A WHITE PAPER ON DEVELOPING A STATEWIDE PEDIATRIC FACILITY RECOGNITION PROGRAM

A NATIONAL QUALITY IMPROVEMENT COLLABORATIVE OF THE EMS FOR CHILDREN PROGRAM

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Pediatric Facility Recognition Collaborative

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BACKGROUND - MAKING A CASE FOR PEDIATRIC FACILITY RECOGNITION

Children account for 30 million (20%) visits to emergency departments (EDs) every year in the United States. The great majority (83%) are seen in general EDs, 69% of which see less than 15 pediatric patients per day. Furthermore, an estimated fewer than 5 percent of these pediatric

patients require tertiary care due to the criticality of the illness or injury. These statistics highlight the fact that most EDs and emergency care providers have limited ongoing experience with critically ill children.

In the 2006 Institute of Medicine report "Emergency Care for Children: Growing Pains" the IOM best qualified the state of pediatric emergency care as *uneven*. This meant that there were centers of excellence in the emergency care of children and, yet, there were also facilities struggling to meet the day-to-day needs of ill and injured children. These health inequalities for children are perhaps most pronounced across geographic areas. Children in urban areas often have ready access to children's hospitals and other comprehensive centers that prioritize the needs of children, whereas children in rural or remote areas have limited access to medical centers. The delivery of care at these facilities is further hindered by limited pediatric supplies, training, procedures, and overall awareness of pediatric needs. Unfortunately, despite enormous efforts to increase pediatric readiness in EDs through published guidelines, research, and awareness campaigns, these unwanted variations in pediatric emergency care still hold true today.

Meanwhile implementation of the Government Performance and Results Act (GPRA) was increasingly requiring public sector agency accountability in achieving measureable outcomes. Federal Agencies are required to develop performance measures that inform and guide organizational decisions and communicate to a broad constituency their success in achievement of the performance measures. To address the unevenness in pediatric care and guide EMS for Children state partnership grantees, the EMS for Children Program, with national pediatric emergency care experts, embarked on developing the first set of performance measures in 2004 with implementation in 2006. Two of these measures addressed the importance of statewide, territorial or regional standardized systems that recognize facilities able to stabilize and/or manage pediatric medical and trauma emergencies. These systems were to improve and reduce variability in pediatric emergency care.

PEDIATRIC READINESS IN THE ED

Knowing that providers have limited experience with critically ill and injured children and that children make up a minority, although a significant proportion, of visits to the ED, the American Academy of Pediatrics (AAP), American College of Emergency Physicians (ACEP), and the Emergency Nurses Association (ENA) created a joint policy statement entitled "Guidelines for Care of Children in the Emergency Department" to help guide facilities to ensure pediatric readiness ***before*** a critically ill or injured pediatric patient arrives. The guidelines are intended for all EDs providing emergency care 24 hours a day, 7 days a week that are continuously staffed by a physician.

The 2009 "Guidelines for the Care of Children in the Emergency Department" highlight seven core domains essential to pediatric emergency care: Administration and Coordination; Provider Competencies; Quality Improvement (QI); Patient Safety; Policies, Procedures, and Protocols; Support Services; Equipment, Supplies, and Medications. These 2009 guidelines offered

continued support of prior guidelines but included additional recommendations regarding patient safety, expansion of family centered care recommendations, and the care of children in disasters. The guidelines were further supported by 22 organizations including the American Medical Association, American Heart Association and the Joint Commission. Yet, to date, no specific pediatric standards exist for hospital licensing. Rather, pediatric-specific emergency care needs have remained decidedly absent in hospital accreditation requirements.

THE NATIONAL PEDIATRIC READINESS PROJECT

In 2012, the AAP, ACEP and ENA collaborated with the federal EMS for Children program to undertake a national QI initiative to facilitate improvements in pediatric readiness in all U.S. EDs based on the 2009 Guidelines. Together they launched the first phase of the National Pediatric Readiness Project (NPRP) with the support of the EMSC National Resource Center and the National EMSC Data Analysis Resource Center (NEDARC) guiding the development of the NPRP Assessment online. The NPRP Assessment determined the capacity of EDs to meet the emergency care needs of children and provide a national snapshot of pediatric readiness gaps. Of the 5,017 EDs in the United States, 4,149 (83%) participated in the assessment, representing 24 million pediatric ED visits in the United States.

Every participating ED was given a gap analysis, a weighted pediatric readiness score, and benchmarking data to compare themselves to similar sites. Additionally, a national pediatric readiness toolkit was developed to support pediatric readiness efforts. The toolkit contains numerous resources including templates for policies and procedures; reference literature; suggested roles and responsibilities for pediatric emergency care coordination; as well as QI and other education modules.

Based on a 100-point scale, the median weighted pediatric readiness score for all participating EDs was 69. Those EDs with high volumes (more than 10,000 pediatric patient visits per year) demonstrated greater levels of readiness than lower volume (less than 1,800 pediatric patient visits per year) sites (89.9 versus 61.4, respectively). Of critical significance was the finding that 83 percent of pediatric ED visits in the United States are to general (non-pediatric) EDs where lower annual pediatric patient volumes are common. Based on this national self-assessment, a number of gaps were identified including: 1) more than 40% of EDs lacked oversight for pediatric emergency care; 2) more than 50% of EDs lacked local QI efforts to evaluate pediatric emergency care; 3) more than 50% of EDs lacked disaster plans that include children; and 4) persistent gaps in pediatric safety measures exist including failure to obtain pediatric patient weights in kilograms which helps prevent drug dosing errors. A full description of the national assessment results was described by Dr. Marianne Gausche-Hill and colleagues (JAMA-Peds 2015).

PEDIATRIC FACILITY RECOGNITION PROGRAMS

As early as the mid-1980's several states and regions began to recognize the importance of pediatric readiness in EDs. To reduce the inequities in providing pediatric emergency care while ensuring children had access to appropriate equipment, pediatric protocols and care providers with pediatric expertise, state and regional programs were developed to recognize EDs committed to maintaining day-to-day pediatric readiness. Pediatric recognition programs are similar to other verification programs for hospitals (e.g. trauma, STEMI, stroke). However, in the great majority of pediatric recognition programs participation is voluntary. Such programs encourage EDs and hospital administrators to maintain compliance with the national Pediatric Readiness guidelines by recognizing their efforts and commitment to children. Many of these recognized sites are termed "Emergency Departments Approved for Pediatrics (EDAP)."

The 2013 National Pediatric Readiness Assessment results affirmed the importance of pediatric readiness recognition programs in assuring the pediatric readiness of hospitals to provide emergency care to children. Hospitals recognized as being pediatric ready scored 22-24 points higher on the National Pediatric Readiness Assessment (Remick, et al 2016 and NEDARC unpublished data 2014). Additionally, more recent studies have demonstrated decreased pediatric mortality rates following the establishment of such programs (Rice, et al. 2017)

Despite EMS for Children performance measures requiring state EMS for Children programs to establish pediatric facility recognition programs and recent studies linking recognized facilities with improved pediatric readiness and decreased pediatric mortality, prior to this collaborative, only 11 states had successfully implemented pediatric facility recognition programs based on the 2009 Guidelines: Alaska, Arizona, California, Delaware, Illinois, Montana, New Jersey, Ohio, Tennessee, Utah, and West Virginia. The development and implementation of programs to recognize pediatric ready EDs was identified as being especially difficult by many of the EMS for Children state partnership grantees. Numerous issues impacting success include state hospital licensure regulations as well as lack of stakeholder agreement on potential need, burden, and program characteristics.

Thus the EIIC undertook a national QI collaborative in 2016 to serve as a support structure to facilitate achievement of these measures. The goals of the Pediatric Facility Recognition Collaborative were to: 1) help states develop and implement statewide pediatric readiness recognition programs through the creation of a collaborative network, 2) define models of implementation for use by other states and territories, and 3) develop resources and tools to facilitate the development and implementation of these programs. Via the EMS for Children Program Town Hall announcements, EIIC Pulse newsletter and list serve, and EMS for Children News solicitation – states were encouraged to form a team and apply to participate in the collaborative.

THE PEDIATRIC FACILITY RECOGNITION COLLABORATIVE

MISSION

All children deserve timely access to EDs that are ready to provide immediate and appropriate care based on the national "Guidelines for Care of Children in the Emergency Department."

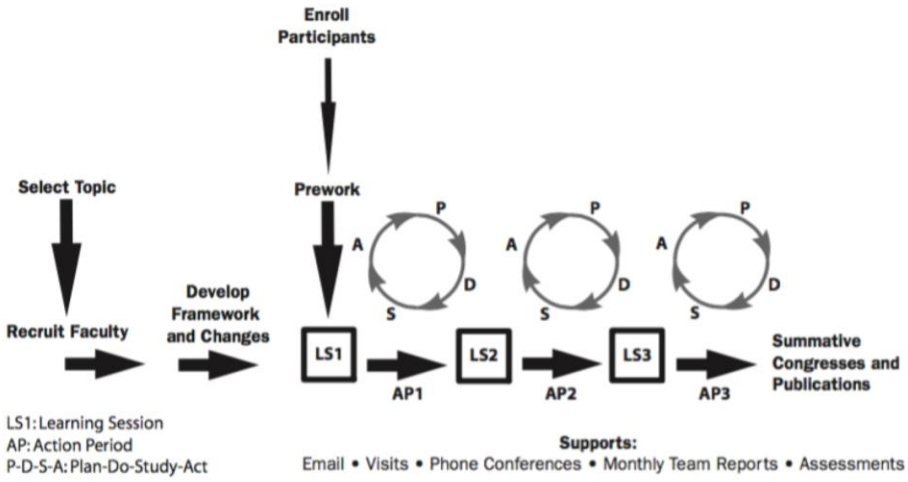
SMART AIM

By December 1ST, 2017, increase by 50% the number of states that have developed and approved an implementation plan for the recognition of EDs that are ready to stabilize and/or manage children with medical emergencies based on the 2009 "Guidelines for Care of Children in the Emergency Department."

COLLABORATIVE INFRASTRUCTURE

The Institute for Healthcare Improvement's Breakthrough Series Model was used as the overarching framework for the Pediatric Facility Recognition Collaborative. Specific highlights of the collaborative structure included:

- Networks for shared learning through the development of workgroups with targeted goals.
- Coaching with subject matter experts who helped establish pediatric facility recognition programs in their state.
- Coaching with QI experts.
- Evidence-informed content based on 2009 Guidelines, QI science, and established pediatric facility recognition programs.
- Guided interventions and phases of implementation
- Development of tools, resources, and talking points to support targeted activities.



Adapted from *The Breakthrough Series: IHI's Collaborative Model for Achieving Breakthrough Improvement.* IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003. (Available on www.IHI.org)

PHASES OF IMPLEMENTATION

In preparation for launching, grantees were encouraged to apply to participate in the collaborative while developing small work teams which would be inclusive of hospital representatives, leaders from state hospital associations and licensure as well as EMS for Children community members. Fifteen states applied to participate in the collaborative: Colorado, Connecticut, District of Columbia, Florida, Indiana, Kansas, Kentucky, Louisiana, Michigan, New Mexico, New York, Oklahoma, Pennsylvania, South Carolina and Texas. The collaborative launched with a baseline assessment survey. The survey queried participating state teams on potential barriers to implementation of a pediatric facility recognition program in their state; the type of program envisioned for their state; recent events which might help support statewide adoption of a pediatric facility recognition program; and any available infrastructure to facilitate data collection and storage.

Based on the survey results, a tiered categorization was developed to illustrate where each participating state was in the pediatric facility recognition program development process. The five (5) phases of development are:

- Phase I: Understanding Your State's Framework
    - Map the political framework for health policy, oversight and licensing in the state
    - Identify key stakeholders and champions for the improvement team
    - Meet with the state EMS for Children advisory committee to discuss stakeholders and a structural framework
    - Identify barriers and enablers to implementation of a pediatric facility recognition program
- Phase II: Research Phase
    - Research and review current pediatric facility recognition programs in other states (consider potential effectiveness/characteristics)
    - Identify potential leverage points for pediatric facility recognition
    - Review and vet leverage points with improvement team and EMS for Children advisory committee
- Phase III: Stakeholder Agreement
    - Meet with stakeholders to review and discuss leverage points
    - Identify potential host institution(s) for a pediatric facility recognition program
    - Obtain a stakeholder agreement on recognition criteria and program characteristics
- Phase IV: Development of an Implementation Plan and Essential Needed Tools
    - Map out steps for implementations including identification of a host institution and sustainability plan, application process and recognition criteria, timeline, tracking system, recognition process, marketing plan, and mechanism for recognition.
    - Needed Tools identified:

- ✓ Marketing plan and talking points
- ✓ Additional Stakeholder recruitment and engagement tool
- ✓ Application and evaluation tools
- ✓ Recognition certificate/plaque

- Phase V: Piloting and Recognition
  - Identify sites for initial pilot implementation, evaluate and revise recognition process as needed, provide initial recognition to participating sites.

Once the baseline was obtained, a project plan was created to address the areas of deficiency while providing hands-on training for the development of a pediatric facility recognition program in each respective state.

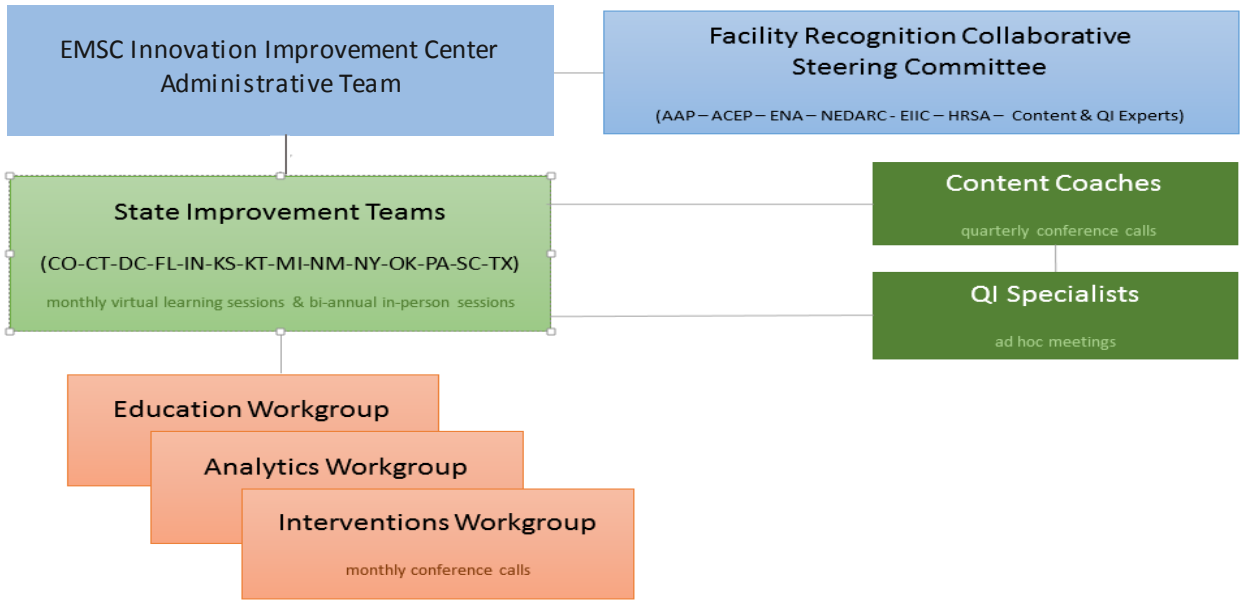
Early in development of the Collaborative, concerns were noted for two participating state teams. Although one state had an experienced EMS for Children manager, changes within that state's administration were diminishing support for EMS for Children activities and the development of a pediatric facility recognition program. Due to these factors, the state team withdrew from the collaborative. A second state team participated in the learning sessions and collaborative discussions but was unable to work towards the goal of developing a pediatric facility recognition program. With a newly appointed EMS for Children State Partnership Program Manager at the start of the collaborative, the team lacked the background, prior collaboration with local stakeholders, and opportunity to engage and obtain needed state support. However, this state was still included in the results due to ongoing participation in the collaborative.

COLLABORATIVE DESIGN

While the breakthrough series model served as the core model for the collaborative, much of the success of the collaborative was dependent upon the engagement and support of national professional organizations. Representatives from the AAP, ACEP, and ENA allowed for wider stakeholder engagement and support at both the state and national levels.

Each participating team consisted of the state EMS for Children Program Manager and two to five core stakeholders. Core members were chosen by the State Partnership Program Manager based on past working relationship with the EMS for Children program, interest, and ability to influence and support work at the state level. Many of the core stakeholders were members of the aforementioned national professional organizations. Additional team members included representatives from state hospital associations, state health departments, families, EMS provider agencies, and hospital licensing/designation entities. As the work of the collaborative progressed, core teams grew to accommodate the participation of additional stakeholders. By the end of the collaborative, the core teams were hosting larger meetings to facilitate education, greater buy-in, and allow opportunities for input into the process.

The collaborative work plan provided training in QI approaches for both program design and implementation. Additionally, a cadre of content coaches and QI specialists were recruited to provide ongoing support and training to collaborative participants throughout the entire 18 months of the project. Training was provided through in-person meetings and online learning sessions.



WORKGROUPS

One of the key benefits of a collaborative is that best practices and resources can be developed and shared. To support this effort, members of the collaborative participated in workgroups to develop and share resources, tools, talking points, and best practices to support the work of each of the collaborative teams. The workgroups were designed to target interventions, analytics and education.

Workgroup responsibilities included:

Intervention –

- Determine the minimum criteria to recognize an ED as "pediatric ready" based on the 2009 Guidelines/NPRP assessment
- Discuss alternative ways to recognize facilities (i.e Pediatric Engaged or Pediatric Innovators)

Education-

- Brainstorm talking points for the following stakeholders: family advisory networks, C-suite, hospital administration, providers, and trauma networks

- Develop a strategy to collect success stories

Analytics-

- Define ways to measure progress/success in each implementation phase
- Discuss questions, elements, and tools that should be included or created for each implementation phase that will assist in measurement of progress towards success

All resources developed as part of the collaborative were housed online and freely accessible to all collaborative participants.

ACTIVITIES

The educational and collaborative aspects of this project were conducted through a series of activities:

LEARNING SESSIONS

Monthly the EIIC hosted monthly webinar-based learning sessions. Topics included:

- Design of the QI Collaborative and team roles/expectations
- Using elements of the QI Toolkit to Guide team work
- Assessing state processes supporting and/or challenging facility recognition (barriers and enablers) – i.e. identifying pediatric readiness deficits in state trauma programs; building a process to plan for pediatric surge during disaster.
- Pediatric Readiness Domains and opportunities for building a facility recognition program
- Assuring buy-in through planned communication strategies – specific audiences - specific messages - elevator speeches – formal slide deck presentations
- Identifying and building a stakeholder group and evaluating their engagement
- The moving pieces of implementation associated with a state facility recognition program (phases of implementation)
- Success stories of those who have successfully developed facility recognition programs
- Successful strategies identified by participating teams to garner support and gain momentum for implementation

These online sessions also served as a platform for workgroups and improvement teams to share updates. Attendance at all Learning Sessions ranged from 26 – 60 team members and attendance records indicated that representatives from all state teams were in attendance at each of the learning sessions.

Additionally, the EIIC hosted two in-person learning sessions for collaborative members in the fall of 2016 and spring of 2017. The purpose of these two day sessions was to teach improvement teams the use of QI principles and tools that can assist them in developing a pediatric readiness recognition program for their state. Attendance was limited to collaborative participants

(members, content coaches, and advisory committee members), making it the ideal setting for discussion and learning. The program consisted of workshops and didactics focusing on:

- Engaging stakeholders and forming cohesive teams
- Developing process maps and other QI tools to facilitate state activities
- Developing facility recognition criteria based on national guidelines
- Developing tracking tools to monitor progress and evaluate stakeholder engagement

EVALUATION

A RedCAP survey was developed to collect important information at the end of the Facility Recognition Collaborative. The survey also provided feedback and assisted the project team in identifying successful approaches as well as areas for improvement. It should be noted that although all participating sites accessed the survey tool, not all questions were responded to by all participating states. Categories assessed and responses follow below.

1) Utilization of QI tools in planning
   Survey questions: Please list the QI tools the team utilized during the project; Did your team develop an aim statement using the SMART mnemonic (i.e., Specific, Measurable, Attainable, Relevant, Time-bound)?
   Measurement Results:
   a. 80% of teams created a 'true' SMART aim
   b. All state teams confirmed the use of a variety of QI tools and in some instances a combination of QI tools (i.e. key driver diagram – 40%, fishbone diagram – 40%, process mapping- 53.3%, stakeholder grid – 66.7 %, and other tools 26.7%)

2) Consensus in defining minimum criteria for their state facility recognition program
   Survey question: Has your state established consensus on the minimum criteria for facility recognition?
   Measurement Results:
   a. 66.7% of participating states successfully defined consensus minimum criteria for their facility recognition program.

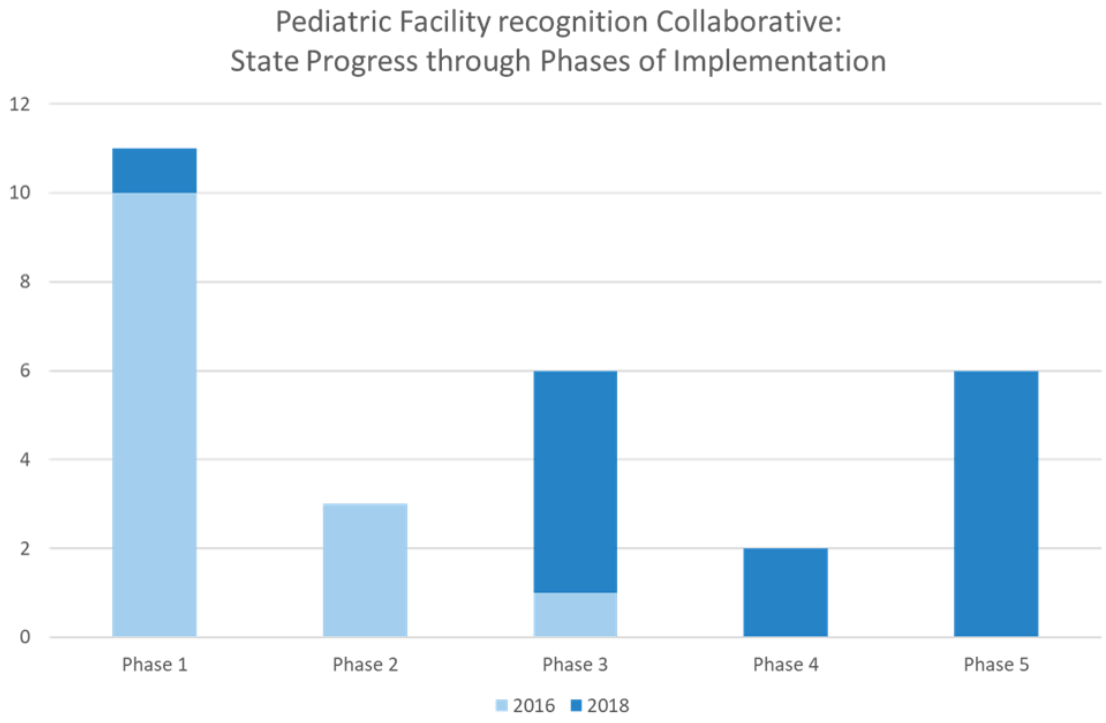
3) Utilization and effectiveness of content (subject matter expert) and QI support coaches
   Survey questions: Did your team utilize a content coach and/or QI specialist? Were they helpful? How frequently did your team work with him/her?
   Measurement Results:
   a. 73.3% of teams utilized their content coach during the project period.
   b. 33.3% of teams responding to this question utilized the QI specialist and 80% of those using them found their assistance to be valuable
   c. Frequency of contact with content coach and/or QI specialist – of those teams using a content coach - 27.3%, sought assistance frequently or very frequently and another 63.6% accessed them occasionally or as needed. Approximately

80% of respondents utilizing the coaches found the content coaches helpful and valuable to their work. QI specialists were only accessed occasionally.

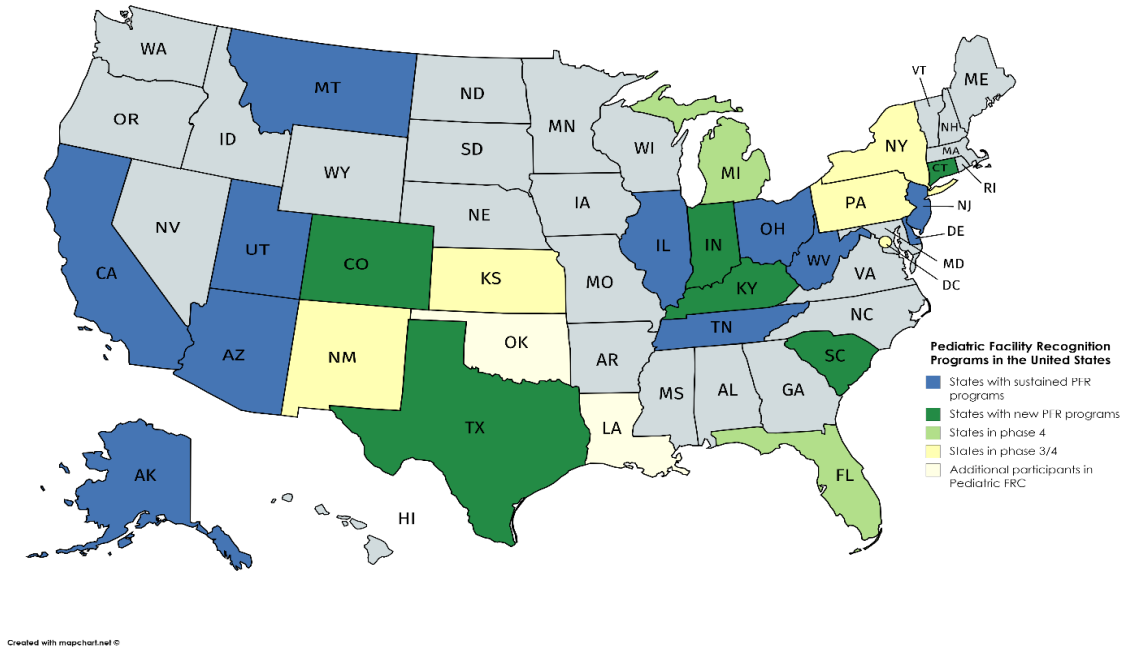
4) Progression through the phases of implementation
Survey question: How would you describe your state's current activities?

Measurement Results:

The bar graph below illustrates that 2/3 of participating states began in phase 1. At the end of the collaborative 8 states had progressed to having an actual plan and/or piloting and implementing a facility recognition program.



The map below shows the individual collaborative states and the phase of implementation each one was working on at the end of the collaborative in December 2017.



5) Level of engagement
   Survey questions: Did you participate in a workgroup? Have the activities and products from the workgroup added value to the work you're doing on this project? How connected were you to the collaborative?
   Measurement Results:
   a. Workgroup participation (Analytics, Education, Intervention) – All participating teams excluding one participated in at least one of the workgroups.
      - Intervention – 28.6% respondents participated in this workgroup
      - Education – 35.7% respondents participated in this workgroup
      - Analytics – 35.7% respondents participated in this work group
   b. Connectedness to collaborative – on a scale of 1-5 with 5 being most connected to the collaborative, all respondents felt connected to the work being done. 80% of respondents ranked their connectivity at 4 and 20% s ranked their connection to the collaborative at 5.
   c. Participants also commented that products and tools developed by the various work groups were moderately (40%) or very useful (60%) to their work.

6) Participation satisfaction

Survey Question:

a. Did you receive the support you needed from the collaborative?

Measurement Results:

A Likert scale of 1-5, with 5 being optimal, was utilized for measuring this question; 86.7% of respondents ranked support at 4 or above while 13.3% did not feel the support was sufficient to meet their goals for the collaborative.

Survey Question:

b. Did the collaborative meet your expectations?

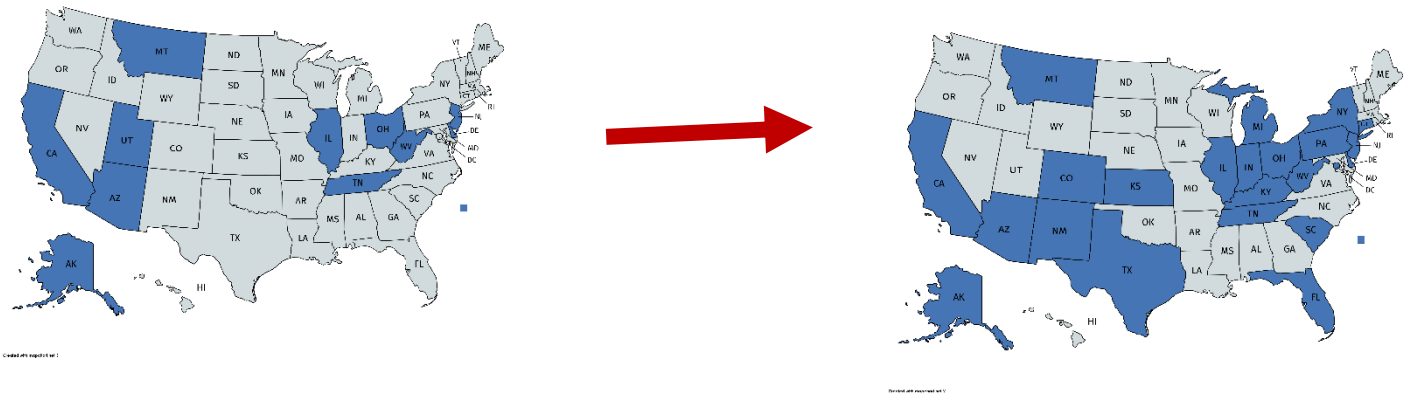
Measurement Results:

A Likert Scale of 1-3 was used for this measure, with 3 indicating the collaborative exceeded expectations, 2 met expectations and 1 indicating under-performance

For this measure 40% of the participants stated that the collaborative met their expectations with other respondents, 60%, believing that the collaborative had exceeded their expectations.

RESULTS

a. The SMART Aim of this QI collaborative was to increase by 50% the number of states that have developed and approved an implementation plan for the recognition of EDs (phase 4 or above). Prior to the work of this collaborative there were a total of 11 states that had pediatric recognition programs in place. As a result of the Collaborative, an additional six states have developed and implemented a recognition program. Another two states have developed plans to implement a program. The remaining six state teams have an advisory committee, defined criteria for recognition, and are poised to move forward in plan development.



b. Each of the Collaborative teams participated in workgroup activities focused on education, interventions and analytics. These workgroups were successful in the creation of many helpful tools and resources to assist one another as well as future

state EMS for Children managers working on this performance measure. Some of these tools included:

- An advisory committee recruitment tool
- An evaluation tool to assist in measuring stakeholder engagement
- A descriptive analysis of characteristics of existing facility recognition programs
- A checklist to guide work of the collaborative
- Consensus Facility Recognition Criteria List
- Talking points/elevator speeches to help others understand the importance and need for a pediatric facility recognition program
- A tool describing the phases of implementation to assist states in monitoring progress

These tools, as well as a library of sentential paper references and resources advocating and supporting pediatric readiness recognition programs, are available in the appendix to assist other states. This report and all resources and developed tools are available on the EIIC's website to assist others pursuing development of a pediatric readiness recognition program.

DISCUSSION

The Pediatric Facility Recognition Collaborative serves as one approach to achieving the EMS for Children performance measure to develop a statewide program to recognize EDs that are Pediatric Ready as defined by the Joint Policy statement on "Pediatric Readiness in Emergency Departments." (Remick et al, 2018) Given the diversity of states and territories across the United States, not all participating states followed a singular model or approach to achieving this goal. Yet, the notable gaps in pediatric emergency care across the United States and the clarity of focus on pediatric readiness created a unified vision in the development of these programs. Differences in state EMS for Children programs, historical presence, and oversight and structure of state health services, led to a large collection of best practices that will serve as critical resources for other states. Additionally, the variety of stakeholders engaged in this process led to a broader level of support for pediatric readiness efforts. The resources, best practices, and broad endorsement will help guide and support future EMS for Children Program Managers to achieve this goal.

While the establishment of stakeholder-supported statewide programs to recognize "pediatric ready" EDs is a significant accomplishment, it should be noted that the potential impact of these programs on the emergency care delivery system is dependent upon the degree of participation within the state. Methods of recognition/celebration of successes such as a certificate or letter of commendation for the site to display publicly is one means of encouraging participation. However, achievement and maintenance of day-to-day pediatric readiness at EDs depends on a high-level of engagement of ED providers, ED leadership, hospital administrators, and the designation of a Pediatric Emergency Care Coordinator.

Turnover within any of these positions can lead to reprioritization of activities and divergence. Therefore, the collaborative emphasized the importance of identifying teams of pediatric champions at every participating site.

The 2013 National Pediatric Readiness assessment identified several barriers to pediatric readiness including resources, education and adoption of QI principles. The Pediatric Readiness Toolkit was developed in 2013 as a collaborative effort of the EMS for Children program alongside national professional organizations including the AAP, ACEP, and ENA. The Pediatric Readiness Toolkit is organized by each of the seven domains highlighted in the Joint Policy statement. All resources within the toolkit are readily accessible online to support EDs and providers to facilitate local pediatric readiness efforts leading to subsequent recognition and those resources are being updated periodically. Yet, for many EDs and providers, particularly those that are under-resourced and/or understaffed, achievement of pediatric readiness may be considered aspirational, at best.

Future QI collaboratives that focus on ED providers will need to support pediatric readiness at the local level by creating a roadmap to success. Many of the lower volume facilities have limited financial resources to support full time positions targeting pediatric readiness efforts. Additionally, given competing priorities among hospitals (e.g. Readmission Reduction Program), identified pediatric champions may have limited time to dedicate to pediatric readiness efforts. Yet, future collaboratives that provide resources, tools, education, opportunities for collaboration, quality metrics, and reports on local impact, will help support both achievement and maintenance of pediatric readiness. Indeed, the 2013 National Pediatric Readiness assessment demonstrated a high level of interest and engagement; yet, ongoing engagement in QI implementation efforts is essential to maintain efforts at executing the recommendations. Structures such as this collaborative help support efforts to assimilate these recommendations into existing infrastructures.

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