



PATHWAYS4KIDS

Supporting Evidenced Based Practices

From Evidence to Action: Leveraging Evidence and Data to Improve Outcomes

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Objectives & Conflict of Interest



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1. Explain the process of translating evidence into measurable outcomes during the development of clinical guidelines and pathways at Texas Children's.
2. Identify key data sources and metrics used to evaluate adherence and effectiveness of pediatric guidelines and pathways.
3. Select at least one practical tool or resource for capturing and analyzing data related to pathway adherence and outcome measurement.

We have no conflicts of interest to disclose.

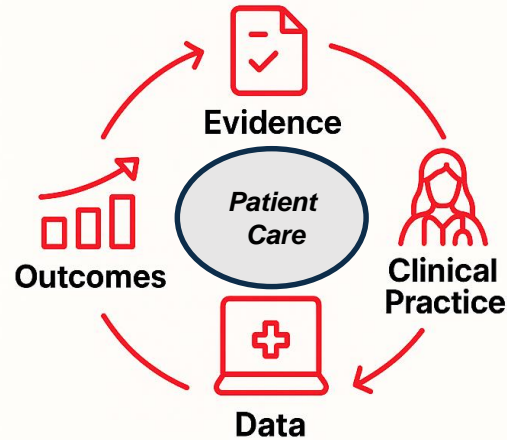


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Systems Thinking

Pathways work is systems work



Small changes in one part of the system affect outcomes across the whole pathway.





- **Location and Scope:** Houston, TX in the Texas Medical Center
- **Additional Campuses:** The Woodlands (Houston), West Campus (Houston), Austin
- **Capacity:** Over **900 beds** across all campuses
- **Specialties:** 40+ pediatric subspecialties Including Women's Pavilion and Adult Congenital Heart
- **Academic Partner:** Baylor College of Medicine



Current research to practice
time gap – 15-17 years



15-17 years

Barrier

PubMed adds
approximately
130,000 – 145,000
new citations per month

Barrier



Time

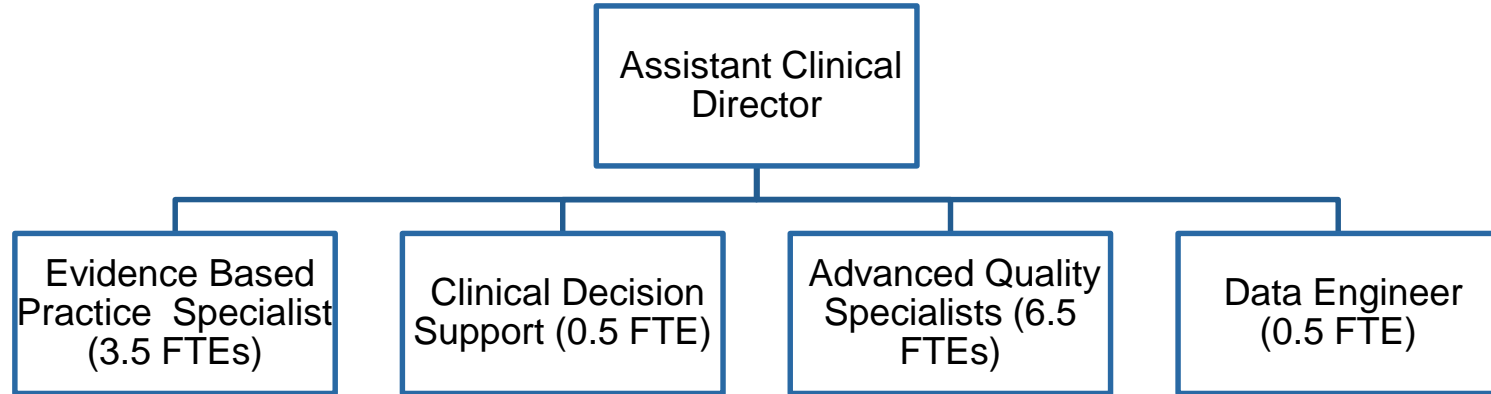




Evidence Based Outcomes Center (EBOC)

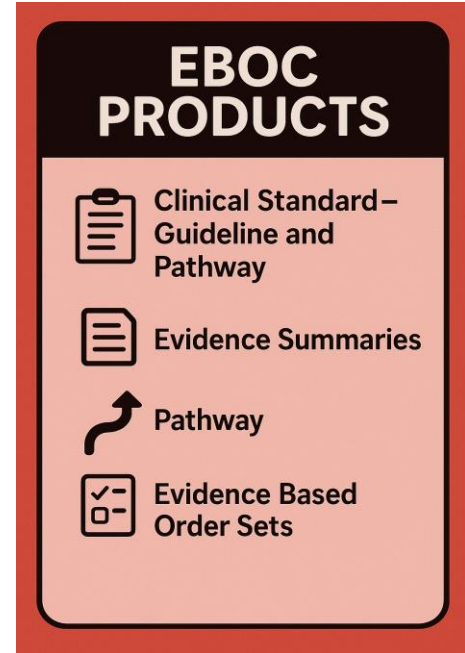
- Established in 2010 within System-wide Quality
- **Mission:** Improving the quality and safety of patient care through the **use of the best available scientific evidence to reduce variation in care and support continuous quality improvement** utilizing **clinical decision support and outcomes management**







- Evidence Based Outcomes Center (EBOC)
 - Management of “Products”
 - EBOC – multidisciplinary
 - EBOC Endorsed
 - Approximately 100
 - Evidence-based Order Sets
 - 86 active
 - Electronic Tools and Platforms
 - No clinical pathway software
 - Microsoft 365™, SharePoint™, PolicyTech™, Epic™





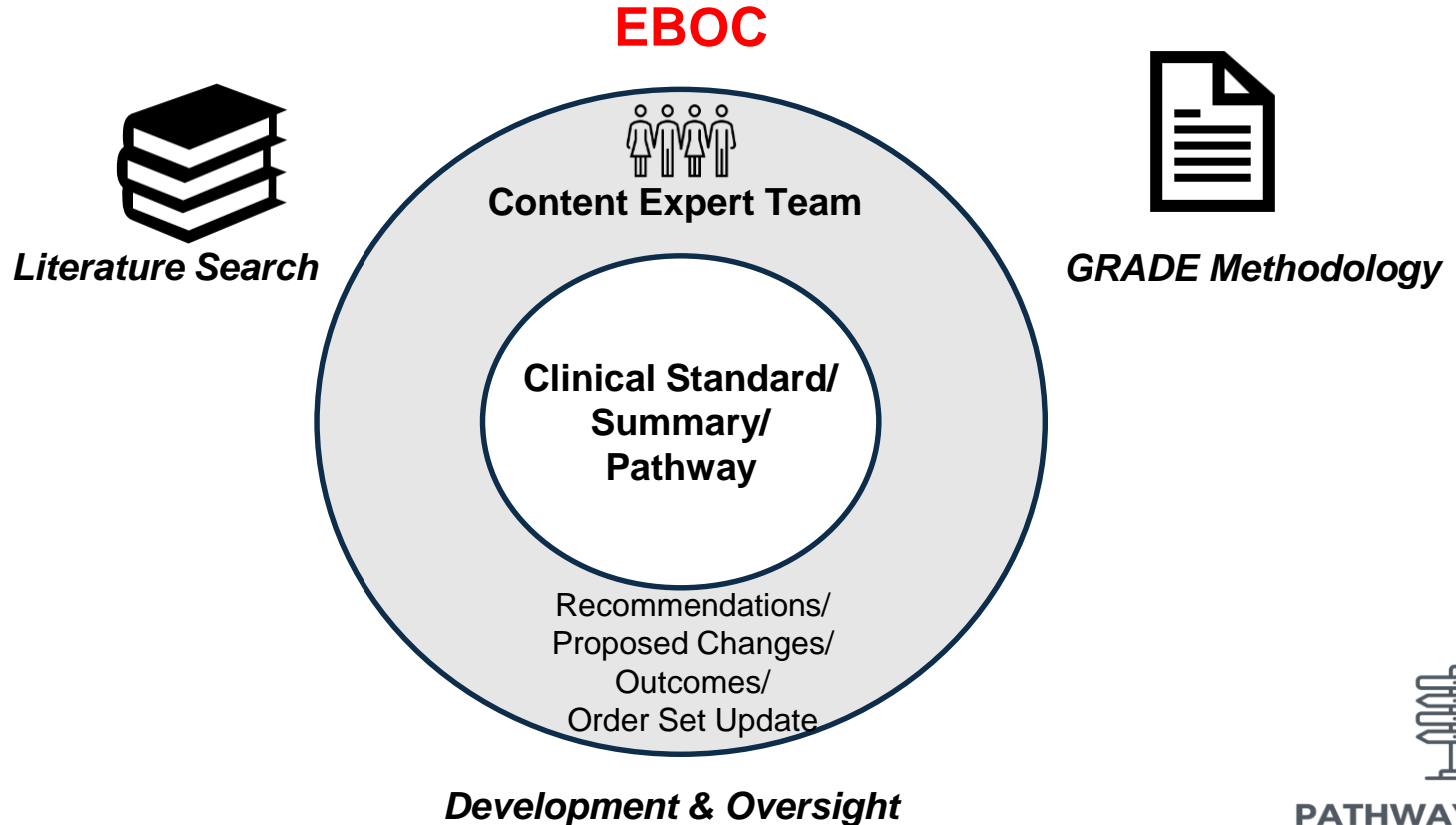
- Clinical Standards Meetings
 - Presentation/Data
 - Scorecard
 - Prioritization
 - Partnership
 - Service Level of Agreement





- Multidisciplinary Content Expert Team Meetings
 - Initial Meeting
 - Finalize PICO Questions
 - Determine outcomes
 - Quality tools
 - Adapt/Adopt National Guidelines
 - Follow-up Meetings
 - Discuss evidence/make recommendations
 - Build out guideline and pathway







Service Line & House-wide Review



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Phase	Tasks	Duration
Service Line Review	Share draft with service lines; collect comments; summarize feedback; determine outcomes	1 week
House-wide Review	Distribute via Medical Staff Services; collect comments; summarize feedback; determine outcomes	2 weeks



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Guideline Update

Skin and Soft Tissue Infection "SSTI"

Guideline Updates:

- SSTI EBOC Guideline updated to align with TCH Outpatient Antibiotic Handbook
- SSTI Guideline and Algorithm updated to reflect the use of Cephalexin as first line therapy for cellulitis
- The antibiotic table in the SSTI Guideline has been updated with the following changes:
 - Cephalexin – Dose changed to 17 mg/kg/dose every 8 hours with a max dose of 500 mg/dose
 - Clindamycin – Max dose changed to 600 mg/dose

Order Set Updates:

PA EB ACUTE SSTI VISIT [114]

- Cephalexin was moved to the top of the antibiotic options
- Removed Retapamulin
- Removed duration from all medications

EC EB SKIN AND SOFT TISSUE INFECTION [322]

- Cephalexin was moved to the top of the antibiotic options
- Oral cephalexin dose was changed to 17 mg/kg/dose every 8 hours with a max dose of 500 mg/dose
- IV Cefazolin: For patients over 40 kg: 1000 mg or 2000 mg every 8 hours
- IV Cefazolin: For patients below 40 kg: 33 mg/kg every 8 hours

IP/OBS ACUTE EB SKIN AND SOFT TISSUE INFECTION [920]

- IV Cefazolin: For patients over 40 kg: 1000 mg or 2000 mg every 8 hours
- IV Cefazolin: For patients below 40 kg: 33 mg/kg every 8 hours

For questions, please email eboc@texaschildrens.org





Clinical Standards

Evidence-Based Guidelines, Summaries, and Pathways:

*= Open for Review and Comments

**= Update in Progress

***= Under Development/New Clinical Standard

Behavioral

[Attention Deficit Hyperactivity Disorder \(ADHD\): Screening & Diagnosis- Guideline](#)

[Autism Spectrum Disorder: Screening & Diagnosis- Guideline](#)

[Second-Generation Antipsychotics Medications: Metabolic](#)

[Monitoring-CDS](#)

Musculoskeletal and Integumentary

[Osteomyelitis, Acute Hematogenous \(AHO\) and/or Septic Arthritis*- Guideline](#)

[Spinal Instrumentation: Intraoperative Infection Prevention- Pathway](#)

[Wound Care- Guideline](#)

Neonatal

Other Department Protocols

Resources created, owned, and maintained by their specific department.

[Cancer & Hematology Clinical Resources](#)

[Nursing Resources](#)

[Pediatric Critical Care](#)

[Neonate-Guidelines for Acute Care](#)

[Pediatric Emergency Medicine](#)

[Pediatric Hospital Medicine](#)


- Housed on Internal SharePoint Site with links in EPIC





EB Evidence Based Outcomes Home Pages Document Library Edit

+ New Promote Page details Preview Immersive reader Analytics



Diabetes: Diabetic Ketoacidosis (DKA)

[Guideline](#)

[Algorithm-Initial Assessment](#)

[Algorithm-Continuing Treatment](#)

[Algorithm-Transport](#)

Measures

Process

- Medical length of stay in Critical Care
- Medical length of stay in Diabetes Care Unit or Transitional Care Unit
- Total hospital medical length of stay
- # readmissions within one week of discharge

Outcome

- Time to administer subcutaneous insulin
- Incidence of cerebral edema after beginning therapy
- Time to correction of acidosis (e.g., normal anion gap <15; β -hydroxybutyrate <2; HCO_3^- >15)
- pH level on arrival
- Glucose on arrival
- GCS on arrival
- # deaths with DKA diagnosis





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Our system Patients & families Health professionals Research International

Clinical Standards

Category	Clinical Standard
Behavioral, Growth and Development	Attention-Deficit Hyperactivity Disorder (ADHD): Screening and Diagnosis
Behavioral, Growth and Development	Autism Spectrum Disorder: Screening and Diagnosis
Cardiovascular	Kawasaki Disease: Diagnosis and Management
Cardiovascular, Hematological	Vascular Thrombosis: Arterial Thrombosis
Cardiovascular, Hematological	Vascular Thrombosis: Venous Thrombosis
Cardiovascular, Nervous	Acute Ischemic Stroke
	Acute Vomiting and/or Diarrhea

- External website: <https://www.texaschildrens.org/patients-families/safety-and-outcomes/clinical-standards>





Workflow Integration



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POLICYTECH Browse

Home | My Dashboard | My Tasks | Documents | Search | Browse | Favorites | Recent | New | Assessments | Reports | Settings & Tools | More

My Relationship: All | Status: Published

Documents

Ref #	Title	Actions	Ver #	Status	Owner	Publication Date	Review Interval
11908	Clinical Algorithm for Brief Resolved Unexplained Events (BRUE) (Formerly Apparent Life-Threatening Events (ALTE))		4	Published	Betsy Jodi	07-08-2025	60 months
4763	Diagnosis and Initial Management of Brief Resolved Unexplained Events (BRUE): Clinical Guideline (Formerly Apparent Life-Threatening Event (ALTE))		6	Published	Betsy Jodi	07-08-2025	31 months

ED Track Board (WTEC)

Refresh | MSE | Discharge | Open Chart | Orders | OB Ast

Main Campus EC All Patients (74) | My Patients (7) | MD Next to S

EC South (18) | Expected (0) | PECARN Research Patients (4) | E

Bed	Patient	MD CIP?	Referral Co	No Co	On TID	MIDI/PI
15A		3				
02		3				
06A		3				
10		3				
14		3				
16		3				
11		3				
08		3				
12B		0				
17		1				
01		1				
09		4				

TCH Evidence Based Guidelines

- Stay/Well-Advisor
- Micromedex
- Opath
- TCH Formulary
- Anesthesia Resources
- UpToDate
- TCP/Practice Map
- TCP/Practices
- Community Care Practices
- Primary Care Practice at Palm Center (RPCG)
- Pediatric Psychiatric Facilities
- Attending Provider List
- Pathology Catalog
- BCM Neo Guidelines
- Critical Events Checklists
- TCH Clinical Resources Connect
- TCH Nursing Resources
- TCH Policy Tech
- Epic Essentials
- Resident Who To Contact

This will open a new window with a direct link to the internal EBOC Clinical Standards page.

https://texaschildrens.sharepoint.com/sites/EvidenceBasedOutcom...

SharePoint | Search | Levels, Betsy S. Bl...

Evidence Based Outcomes

Clinical Standards

Evidence-Based Guidelines, Summaries, and Pathways:

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Assessment Tools

Musculoskeletal and Integumentary

Pediatric Early Warning Systems (PEWS) - Summary

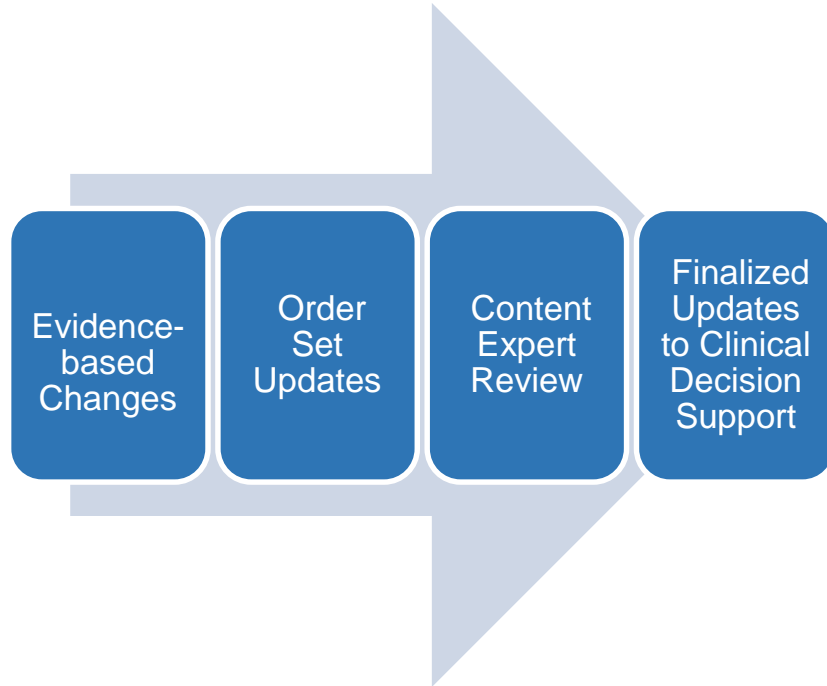
Full Risk Assessment Score - Summary

Orthostatic Acute Hematocritous (AHO) and/or Serotic Activity - Guideline

Clinical Resources Connect



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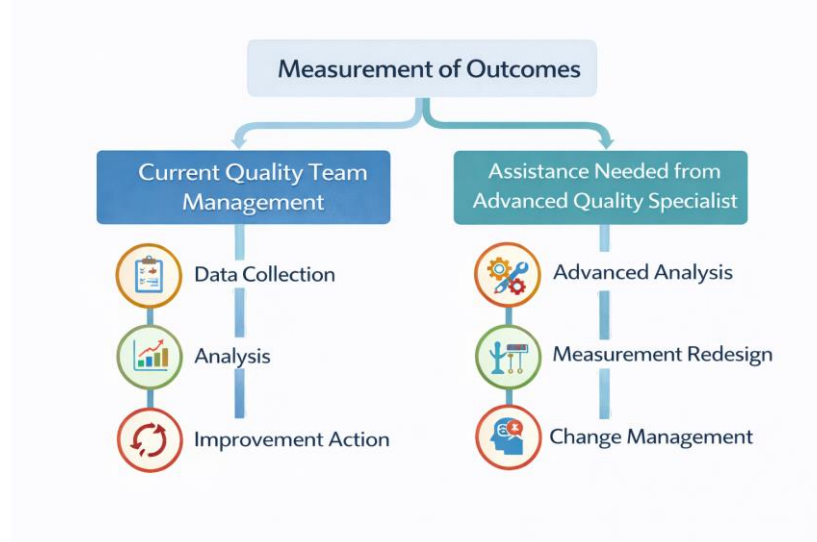
Evidence-Based Practice Specialist

- Guides content experts in applying evidence-based changes
- Supports preliminary order set updates aligned with clinical standard
- Transitions finalized content to Clinical Decision Support





- Outcome Measurement
 - Outcomes emerge through multidisciplinary discussion
 - Does not need to be “perfect”





- Topics may "belong" to an organizational interdisciplinary quality team
 - "Care Process Teams"
 - Diabetes – Diabetic Ketoacidosis
 - Asthma – Acute Asthma
 - Teams meet monthly & monitoring outcomes
- Guideline and Pathway Update and Outcomes
 - Team members from Care Process Team involved in update
 - Aware of need to monitor changes from these updates





Diabetes Care Team



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Successful team with situational awareness



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Dr. Rona Sonabend
Care Process Team Lead



Dr. Sarah Lyons
Care Process Team Lead



Mrs. Rhonda Wolfe, RN
Care Process Team Lead



Mr. Curtis Yee
Care Process Team Lead



Siripoom McKay, MD
Inpatient Process



Grace Kim, MD
Mili Vakharia, MSN,
APRN, FNP-C
Education



Melissa Marshall, RN
Daniel DeSalvo, MD
Clinic Process



Selorm Dei-Tutu, MD
Becky Butler, LMSW
At Risk Population



Bonnie McCann, MD
Lisa Setchfield
Katelyn Yzquierdo
Community Health



> 155 multidisciplinary team members • 5 Teams • 1 unified umbrella

Diabetes Care Process Team



Chronic Heart Failure (CHF) Scorecard

Balance

- Working measure then narrow via the method.

Category	Classification	Metric	IOM Domains
General	Process	Percentage of chronic heart failure patients referred to dietician clinic.	Care Coordination, Timely, Patient Centered
General	Outcome	Percentage of CHF patients not seen in the Cardiac Clinic within 4 months of last visit.	Effective, Timely
Screening	Process	Percentage of patients with a diagnosis of diabetes with HbA1c completed	Effective, Efficient
Screening	Outcome	Percentage of families screened for social drivers of health.	Equitable





Defining Measures



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Data Dictionary

Measures	Type of measure	Definition	Numerator	Denominator	Start DTS	End DTS	Exclusion
Rate of patients on HFNC	Outcome	% of encounters who were started on HFNC at any point in hospitalization	Encounters who had HFNC indicated on flowsheet xxx	Total encounters within bronchiolitis cohort	NA	NA	
Inpatient Length of Stay	Outcome	Time from admission to inpatient floor to time of discharge from hospital	NA	NA	DTS of admission to any inpatient floor	DTS of discharge from hospital	
EC Length of Stay	Balance	Time from arrival to EC to Depart from EC	NA	NA	DTS of EC arrival	DTS of EC Depart	
% of initial admission to ICU from EC	Balance	Of the encounters admitted to acute care, what % were admitted directly to the ICU	Number of patients who were admitted directly to the ICU from the EC	Total encounters within bronchiolitis cohort that were admitted			
Rate of NIPPV initiation from EC	Balance	Of the encounters admitted to inpatient, what is the % of patients who had NIPPV therapy (CPAP, BiPAP)	Number of patients who had NIPPV therapy initiated (CPAP, BiPAP)	Total encounters within bronchiolitis cohort that were admitted	NA	NA	
% of patients started on HFNC not meeting initiation criteria	Process	% of encounters who had HFNC started for CRS <7	Encounters who had a CRS less than 7 or no CRS documented within 1 hour of starting HFNC	Patients who had HFNC started at any point	NA	NA	



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Self-Service

- Excel (with QI Macros)
- Minitab
- Epic Slicer Dicer
- PowerBI
- QlikSense

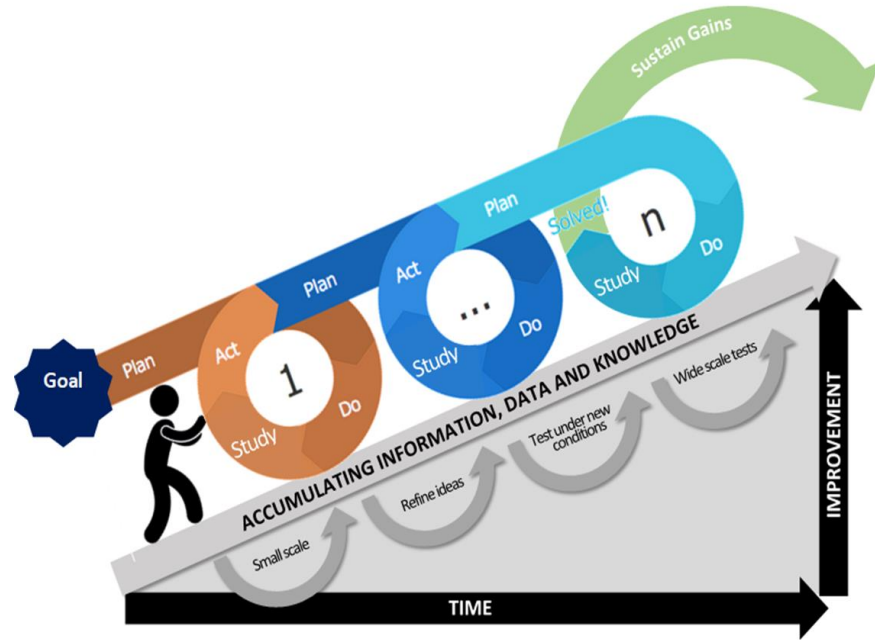
Data Request

- QlikSense Dashboards
- Epic dashboards
- TBD - Snowflake





- Think about how you want to track your data.
- Create and use a database that can track adherence to recommendations/interventions and/or patient data and outcomes
- Assessment of goals can include:
 - Intervention Utilization
 - Patient Outcomes
 - Provider Outcomes
 - Financial Impact
- Provide performance feedback to teams to sustain the improvement



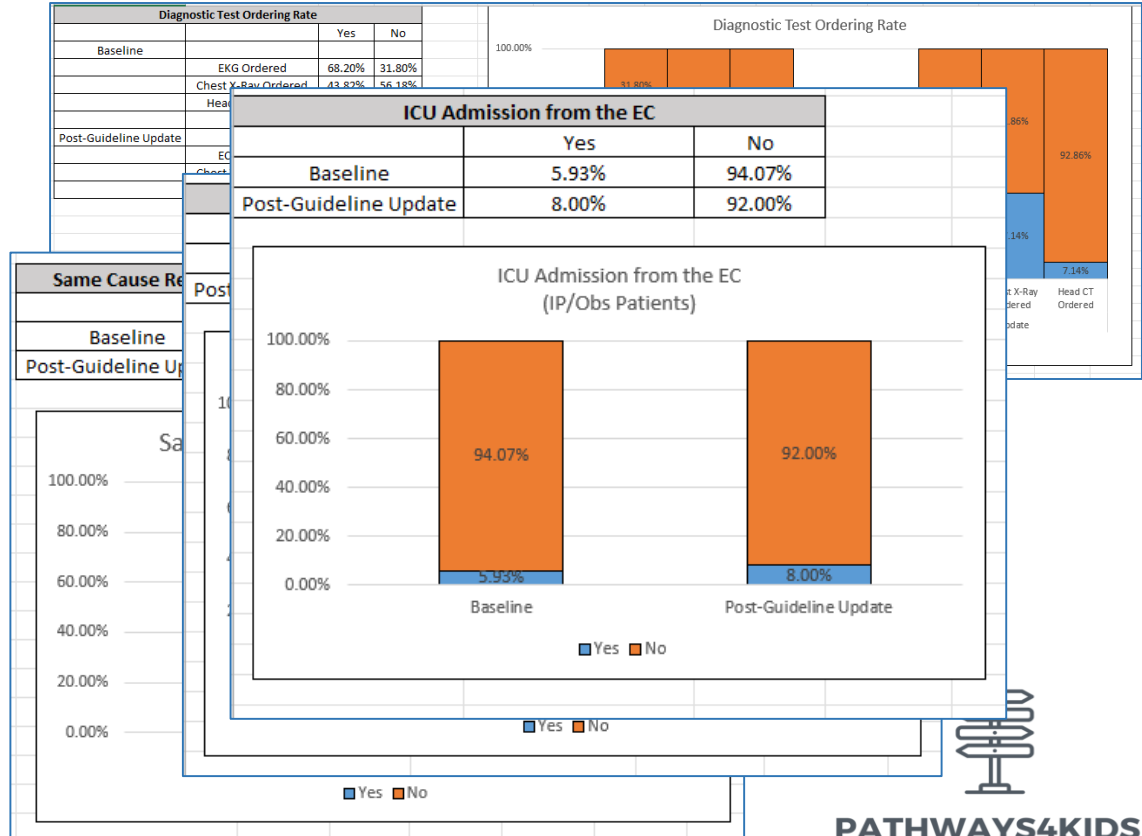


BRUE

- Metrics identified:
 - Diagnostic Testing Ordering Rate
 - Same Cause Readmission Within 30 Days
 - ICU Admission from the EC

Next Steps:

- Team decided to hold off on any QI work.



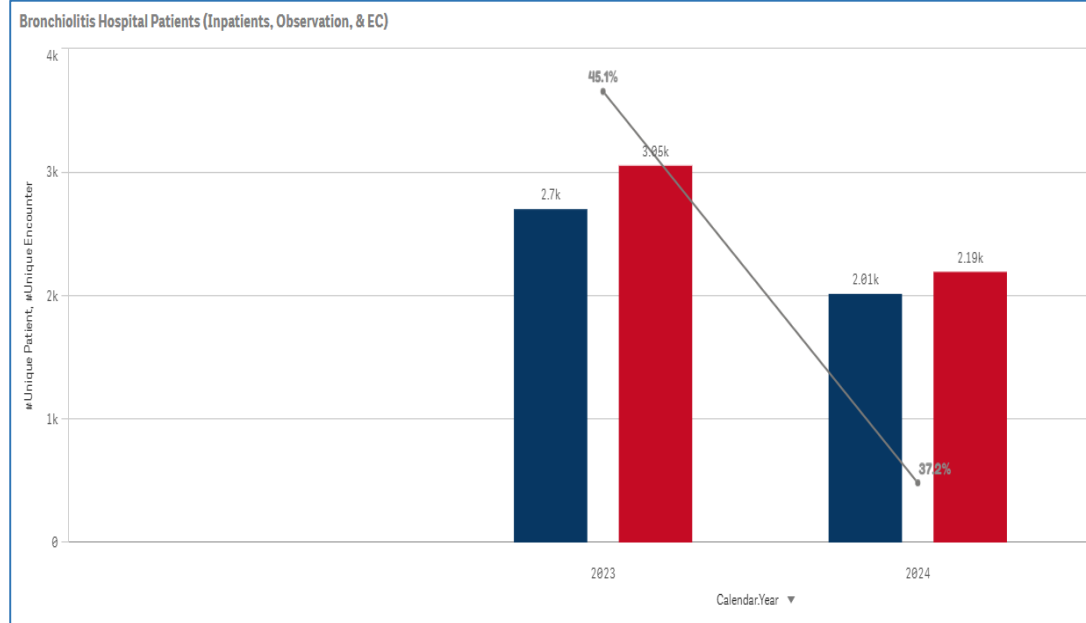


Bronchiolitis

- Convened in 2023 due to reports of overutilizing HFNC.
- Created a new bronchiolitis dashboard
- Education packet and module was created and disseminated to all teams.

Next Steps:

- Guideline undergoing updates.





- Barriers
 - Not being utilized to the full potential of the role.
 - Taking on operational responsibilities, project management assignments, data validation tasks, etc.
- Role Realignment
 - Revised quality framework.
 - Rewrote the job responsibilities to be more QI focused.
 - AQS assignment to specialties.
 - System wide communication sent to clinical and quality leaders.





- **Humility**
 - Acknowledgment of uncertainty
 - Built in review cycles
- **Excellence**
 - Rigorous methodology
- **Accountability**
 - Roles & Partnership
 - Measurement
- **Respect**
 - Multidisciplinary
- **Trust**
 - Involvement of clinicians





- Texas Children’s Success’
 - Infrastructure that has changed with needs of organization
 - Start small if necessary
 - Pathways are not “set and forget”
 - Process in place for review
 - Multidisciplinary engagement
 - Tapp into current structures for development and measurement
 - Transparency to Organization
 - Organization needs to know structure
 - Review Cycles
 - Definitions
 - Who to contact





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Contacts

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