  - Time specific – short, intermediate, and long term
  - Become more difficult to measure and assess impact as time horizons become longer
  - Chain of outcome evidence becomes important



# Program Chain of Outcomes

- Broad goals are difficult to measure
  - Causality/attribution is difficult to prove
  - Many entities, programs, and stakeholders impact CAHs
  - Data collection is expensive
  - Broad goals may have long time horizons
- Program's TOC provides a "chain of outcomes"
  - Describes why and how interim outcomes will monitor progress towards to proposed long term program impact
  - Interim outcomes are less expensive/easier to measure
  - Provides evidence that program is on track to achieve goals



# Evaluating Chain of Outcomes

- Do long-term outcomes represent meaningful change in participants' performance?
- Do outputs and short, intermediate, and long-term outcomes relate logically to each other?
  - Check “If-Then” relationships between outputs and outcomes
  - If accurate, then each output/outcome should be expected to result in the next outcome of the chain
- Are outcomes achievable given resources and program's influence over participants?
- Have potential negative outcomes/unintended consequences been identified?



# Revenue Cycle Improvement: Outcomes

- Short term – 1 to 2 years
  - Implement improvements to coding and billing systems
  - Reduce rejected claims and days in accounts receivable, minimize billing errors, improve speed of payment from third party payers, and reduce bad debt levels
- Intermediate-term – 3 to 4 years
  - CAHs meet industry and/or peer group benchmarks for efficient revenue cycle operations
- Long-term – 5 or more years
  - CAHs maintain industry and/or peer benchmarks for profitability (e.g., total or operating margins, return on equity) and/or liquidity (e.g., current ratio or days cash on hand)



# Measure Selection Criteria

- Relevance
- Meaningfulness and interpretability
- Scientific or clinical evidence
- Reliability or reproducibility
- Feasibility
- Validity
- Importance



# Defining and Writing Outcome Measures

- Clarity and specificity are key
  - **S**pecific
  - **M**easureable
  - **A**ttainable
  - **R**esults oriented (they must be actionable)
  - **T**imed
- Identify time frame for expected outcomes
- For which outcomes are measures necessary?
- What are the sources of data for measures?
- Extract measurable objectives from identified outcomes



# Educational Activities

- TOC: Provide context and background information to support FOI programming and share knowledge between CAHs
- Measures primarily output/process oriented
  - # of meetings, educational programs, and events held
  - # of CAHs and staff participating in meetings and events
  - % of CAHs reporting significant changes in knowledge and skills
  - % of CAHs that have implemented changes in policies and/or operations



# Collaborative Learning Activities

- TOC: Provide a foundation to implement FOI initiatives. Encourages shared learning, use of best practices, implementation of common interventions, and consistent reporting of common metrics
- Measures primarily output/process oriented
  - % of CAHs participating in collaborative activities
  - % of CAHs reporting satisfaction with their participation
  - % of CAHs implementing the common intervention
  - % of CAHs reporting data on impact throughout the project lifecycle



# In-Depth Assessments and Action Plans

- TOC: Evaluate challenges faced by vulnerable CAHs, identify areas for improvement, and provide action plans to address their vulnerabilities
- Measures primarily output/process oriented, outcome measures will depend on interventions implemented
  - # & % of CAHs receiving in-depth assessments/action plans
  - # assessment reports and action plans completed
  - # and % of CAHs implementing identified strategies



# Revenue Cycle Management

- TOC: Improve administrative functions related to claims processing and payment to ensure prompt and appropriate payment for services rendered
  - Net collection %
  - Net patient revenue per patient encounters
  - Net patient revenue as a % of total patient revenue
  - Bad debt expense as a % of total patient revenues
  - Total uncompensated care as a % of total patient revenues
  - Days in accounts receivable
  - Point of service patient collections as a % of net revenue
  - % of claims denied



# Chargemaster Review

- TOC: Identify and correct errors/omissions in a CAH's list of procedures and related codes and charges to provide a solid foundation for its revenue cycle
  - Gross price per discharge
  - Gross price per visit
  - Gross revenue per adjusted admission
  - Net revenue per adjusted admission



# Service Line Assessments

- TOC: Evaluate which service lines are essential to a CAH's long-term success, which should be discontinued, which can be improved, and which may be added based on market demand and/or the needs of the community
  - Average daily census by service line
  - Outpatient utilization by service line
  - Contribution margin (contribution to profitability) by service line
  - Acute care discharges by service line
  - Outpatient gross revenue as a % of gross patient revenue



# Market Share / Outmigration Analyses

- TOC: Quantify market share or outmigration patterns; determine where residents go for care, what services they obtain outside of the community, and why they are seeking care elsewhere; analyze factors impacting market share or outmigration
  - Inpatient market share (by service line)
  - Increase in utilization (by service line)
  - Increase in utilization by individuals living in the community compared to local population growth (by zip code)
  - Improvement in patient satisfaction
  - Changes in average daily census (or patient volume)



# Lean / Six Sigma

- TOC: Minimize waste in processes, procedures, and tasks through ongoing system of improvement (Lean). Reduce variations in care delivery by minimizing medical errors and removing defects from care processes (Six Sigma).
  - FTE personnel per adjusted average daily census
  - FTE personnel per 100 adjusted discharges
  - Salary and benefits expense per FTE personnel
  - Overhead expense as a percentage of operating expense
  - Worked hours per patient day
  - Worked hours per emergency department visit
  - Worked hours per service or visit

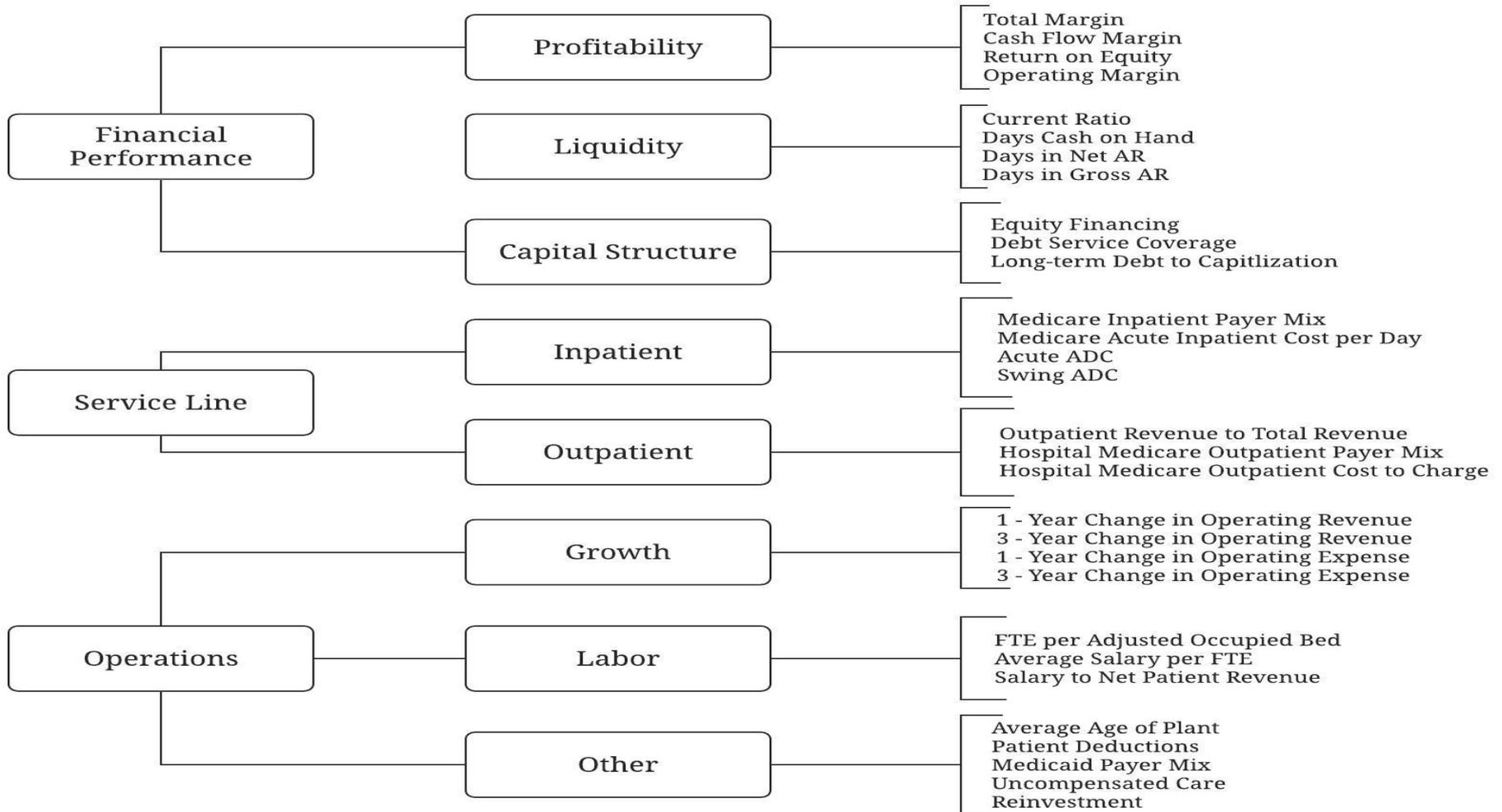


# Flex Monitoring Team Resources

- Critical Access Hospital Measurement and Performance Assessment System
  - Domains: finance and operations, quality, community benefit and health improvement
  - Searchable database of CAH-relevant performance measures in the three domains
  - Website: <https://cahmpas.flexmonitoring.org/>
- Creating Program Logic Models: A Toolkit for State Flex Programs
- Outcome Measures for State Flex Program Financial and Operational Improvement Interventions
  - Website: <https://www.flexmonitoring.org/>



# CAHMPAS Financial Domains





# Recommendations

- Reduce emphasis on output measures
  - Useful for monitoring and managing activities
  - Does not reflect outcomes/impact of activities
- “An early emphasis on outputs often obscures a clear focus on outcome measures”
- Primary focus should be on:
  - Short-/Intermediate-term outcomes (chain of evidence)
  - TOC that describe how these outcomes lead towards long-term outcomes and goals



# Conclusions

- The key points to remember are:
  - Successful programs build on a clear TOC
  - Use TOC and evidence-base for your interventions to identify potential measures
  - Be clear about data sources
  - Balance the need for original data against the costs of collecting the data
  - Roll up short, intermediate, and long-term measures to document progress towards achievement of high-level goals
  - Don't reinvent the wheel, use measures that have been tested in other programs and adapt them to your specific needs



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**Thank You!**

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This project is supported by the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under cooperative agreement #U27RH0180. The information, conclusions and opinions expressed in this presentation are those of the authors and no endorsement by FORHP, HRSA, or HHS is intended or should be inferred.