

Bridging the Gap: Enhancing Pediatric Readiness in Wisconsin's Community Emergency Departments

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ABSTRACT

Background: Quality pediatric emergency care across the United States is inconsistent. Geographic distance, lack of resources and education can affect the care. This project set out to improve pediatric readiness in at least 20 Wisconsin emergency departments (EDs) statewide.

Methods: The program developed a pediatric readiness guide, recruited EDs to participate, and implemented pediatric readiness interventions within the EDs. Each ED completed the National Pediatric Readiness Project (NPRP) Assessment at the start of the program and a postimplementation assessment at the end, with the goal to improve ED pediatric readiness scores by 10% or more.

Results: Over 36 months, 23 EDs from diverse settings participated in the program. The median [IQR] NPRP score increased from 60.2 (51.5-74.2) to 81.1 (74.7-87.8). Nineteen EDs improved by over 10%.

Discussion: The targeted intervention improved pediatric readiness in 20 EDs from diverse settings and emphasizes the role of leadership and structured guidance to improve care provided to children in Wisconsin.

BACKGROUND

Over the past 20 years, recognition of inequities in pediatric emergency care quality within US emergency departments (EDs) has grown significantly, particularly in trauma care,¹ medical care,² and access based on geography.^{3,4} Following a joint call to action from the American Academy of Pediatrics⁵ and the American College of Emergency Physicians,⁶ initiatives have focused on equipping community EDs to provide quality

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emergency care to children. The National Pediatric Readiness Project⁷ (NPRP), a longstanding quality initiative supported by national Emergency Medical Services for Children (EMSC) and the organizations, aims to improve the pediatric readiness of US EDs. The NPRP has conducted 2 national assessment surveys (2013 and 2021), resulting in the engagement of over 1000 EDs in quality improvement collaboratives, and established a registry covering 83% of EDs nationwide. The NPRP survey provides an objective measure of ED pediatric readiness ranging from 0 to 100, with higher scores indicating greater readiness. It comprises 6 domains: (1) Administration and Coordination of Care; (2) Physicians, Advanced Practice Providers, Registered Nurses, and Other

Health Care Professionals; (3) Quality Improvement; (4) Pediatric Patient Safety; (5) Policies, Procedures, and Protocols; and (6) Equipment, Supplies, and Medications. The findings from the 2013 and 2021 national assessments indicated persistent gaps in education, policies, guidelines, and personnel for pediatric readiness.⁸ Since then, studies have demonstrated that higher NPRP assessment scores are associated with lower mortality among children presenting with severe illness² and injury.⁹

In the 2021 NPRP assessment, participating Wisconsin EDs had a median score of 68 of 100, closely aligning with the national median score of 69.5 but indicating room for improvement. In 2016, more than 304 000 (82.2%) pediatric visits occurred in Wisconsin community EDs, whereas only 66 000 (17.8%) occurred in tertiary pediatric EDs, according to Wisconsin Hospital Association data.¹⁰ With only 2 tertiary care children's hospitals in Wisconsin, this represents a key opportunity to col-

laborate with rural and community EDs, as well as critical access hospitals, to improve pediatric emergency care. The Wisconsin Pediatric Readiness Program (WPRP) was launched in 2021. The primary goals were to develop a Pediatric Readiness Implementation Guide to support the health care workforce and to pilot its use in at least 20 EDs while achieving at least 10% improvement in assessment scores.

METHODS

The Implementation Guide was developed during the first year with input from ED staff, professional organizations, and public health stakeholders. Designed as a practical resource, it helps EDs assess readiness, identify gaps, and apply quality improvement strategies to enhance pediatric care.

EDs were recruited based on interest and availability. Each ED designated a pediatric emergency care coordinator (PECC) to lead implementation with support from the grant team. Using the Implementation Guide, the program team provided ongoing individualized support through one-on-one meetings and tailored resources to address each site's unique needs. Three board-certified pediatric emergency medicine physicians were designated as subject matter experts for the program. Using the Implementation Guide as the framework, support was provided through regular contact with the subject matter experts to review each NPRP gap analysis at the start of the program. A one-on-one meeting was held with each PECC and subject matter expert to identify existing resources and gaps while prioritizing site-specific goals for improvement.

Throughout the program, support was available by email and virtual meetings with the program lead and subject matter experts. An online resource repository was developed, and additional resources were added as topics and questions evolved. At the end of the participation period, each site completed a postimplementation assessment, and the gap report was reviewed and discussed with the subject

Figure 1. The Four Phases of the Pediatric Readiness Program Cycle and Its Key Elements Outlined

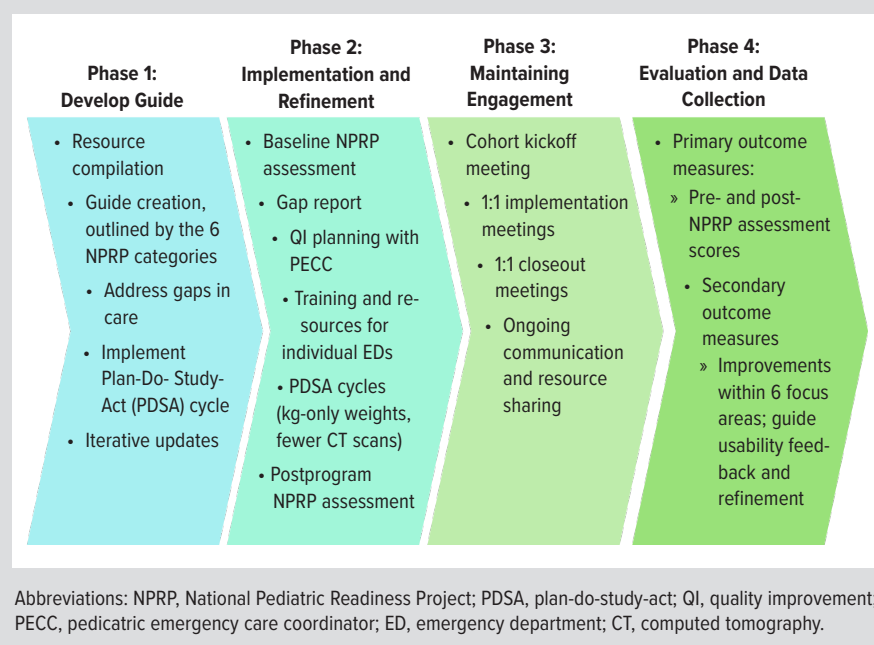
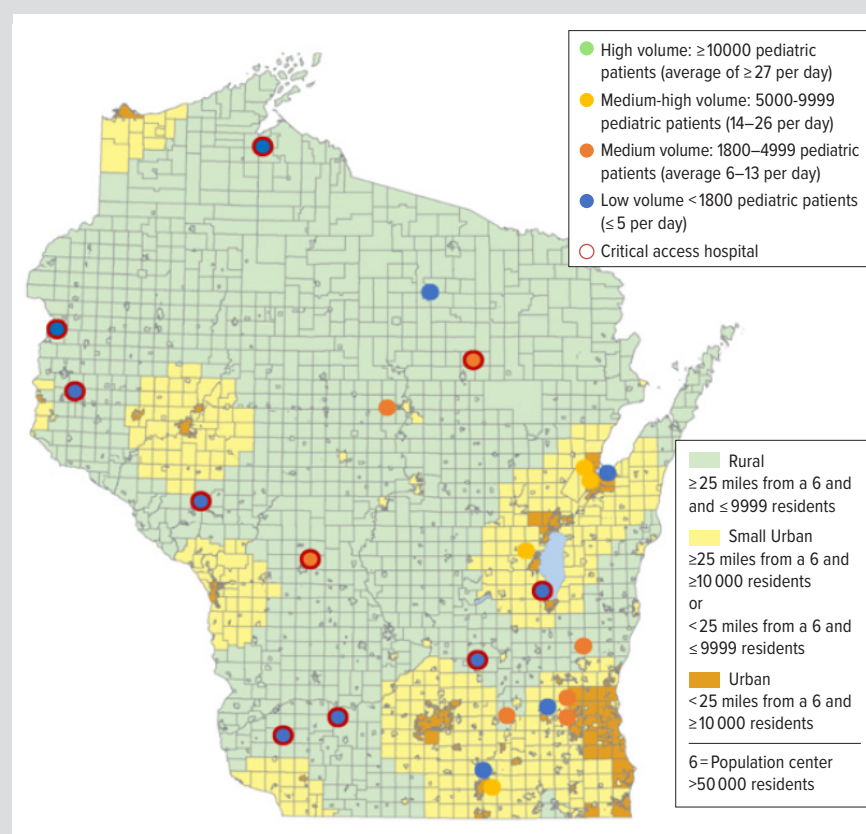


Figure 2. Map Indicating Location of All Enrolled Emergency Departments With Volume and Rural Status



Map indicators represent the emergency departments that completed the Pediatric Readiness program: Aspirus—Langlade Hospital, Aspirus—Rhinelander (St. Mary's), Aspirus Wausau Hospital, Aurora—BayCare, Aurora—Oshkosh, Aurora—Summit Bellin Memorial Hospital—Green Bay, Beloit Memorial Hospital, Fort HealthCare, Froedtert—Menomonee Falls, Froedtert—West Bend, Grant Regional Health Center, Gunderson Tri-County Hospital, HSHS—St Vincent Hospital, Mercyhealth—Janesville, Prairie Ridge Health, ProHealth Waukesha Memorial Hospital, St Croix Regional Medical Center, SMM Health Ripon Community Hospital, Tamarack Health Ashland Medical Center, Tomah Health, Upland Hills Health, and Western Wisconsin Health.

matter experts during a closeout meeting. The key phases of the intervention are outlined in Figure 1.

The primary outcome measure was improvement in NPRP assessment scores before and after implementation. Secondary outcome measures included progress in the 6 NPRP domains and feedback on the Implementation Guide. Qualitative data were collected throughout the program to guide further refinement of the Implementation Guide.

Descriptive statistics are reported as counts and percentages, and nonparametric data are reported as medians with interquartile ranges (IQRs). The 2-sided Wilcoxon signed-rank test was used, with a significance threshold of $P < .05$ to evaluate whether postintervention scores were significantly higher than preintervention scores across participating sites. The proportion of sites achieving the predefined benchmark of at least 10% improvement in scores was also calculated and compared with a null hypothesis of 50% using a binomial test.

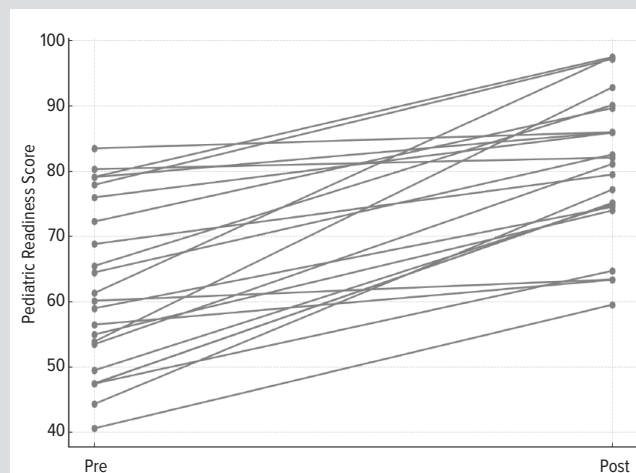
RESULTS

WPRP was launched on July 1, 2021, with 25 EDs initially participating and 23 EDs completing the program by October 2024. Two EDs completed initial NPRP assessment but did not complete the program. The participating EDs represented a range of sizes, geographic locations, and patient volumes (Figure 2). Of the 23 EDs, 12 were considered low-volume EDs, 10 were designated as critical access hospitals, and 12 were designated as rural. The median preintervention readiness score among participating EDs was 60.2 (IQR, 51.5-74.2), and the median postintervention score was 81.1 (IQR, 74.7-87.8). The Wilcoxon signed-rank test demonstrated a statistically significant median improvement in readiness scores across sites ($P < .001$). All participating EDs improved their pediatric readiness score, with individual gains ranging from 2.5 to 36.2 points (Figure 3). Nineteen sites (82.6%) achieved the predefined benchmark of at least a 10% improvement. A binomial test showed that this success rate was significantly greater than expected ($P = .0013$).

Four EDs made improvements in all 6 domains, whereas 17 EDs focused on Policies, Procedures and Protocols, 16 on Administration and Coordination of Care, and 12 on Provider Credentialing/Competency. Two domain elements contributed the greatest score gains: designation of a PECC (+209 points across all sites) and fulfillment of pediatric equipment needs (+163 points across all sites).

Postintervention survey responses indicated that participants valued the WPRP for highlighting strengths, identifying gaps, and increasing staff confidence. Participants emphasized the importance of ongoing quality improvement, education, and leadership support. The primary barriers cited were limited time, competing responsibilities, limited pediatric expertise, and occasional delays in EMSC communication. Desired support included group discussions, guidance regarding education and competencies, and

Figure 3. Pre- and Post-Pediatric Readiness Score by Site



assistance in securing pediatric physician champions. PECCs identified credentialing, patient safety, and quality improvement as top priorities for future readiness efforts. Participants strongly encouraged other rural EDs to join the program, start small, and leverage available resources to improve pediatric care and demonstrate measurable progress.

DISCUSSION

Geographic distance from tertiary care centers, hospital resource limitations, and delays in access to pediatric specialists significantly affect pediatric emergency care in Wisconsin.^{4,11,12} Low preintervention pediatric readiness scores in this program reflect these challenges and emphasize the need for continued support and outreach to EDs statewide.

WPRP not only met but exceeded its goal of improving pediatric readiness scores, demonstrating the effectiveness of a structured, evidence-based approach coupled with personalized coaching. A key factor in the program's success was the PECCs. These champions foster collaboration, address identified gaps, and drive implementation within their EDs. Recognizing their importance is essential to sustaining and expanding pediatric readiness efforts statewide.

Critical access hospitals and rural EDs typically have fewer resources and specialty capabilities than urban hospital systems.¹³ They also tend to have lower pediatric readiness scores than urban EDs.¹⁴ WPRP specifically targeted these EDs in an effort to reduce resource gaps and strengthen pediatric readiness. Continued focus on critical access hospitals and rural EDs may help maximize pediatric readiness improvement efforts throughout Wisconsin.

Despite its successes, WPRP faced notable challenges. Assigning and retaining PECCs proved difficult because of limited resources, lack of protected time allocation, staff turnover, and competing priorities. Sustaining participation was also a concern, underscor-

ing the need for long-term engagement and organizational commitment. Time, staffing, leadership support, and funding will need to be prioritized in future pediatric readiness efforts. One limitation of this project was the lack of a control group, which limits causal inference; however, the magnitude of improvement suggests meaningful impact.

WPRP demonstrates that targeted, personalized interventions can successfully improve pediatric readiness, even in resource-limited settings. Sustaining these improvements will require continued investment and integration into broader health care systems. More specifically, continued engagement of participating EDs through quality-improvement projects, educational conferences, and meetings will likely help maintain and further improve pediatric readiness. Financial sustainability may be enhanced through innovative funding models, formal recognition of PECCs, or incorporation of pediatric readiness into ED quality metrics. Although Wisconsin's infrastructure facilitated implementation, states with different funding mechanisms or regional structures may require adaptation of the model. The success of WPRP provides a framework for future initiatives and reinforces that meaningful change is possible when collaboration, innovation, and leadership align. Ensuring that every child in Wisconsin receives timely, high-quality emergency care, regardless of geography, should remain a priority.

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