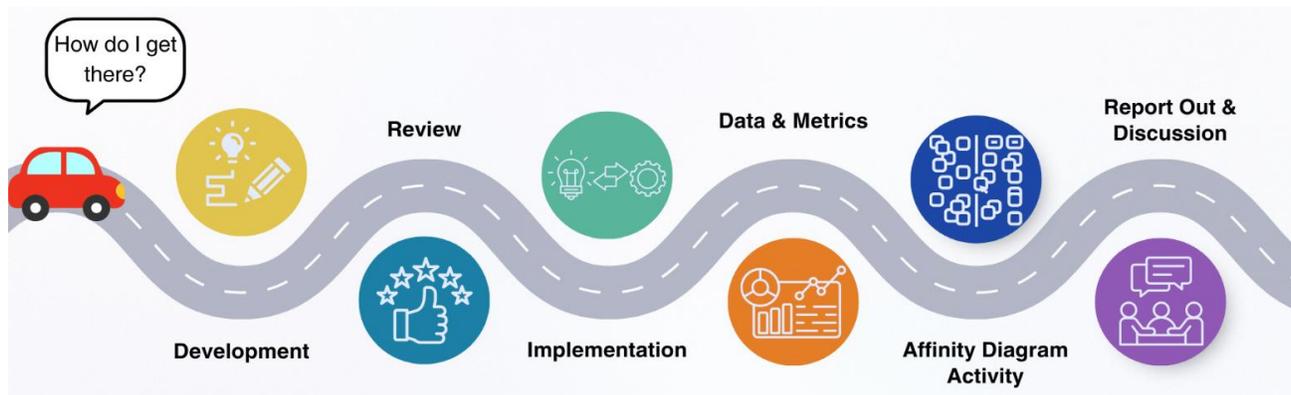


## **ICU to Behavioral Health: Using a Pathway Academy Method to Develop and Implement Pathways in a Wide Range of Care Settings**

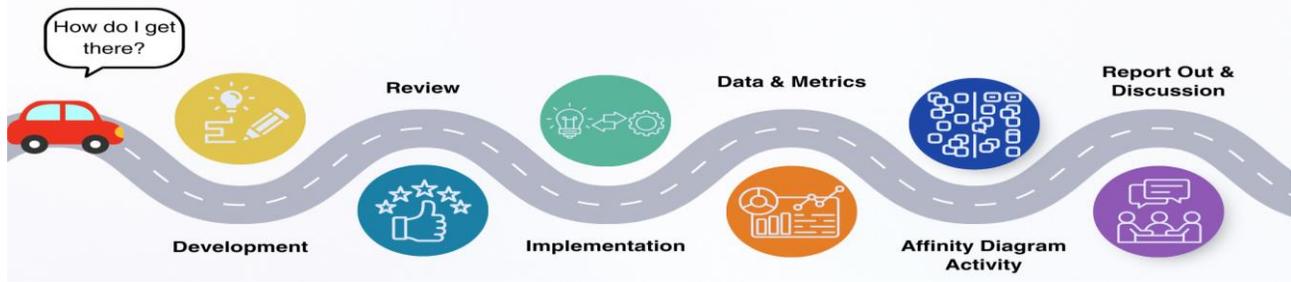


# **Workshop Handout**

## **February 9<sup>th</sup>, 2026**

*Gerd McGwire MD, PhD; Rekha Voruganti MBOE, LSSBB; Tara Dinh; Roopali Bapat MD, MSHQS; Aarti Gaglani MD; Laura Rust MD, MPH*

# PROGRAM SUPPORT



**Reflection:**

Choose 2-3 examples from above or specific to your institution. How do you currently tap into this resource? Consider next steps you can take to enhance the recruitment/support of pathway champions, pathway review, implementation and data measurement.

Resource	Use	Next Step
<i>Ex: Technology Support</i>	<i>Ex: Tracker to document pathway status &amp; dates (Go-Live, review)</i>	<i>Ex: Structure tracker to be able to automate/export/visualize data as a communication tool.</i>

**Notes:**

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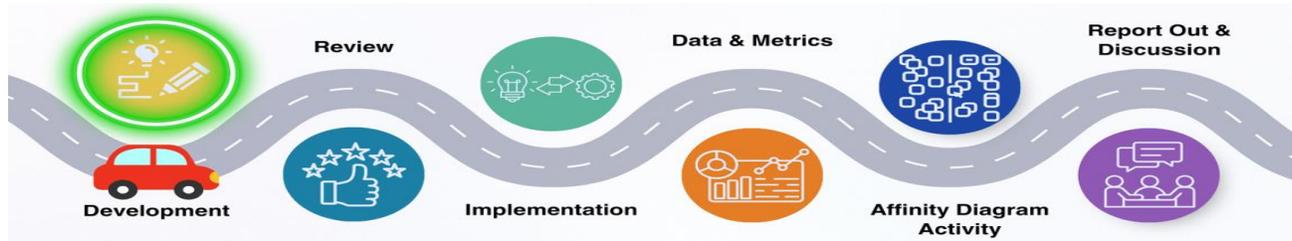


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# DEVELOPMENT



Session	Pathway Academy Lecture Topic	
Session 1	<b>Quality of Care via Clinical Pathways – An overview</b> <ul style="list-style-type: none"> <li>• Introductions</li> <li>• Clinical Pathways and Academic output</li> <li>• Clinical Pathway Development and Course Expectations</li> </ul>	
Session 2	<b>Creating a Safe and Equitable Clinical Pathway</b> <ul style="list-style-type: none"> <li>• CPP</li> <li>• Diagnostic Timeout</li> <li>• Pathway Equity</li> </ul>	
Session 3	<b>Combining Evidence, Consensus and Culture into Standardized Best Practice</b> <ul style="list-style-type: none"> <li>• PICO Questions &amp; Evidence search</li> <li>• Evidence appraisal &amp; Best practice Development</li> </ul>	
Session 4	<b>Pathway Implementation – Science vs. Human Behavior</b> <ul style="list-style-type: none"> <li>• Implementation science</li> <li>• Behavioral Economics</li> </ul>	
Session 5	<b>Clinical Pathways – Informatics Perspectives, Metrics and Data</b> <ul style="list-style-type: none"> <li>• Using Clinical Informatics to make effective pathways</li> <li>• Metrics &amp; Clinical tools</li> </ul>	
Session 6	<b>Launching the Clinical Pathway &amp; Measuring Impact</b> <ul style="list-style-type: none"> <li>• Epic Implementation</li> <li>• Pathway use and data collection</li> <li>• Planning for Final Session presentations</li> </ul>	
Session 7	<b>Final Presentation</b>	

Notes:

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# REVIEW



## Quality of Review

- Multidisciplinary team pathway development
- Multidisciplinary review process
- Frequent communications
- Alignment with hospital policy and guidelines
- Patient education/Helping Hands

## User Friendliness

- Online shared document
  - Multiple people can work simultaneously
  - Minimize redundancy - Respond/see previous comments
  - Version control
- Documentation of comments provides ready reference if questions arise during implementation

## Impact

- Multidisciplinary buy-in
- 3 step review process
  - Peer Review
  - Development/Implementation closing meeting
  - Advisory Committee

### Reflection:

Choose 2–3 challenges that you are currently facing or that you anticipate you may face. What potential solutions do you think you could incorporate at your institution? Consider who you might involve from the Program Support page.

### Notes:

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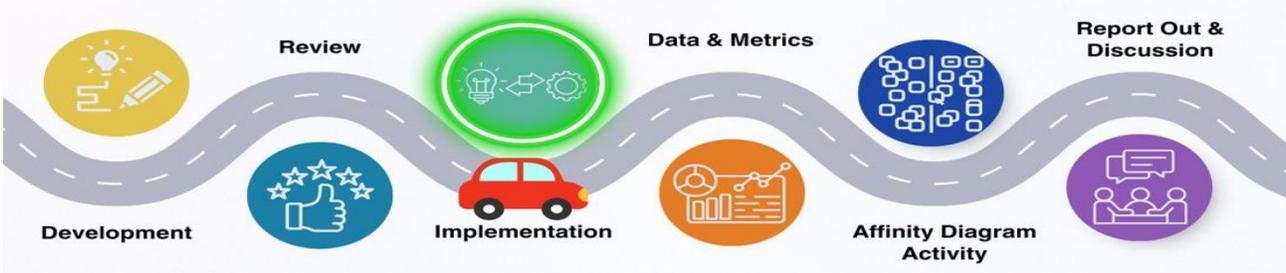


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# IMPLEMENTATION



- **Provider awareness**
  - Reaching new trainees and nurses, rotating residents
  - Pathway EHR tools
- **Dissemination of information**
  - Large number of stakeholders due to size of organization
  - Organizational culture
  - E-mail overload
- **Competing priorities**
  - EHR prioritization

**Reflection:**

*Choose 2-3 implementation challenges from above or one you are currently facing. What are some potential solutions do you think you can implement at your institution? Consider who you can involve from the Program Support page.*

Implementation Challenges	Potential Solutions

**Notes:**

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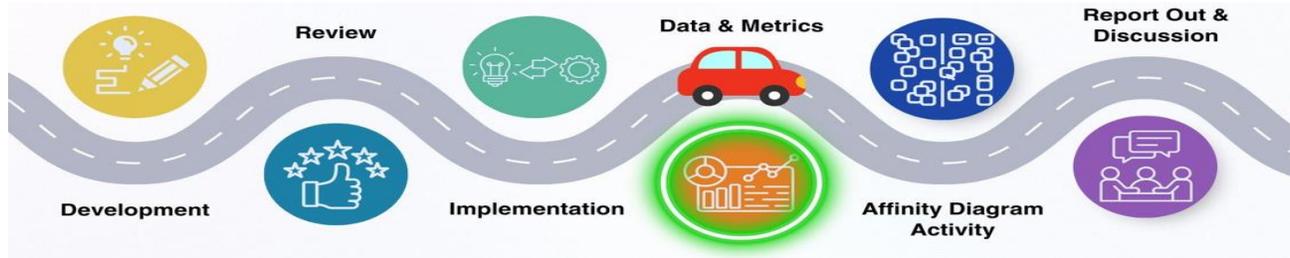


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# DATA & METRICS



## At Home Activity:

Think of a pathway population you would like to capture. How would you define it? Is there a national benchmark you could leverage as a starting point? Are there multiple ways you could approach this population?

Pathway Goals	
Pathway Goals	
External and Pathway Document Population Definitions	
US News & World Report, PHIS, AAP, QI Initiatives, Other National Benchmarks	
Clinical Pathway Document Inclusion Criteria	
Clinical Pathway Document Exclusion Criteria	
Population Inclusion Criteria	
Age Parameters	
<p>Diagnoses - For each diagnosis grouper, specify code type (ICD10, SNOMED) &amp; which option should be searched for inclusion.</p> <p>Opt 1: Encounter Level - ED Visit Diagnoses            Opt 2: Encounter Level - Primary Billing Diagnosis            Opt 3: Encounter Level - Secondary Billing Diagnoses            Opt 4: Encounter Level - All Billing Diagnoses            Opt 5: Encounter Level - Visit Diagnoses            Opt 6: Encounter Level - Hospital Problem List            Opt 7: Patient Level - Entire Problem List            Opt 8: Patient Level - Medical History Present Prior to Encounter</p>	
Procedure Codes (CPT)	
Orders	
Alerts	
<p>Medications</p> <p>Specify if looking for ordered vs administered.</p>	

<b>Flowsheet Documentation</b> Specify if looking for first/last/any flowsheet value.	
<b>Other Clinical Documentation</b>	
<b>Results (Lab or Imaging)</b> Specify if looking for ordered or a specific result status.	
<b>Other</b>	
<b>Inclusion Logic</b>	
<b>Patient Class (Non-Ambulatory Patients)</b>	
<b>Care Setting</b>	
<b>Population Exclusion Criteria</b>	
<b>Diagnoses - For each diagnosis grouper, specify code type (ICD10, SNOMED) &amp; which option should be searched for inclusion.</b>  <b>Opt 1: Encounter Level - ED Visit Diagnoses</b> <b>Opt 2: Encounter Level - Primary Billing Diagnosis</b> <b>Opt 3: Encounter Level - Secondary Billing Diagnoses</b> <b>Opt 4: Encounter Level - All Billing Diagnoses</b> <b>Opt 5: Encounter Level - Visit Diagnoses</b> <b>Opt 6: Encounter Level - Hospital Problem List</b> <b>Opt 7: Patient Level - Entire Problem List</b> <b>Opt 8: Patient Level - Medical History Present Prior to Encounter</b>	
<b>Procedure Codes (CPT)</b>	
<b>Orders (EAPs, OSQs, PRLs)</b>	
<b>OPAs</b>	
<b>Medications</b> Specify if looking for first/last/any flowsheet value.	
<b>Flowsheet Documentation</b> Specify if looking for first/last/any flowsheet value.	
<b>Other Clinical Documentation</b>	
<b>Results (Lab or Imaging)</b> Specify if looking for ordered or a specific result status.	

<b>Other</b>	
<b>Exclusion Logic</b>	
<b>Validation</b>	
<b>Population Assessment Completed by CPP Content Team</b>	
<b>Population Assessment Completed with CPP Data Team</b>	
<b>Population Pre-Validation Team</b>	

**Notes:**

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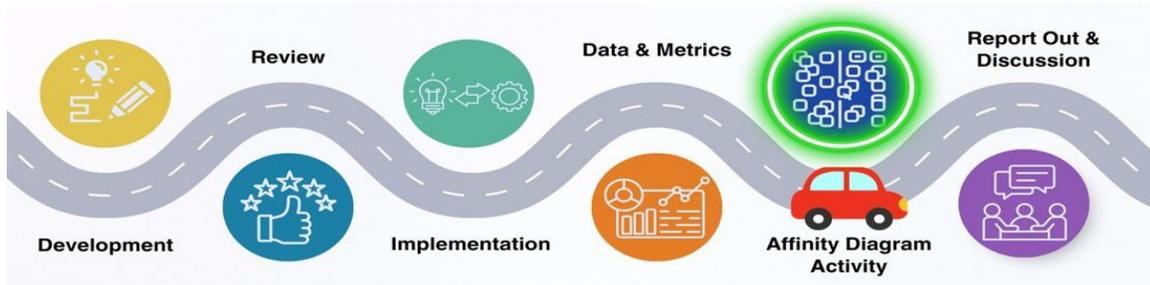


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# Affinity Diagram Activity



- **4 stations:**

- Pathway Development/Program Support
- Pathway Review Process
- Pathway Implementation
- Populations and Data

- **At each station post at least one sticky note:**

- A successful process/solution you developed **or** challenge you are currently facing

Notes:

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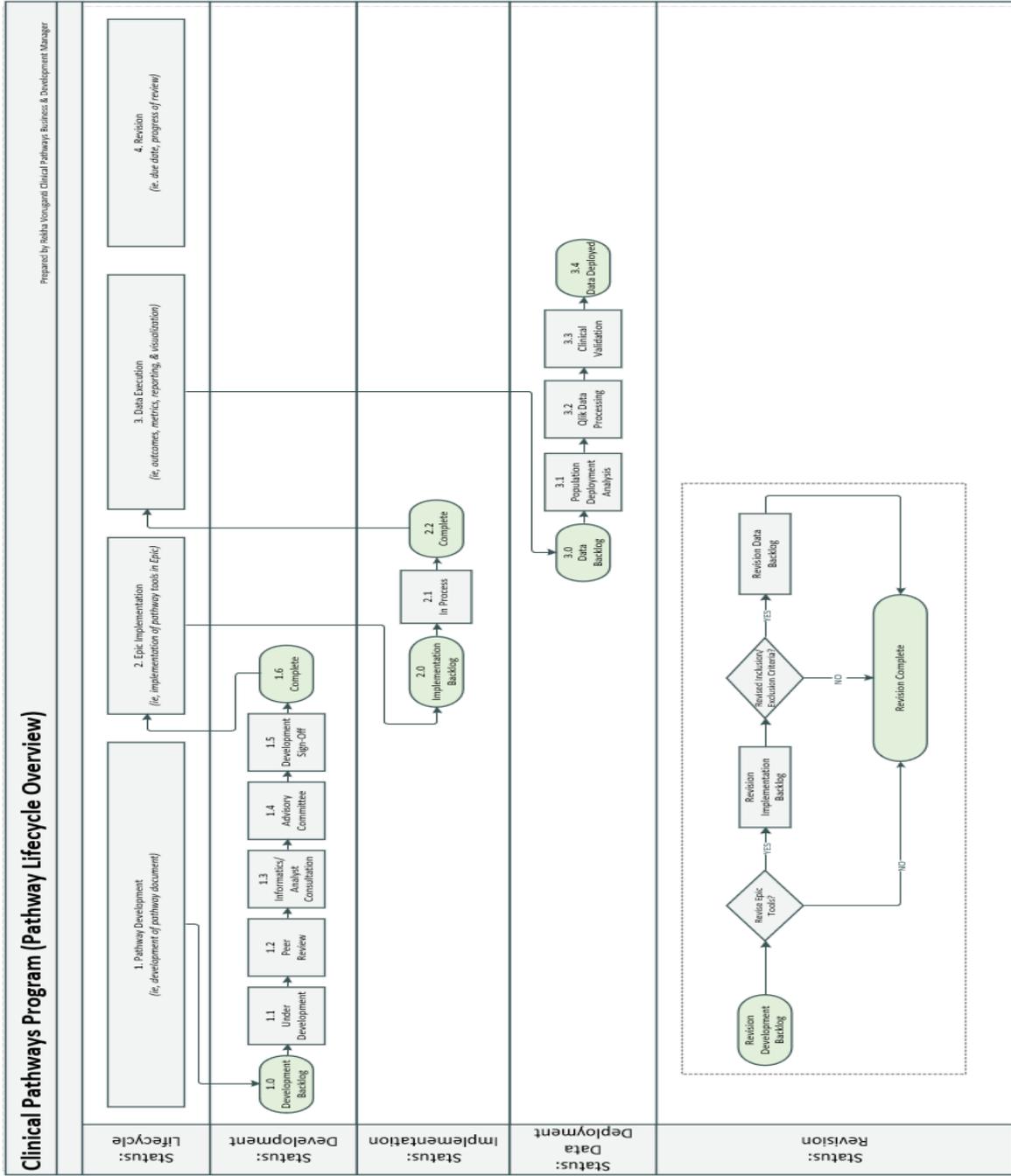
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# Pathway Lifecycle Overview



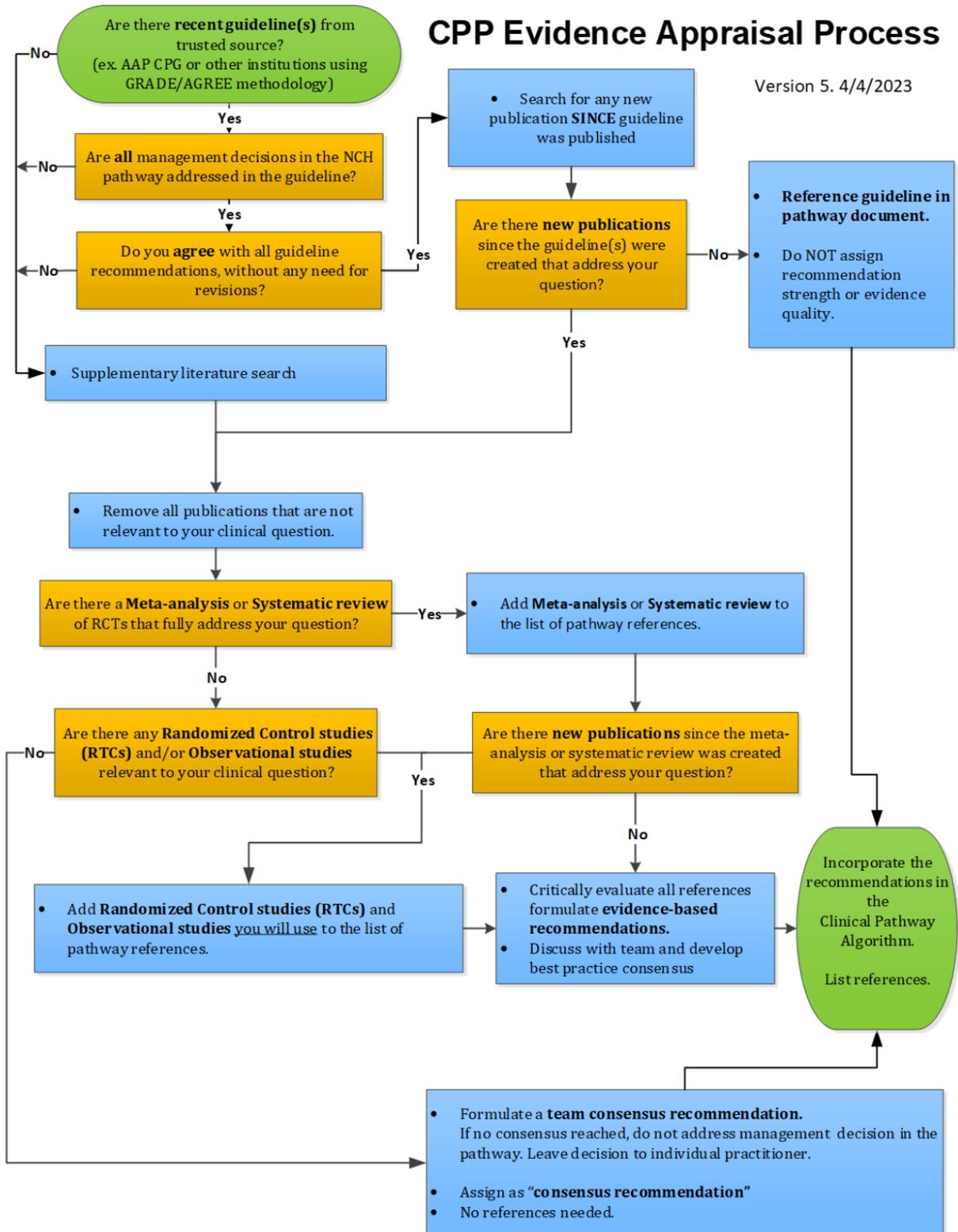
# Pathway Development Checklist

Clinical Pathway Development Checklist	
<b>I. Pathway Planning</b>	
	Define & document the pathway's process and outcome goals, patient population, care settings & inclusion/exclusion criteria using the <b>Pathway Content Outline</b> .
	Assemble a multi-disciplinary/specialty content development team & outline a project timeline.
<b>II. Evidence Search and Best Practice Development</b>	
	Review institutional policies or internal non-pathway algorithms related to the pathway, national consensus statements or guidelines of care, existing QI projects, existing tools/process already in place (order sets, patient education, DC templates, etc.).
	Create clinical queries (PICO format) & perform an evidence search.
	Formulate institutional best practice recommendations based on evidence & team consensus. Document recommendations & relevant references in the <b>Pathway Content Outline</b> (use <b>Evidence Summary</b> if extensive literature appraisal performed).
<b>III. Pathway Content Development:</b>	
	Translate <b>Pathway Content Outline</b> into care algorithm and supporting information. Use <b>Clinical Pathway Document Template</b> .
<b>IV. Peer &amp; Advisory Committee Review</b>	
	<b>Peer Review</b> – Distribute pathway to all intended users for review & feedback.
	<b>Development/Implementation Closing Meeting</b> – Development & Informatics teams meet to discuss feasibility & effort to translate clinical decision making into EHR tools.
	<b>Advisory Committee Review</b> – To ensure alignment & compliance with NCH standards, policies, mission, vision & values.
	Finalize pathway & post on intranet.
	Send pathway posted <b>communication</b> (use <b>template</b> ).
<b>V. Epic Tool Development</b>	
	3 (+1 Hold) meeting series to review existing build (if applicable) & develop new tools.
	Send pathway active <b>communication</b> (use <b>template</b> ).
<b>VI. Outcome Reporting &amp; Visualization</b>	
	Define an eligible pathway population that is measurable within EHR & aligns with national standards ( <i>if applicable</i> ).
	Identify any existing internal/external reporting that may need to align with new pathway population definitions ( <i>if applicable</i> ).
	Operationalize metrics to measure the success of the pathway as related to your pathway goal(s).
	Pathway added to CPP Qlik Dashboard (reflects EHR tool utilization & outcome measures).
	Complete Clinical Validation Worksheet.
	Data Deployed to Medical director/pathway champion/QI lead.
<b>VII. Maintenance – 5-year Review &amp; Revision</b>	
	Use <b>Review &amp; Revision Survey</b> .

# Evidence Appraisal

## CPP Evidence Appraisal Process

Version 5. 4/4/2023



# Pathway Content Outline

**Pathway Name:**

**Care Setting:**

1. **Pathway Team with Associated Credentials**
  - Team Leader(s):
  - Team Members:
2. **Pathway Goal:** 1-2 sentences. How will the clinical pathway improve quality of care?
3. **Metrics**
  - Process:
  - Outcome:
  - Balancing:
4. **Definition and Diagnosis**
  - Definition:
    - Signs and Symptoms (*to optimize diagnostic timeliness and accuracy*):
    - Typical Presentation/Age Range:
    - Diagnostic Criteria:
  - Differential Diagnosis:
    - Consider other alternate clinical problems and/or diagnoses when:
5. **Criteria**
  - Pathway Inclusion Criteria:
  - Pathway Exclusion Criteria:
  - Admission Criteria:
  - Floor Discharge Criteria:
  - Floor Discharge Planning (*to facilitate a high-quality process and timely discharge*):
  - PICU Admission Criteria (*if applicable*):
  - Inclusion Criteria & Exclusion Criteria to consider:

Age	Medications
Encounter Types: ED/UC Visits, Hospitalizations, Office Visits	Results: Labs or Imaging
Diagnoses	Procedures
6. **Disease Severity**
  - Severity Categories/Criteria:
  - Red Flags (*to optimize situational awareness and early detection of deterioration*):
7. **Monitoring, Signs of Deterioration & Escalation of Care (*if applicable*)**
  - Monitoring Protocol/Process:
  - Signs of Deterioration:
  - Escalation of Care:
8. **Evidence-Based practice recommended and non-recommended treatments/testing/monitoring**
9. **Patient Education Tools (*creation and maintenance as needed*)**

# Pathway Content Outline

## Anticipated EHR tools and templates:

### 10. Pathway Implementation

- Clinical support tools: (*Consider existing tools*)
  - Order Sets:
  - Note templates:
  - Patient Instructions/DC templates:
  - Other: *BPAs, clinical calculators, flowsheets etc.*
- Develop a multi-modal education plan related to pathway content and supporting EHR tools using Implementation Science and Behavioral Economics methodology.
  - End users:
    - Hospital units:
    - Service lines:
  - System change(s) with proposed timeline and owner:
    - Ex: Infrastructure support for new workflow, new page groups/alerts, new equipment, new testing/treatment modalities
  - Group learning sessions/End-user education with proposed timeline and owner:
    - Ex: Education, skill training or simulation for key stakeholders (section, residents, nursing, pharmacy, other), email, section meeting presentations

## Review & Revision Initiation E-mail

The **XXX Clinical Pathway** is due for **5-year review** on **xx/xx/20xx**.

Are you still available to be the pathway content lead(s) for this pathway revision?

As the pathway content lead(s), we ask that you please answer a few questions below for us at CPP to best plan and assist with the upcoming pathway review and revision process.

1. Have new evidence/national guidelines/policies impacting best practice been published since the pathway was last published/reviewed?
2. Has the care delivery process (ex. availability of testing, staff, facilities etc.) significantly changed since the pathway was last published/reviewed?
3. Do any pathway-related EHR tools (orders, BPAs, documentation templates, patient instruction materials etc.) require revisions? *[Include EHR tools] [Provide CPP tool utilization/metrics if available]*

# Pathway E-mail Communication

## Airway Clearance & Expansion Clinical Pathway Update



The [Airway Clearance & Expansion Clinical Pathway](#) is now available online.

**Pathway Lead:** Courtney Whitacre, RRT-NPS

### Pathway Purpose & Goals:

- Standardize airway clearance for patients with respiratory insufficiency or impaired clearance.
- Optimize secretion removal and lung expansion.
- Reduce unnecessary CPTs through RT-driven, score-based therapy and weaning.

### Pathway Highlights:

3 Ways to Order ACE	Who Initiates	Who Weans	Typical Use
<b>Standardized</b> ACE therapy <b>WITH</b> score-based weaning	RT assesses and orders via ACE Pathway (provider co-signs)	RT	Standard ACE candidates; default option
<b>Customized</b> ACE therapy <b>WITH</b> score-based weaning	Provider places initial order (sets modality/frequency)	RT	Post-op or complex cases needing provider input
<b>Customized</b> ACE therapy <b>WITHOUT</b> score-based weaning	Provider	Provider	Off-pathway patients or contraindications

### EHR Tools:

#### CURRENT EHR TOOL:

- Resident orders, RT contacts provider with recommended changes to ACE orders

#### EHR REVISION IN PROGRESS:

- Build the new Pathway order set with 3 different ordering options
- To update note and flowsheet
- More information to follow...

### Go to pathway for more information, including:

- ACE Standardization
- Initiation process
- Modality selection
- Weaning protocol
- Special considerations

Clinical Pathways Program  
Center for Clinical Excellence



# Data Validation Worksheet

## Clinical Pathway Data Validation

<b>Pathway:</b>	Click or tap here to enter text.	<b>Care Setting(s):</b>	Click or tap here to enter text.
<i>[Insert Care Setting]</i>	Name and date	<i>[Insert Care Setting]</i>	Name and date
<b>Tool Utilization Date:</b>		<b>Tool Utilization Date:</b>	
<b>Validation</b>	Click or tap here to enter text.	<b>Date Validation</b>	Click or tap to enter a date.
<b>Completed by:</b>		<b>Completed:</b>	
<b>Date Presented to</b>	Click or tap to enter a date.	<b>Population Definition</b>	Click or tap here to enter text.
<b>Data Team:</b>		<b>Resource Link:</b>	
<i>[Insert Care Setting]</i>	Click or tap here to enter text.	<i>[Insert Care Setting]</i>	Click or tap here to enter text.
<b>Pathway Link:</b>		<b>Pathway Link:</b>	

### Goals

- To provide meaningful data to inform the utilization and outcomes of clinical pathways.
- To ensure consistent, accurate and complete data as defined by the intended pathway patient population.

### Data Considerations

1. You may see data pertaining to other care settings that a patient spent time in during an encounter, please focus ONLY on care settings identified above.
2. For tools implemented in 2021 or after, you will see 1 year lookback.
3. If the data does not meet your expectations, please provide detailed information and CSNs where appropriate.
4. Please refer to population definition resource sheet for the validation process.

### Validation Process

**Epic Tool Utilization:** Please refer to the implementation dates above, on what you should expect to see.

1. Does tool utilization match what you expected? If not, please explain and provide examples.  
Click or tap here to enter text.

#### Outcomes:

1. Do the monthly/quarterly/annual encounter volumes match what is expected (leverage existing reports)? If not, please provide detailed information and examples.  
Click or tap here to enter text.
2. Are the global metrics specified on the population definition resource sheet displayed on the dashboard and do they provide meaningful analysis of pathway population and utilization processes? If metrics are missing or if want to remove the metrics as they do not provide meaningful info, please provide what actions need to be taken.  
Click or tap here to enter text.
3. Are the appropriate dates displayed for tool utilization and metric lookbacks based on the tool implementation dates listed above? See point 2 under Data Considerations for guidance on what to expect.  
Click or tap here to enter text.
4. Does any of the outcome data contain any unexpected results that should be further investigated? If yes, please provide detailed information and examples.  
Click or tap here to enter text.

# Data Validation Worksheet

## Chart Review

**Sample size calculator** (e.g. Calculator.net - [calculator](#))

1. Confidence Interval = 95%
2. Error Rate = 20%
3. Population Proportion = 50%
4. Population Size = Annual Encounters
5. Sample Size =

If during chart review and validation, there are concerns about the included patient population, an increase in sample size may be necessary.

1. Of patients included who used the EHR pathway tools, were these patients appropriately included in the dataset? If not, please provide details and examples.  
Click or tap here to enter text.
2. Of patients included who did not use the EHR pathway tools, were these patients appropriately flagged in the dataset? If not, please provide examples.  
Click or tap here to enter text.

CSN	Pathway Utilization (Y/N)	Meets Population Definition (Y/N)	Notes

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## Dashboard Visualization:

1. Are there any other concerns or feedback on the dashboard visualization (ease of use and understanding, organization, titles, control charts)?  
Click or tap here to enter text.

## Action items that need to be completed before signing off on the Qlik:

Click or tap here to enter text.

## Tracker Views

Tracker Views	Purpose/What makes the view unique?
<b>Program Overview</b>	High level of where all pathways live in the lifecycle: Development, Implementation, Data. Includes pathways in backlog.
<b>Program Coordinator</b>	Contains all information from Development, EHR Implementation, Data and Maintenance views. Documents and keep track of key steps, dates, teams. Documents when a pathway is available on the intranet, internet, downtime folder.
<b>Development – Requests</b>	List of potential pathway development work. Used during end of year prioritization. If prioritized, identified by button designating what year development work is anticipated to begin. Prioritized pathways for the year live here until work has begun. Development specific notes.
<b>Development – In Progress</b>	Pathway development in progress. Documents whether pathway is under development, in peer, informatics or advisory committee review. Development specific notes.
<b>Development – Complete (Published)</b>	Pathway development complete. Documents when peer, informatics and advisory committee reviewed. Documents when pathway is posted to Intranet site and downtime folder. Development specific notes.
<b>EHR Implementation – Ready</b>	Pathway development complete. Not yet prioritized for EHR tool build. Used for quarterly implementation prioritization meeting. EHR tool specific notes.
<b>EHR Implementation – In Progress</b>	Pathway development complete and prioritized for EHR build. Shows meeting series. EHR tool specific notes.
<b>EHR Implementation – Complete (Tools Live)</b>	Pathways that have pathway program specific EHR tools built. Contains when tool went live, display names, record IDs, when tool was revised. EHR tool specific notes.
<b>Data – Ready</b>	Pathways ready to gather data requirements. EHR tools developed and live. List of potential pathway data work. Used during end of year prioritization. If prioritized, identified by button designating what year data work is anticipated to begin. Prioritized pathways for the year live here until work has begun. Data specific notes.
<b>Data – In Progress</b>	Data gathering requirements, when visualized on dashboard, clinical validation. Data specific notes.
<b>Data – Complete (Deployed)</b>	Pathways that have been validated and sent to pathway champion. Data specific notes.
<b>Maintenance – Revisions</b>	All pathway revision statuses. Not yet due (3+ months), Re-development backlog, Re-development in progress, Re-implementation backlog, Re-Implementation In Progress, Data Re-Execution backlog, Data Re-Execution In Progress, Complete.

For more information about our pathways and program, contact [ClinicalPathwaysProgram@NationwideChildrens.org](mailto:ClinicalPathwaysProgram@NationwideChildrens.org) or visit our external website via the QR code.

