

Maternal Mortality Reduction Program: Alliance for Innovation on Maternal health (AIM)

HDS- 5130- Health Organization, Management, and
Policy- 01

Topic: Maternal Mortality Reduction: National
strategies to reduce maternal mortality rates

Group-9

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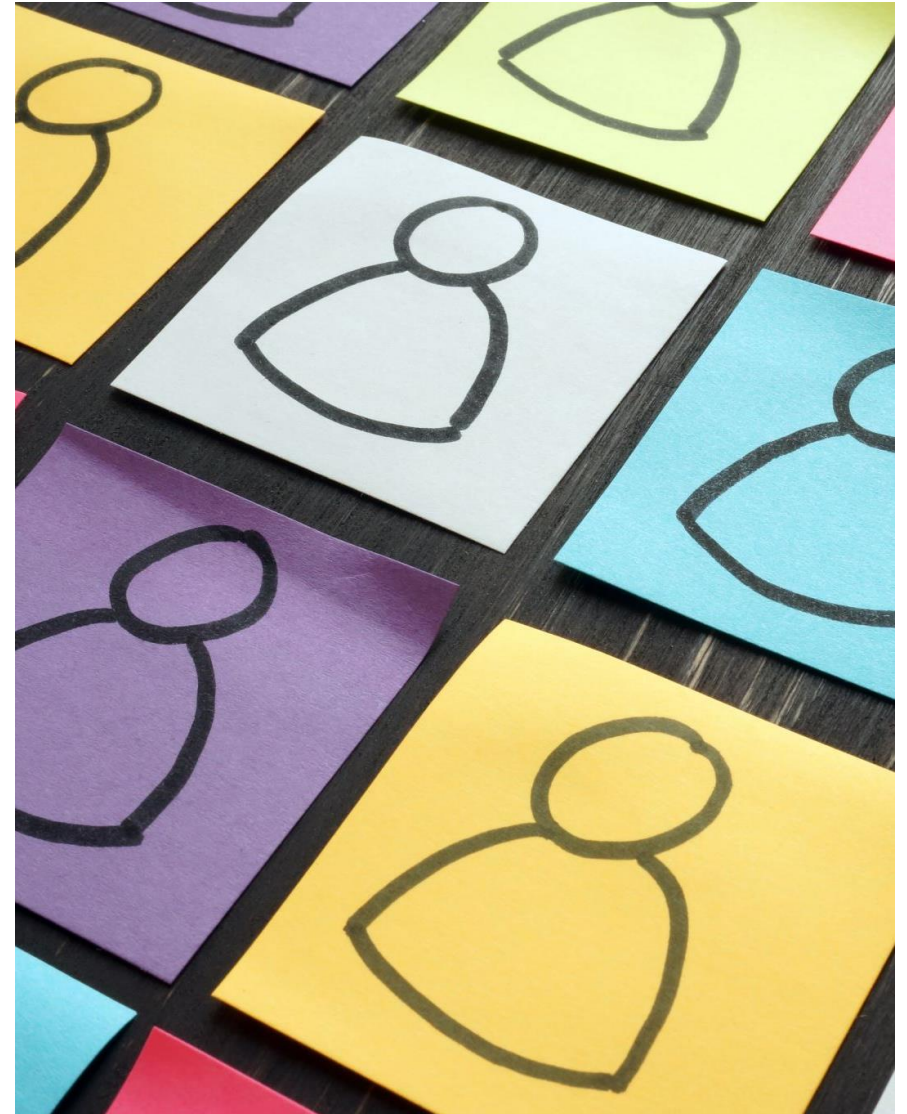
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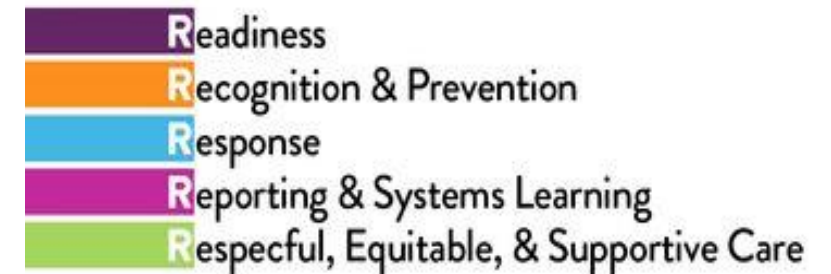
Background on Alliance for Innovation on Maternal health (AIM) Program

- The Alliance for Innovation in Maternal Health (AIM) is a program aimed at reducing maternal mortality and severe maternal morbidity (SMM) by improving quality and safety in maternity care, making it a critical initiative in addressing maternal health disparities in the United States.^{1,2}
- The program is funded by the Health Resources and Services Administration (HRSA) and focuses on implementing eight maternal safety bundles to standardize care for critical issues like obstetric hemorrhage, hypertension, and venous thromboembolism.^{1,2,3,4}
- The bundles are designed to standardize care and implement at birth facilities, with monitoring conducted at both state and national levels to promote data-driven quality improvements.²

Background on Alliance for Innovation on Maternal health (AIM) Program

- One notable achievement of AIM is the creation of the sepsis in obstetric care patient safety bundle, which was developed because sepsis is the second leading cause of maternal mortality in the United States affecting 5.7 per 10,000 pregnancies.⁵
- This bundle was created through an interdisciplinary workgroup and is organized into five domains: Readiness, Recognition and Prevention, Response, Reporting and Systems Learning, and Respectful, Equitable, and Supportive Care.⁵
- The AIM–Community Care Initiative (AIM-CCI) was launched as an extension of the program to address maternal health in non-hospital settings.¹
- This initiative guides the implementation of safety bundles, in outpatient and community care settings, gathers data on their effectiveness, and fosters collaboration among clinical and public health specialists through a maternal safety workgroup.¹

THE 5 R's OF PATIENT SAFETY BUNDLES



Success of the program

How was the success of the program measured?

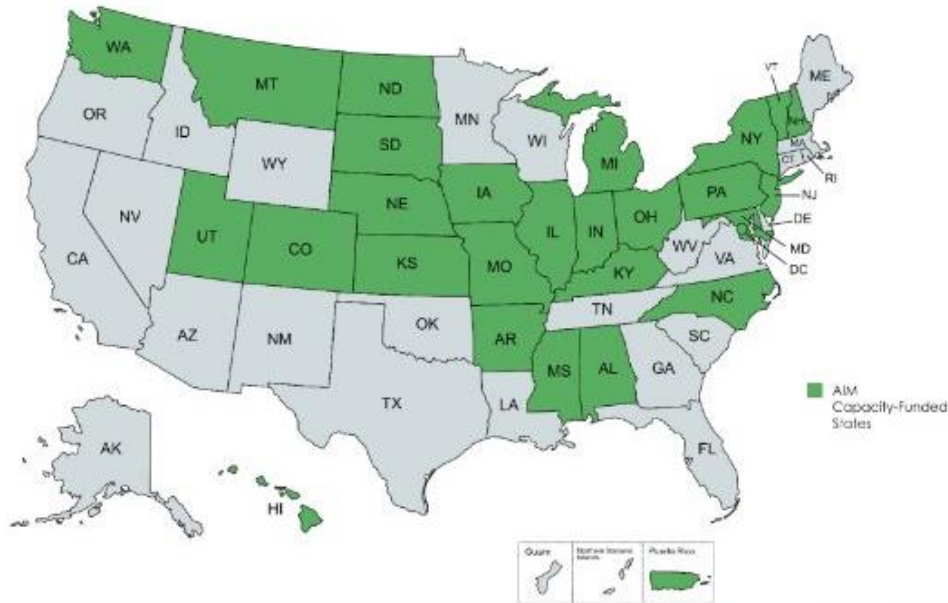
- The AIM program's success was evaluated using data-driven quality improvement procedures, focusing on outcome measures such as decline in low-risk primary cesarean births, maternal mortality, and SMM.²
- Participating hospitals submitted quarterly reports detailing result data, process metrics, and structural enhancements including the implementation of new equipment and protocols.²
- Emerging trends and case studies demonstrated significant improvements in maternal health outcomes, while surveys carried out 12-18 months after implementation documented changes in practices, such as the adoption of safety protocols and increased multidisciplinary collaboration.²
- The program relied on state-level and hospital-level data to assess progress, identify areas for improvement, and measure reductions in preventable maternal deaths and SMM.³
- To achieve these goals, AIM emphasized three types of quality improvement measures: Process, Structure, and Outcome Measures.⁶

Success of the program

- Targeted quality improvement projects, such as those addressing hemorrhage, demonstrated significant reductions in SMM rates and sustained improvements in maternal safety.¹ These successes were facilitated by rapid-cycle data analysis and feedback loops, that allowed for continuous refinement and adaptation.¹
- Additionally, sepsis-related deaths which are potentially preventable in up to 73 percent of cases were a key focus, underscoring the program's impact on addressing high-risk maternal health issues.⁵



Program's reach



How many people were reached by the program?

- The AIM program initially launched in 2014 with contracts to engage eight states. By 2017, it had expanded to include 17 states and three hospital networks, with an additional 15 states awaiting acceptance.²
- The program set an ambitious goal of being available to every birth facility in the United States, targeting a reduction of 1,000 maternal deaths and 100,000 cases of SMM.²
- As of August 2023, the AIM program had expanded its reach to 49 states, the District of Columbia, and 1,996 participating birthing facilities, a significant increase from 38 states and 1,500 hospitals in October 2020.^{1,4,7}
- This growth demonstrates the program's wide adoption and its critical role in improving maternal health nationwide.

A pregnant woman wearing a light blue hoodie is shown from the waist up, holding her bare pregnant belly with both hands. She is standing in front of a white wall and a green plant is visible on the left side of the frame.

Program's Impact

How much of an impact was realized with the program?

The AIM program had a substantial impact on improving maternal health outcomes across the United States. Key achievements include:

- Implementation of evidence-based safety bundles, such as those targeting obstetric hemorrhage, contributed significantly to reducing SMM rates.^{1,2,8}
- Participating hospitals reported decreased rates of low-risk primary cesarean births and improvements in overall maternal health metrics.²
- The program promoted the adoption of safety protocols, increased multidisciplinary collaboration, and the use of data-driven quality improvement strategies, leading to more consistent and effective maternity care.^{1,2}
- By expanding to 49 states, the District of Columbia, and nearly 2,000 birthing facilities, the program's widespread adoption has amplified its impact on maternal health outcomes.¹

Unintended Challenges of the Program

What specific information on unintended challenges was identified in the evaluation of the program?

The evaluation of the AIM program revealed several unintended challenges that limited its overall effectiveness:

- Variability across states and healthcare facilities led to inconsistent outcomes, particularly in resource-limited areas where the program's impact was restricted.^{3,4}
- Lag times and disparities in data collection and reporting across hospitals and states hindered comprehensive evaluation and slowed quality improvement efforts.^{2,3}
- Some healthcare providers expressed reluctance to fully adhere to protocols because they were worried about potential negative consequences, such as managing high blood pressure in pregnant patients.²



Unintended Challenges of the Program

- Hospitals struggled to maintain bundle implementation due to staff turnover, policy changes, decreased funding, and shifting institutional priorities.^{2,3}
- A "cookie-cutter" approach was not feasible, as each state and hospital system had unique needs and resources, and contexts that required tailored solutions.²
- Many state and jurisdiction teams lacked access to experienced data analysts specializing in maternal health. This shortage impeded efficient data collection, analysis, and reporting, which are essential for quality improvement.⁴



Strengths and Effectiveness of the Program



What were the strengths and effectiveness identified in the evaluation of the program?

The strengths and areas of effectiveness identified from the AIM program includes:

- Continuous monitoring, evaluation, and adaptation of strategies based on measurable outcomes made the program flexible, responsive, and evidence-based.^{2,3}
- Evidence-based maternal safety bundles were designed to be adaptable across diverse healthcare settings, ensuring effectiveness regardless of resource levels.^{2,4}
- Partnership with 28 national organizations and collaboration with state teams and healthcare systems have fostered a broad, coordinated effort to improving maternal health outcomes across diverse settings.^{2,3}
- The program's emphasis on preparedness and early intervention before obstetric emergencies significantly reduced preventable maternal deaths and enhanced overall maternal care.³

Strengths and effectiveness of the Program

- The program's rapid expansion from 8 states to 17 states and 3 hospital networks within 3 years, demonstrated its scalability and ability to reach a broad population effectively.²
- A small rural hospital in Nebraska with only 314 births per year fully implemented multiple AIM bundles and became the safest birth facility in the region. This highlighted the program's ability to drive effective implementation even in smaller, resource-limited facilities through committed nurse-physician teams.²



Beneficiary Groups from the Results of the Program

Who would benefit most from the results and reporting of the program or policy evaluation?

The results and reporting of the AIM program evaluation would benefit multiple stakeholders, including:

Pregnant women, especially high-risk populations

- Women of color and those living in rural areas stand to gain improved access to quality care and better maternal health outcomes.^{1,4}
- Implementation of evidence-based safety protocols and expanded access to telehealth services specifically addresses the needs of these vulnerable groups.^{1,4}

Healthcare providers

- Obstetricians, nurses, and midwives will benefit from enhanced training, updated clinical guidelines, and improved resources, enabling them to manage maternal health emergencies more effectively.^{1,4,6}



Beneficiary Groups from the Results of the Program

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- For example, the adoption of maternal safety bundles equips providers with standardized practices to reduce preventable maternal mortality and morbidity.^{1,4,6}

Policy makers and public health leaders

- Policymakers can leverage the program's data to design and allocate resources for maternal health policies.^{1,4}
- Maternal health organizations, such as the American College of Nurse Midwives (ACNM) or the Black Mamas Matter Alliance, can use findings to advocate for policies addressing the needs of underserved populations.^{1,4}

Community organizations

- Organizations focusing on maternal health disparities, particularly racial and geographic inequities, can use the findings to drive advocacy and education efforts.¹
- For example, grassroots initiatives may utilize data to promote culturally competent care and improve outreach programs in marginalized communities.¹

Program's Original Intent and Objectives

Did the program meet the original intent and objectives?

- Yes, the AIM program successfully met its original intent and objectives. The program aimed to reduce the maternal morbidity and mortality by improving the quality and safety of maternity care services through the implementation of evidence-based safety bundles, which were adopted by state-based teams and hospitals across the United States.^{1,4}
- The program addressed critical delays in maternal care, particularly those contributing to maternal sepsis deaths, including delays in diagnosis acknowledgment, therapy initiation, and promotion of treatment.⁵ The maternal safety bundles provided a comprehensive framework with protocols for early identification, standardized care procedures, and continuous quality improvements.⁵
- By equipping healthcare facilities with these tools, the program not only improved clinical outcomes but also enhanced care processes, meeting its goal of providing safer and more effective maternity care nationwide.⁵



Future directions

What are the future directions of the program ?

The future directions for the AIM program focus on expanding its reach, addressing disparities, and continuously improving maternal care. Key priorities include:

Expansion of Maternal Safety Bundles:

- Incorporating safety bundles into outpatient clinical settings and enhancing community-based care through the AIM–Community Care Initiative (AIM-CCI).^{1,3}

Strengthening Partnerships and Care Continuity:

- Building stronger state and local partnerships to address maternal health disparities and improve care continuity, particularly for high-risk pregnancies.¹

Improving Access in Underserved Areas:

- Sustaining and scaling successful interventions to ensure broader access to quality maternal care, especially in rural and underserved communities.¹



Future directions

Enhancing Data Collection and Addressing Disparities:

- Improving the quality and timeliness of data collection to better identify and address disparities in maternal health outcomes.^{1,3}

Securing Funding and Introducing New Bundles:

- Expanding funding opportunities to support the development and implementation of new safety bundles, such as those targeting early cesarean deliveries and early maternal morbidity.³

Technical Assistance and Sustainability:

- Strengthening technical assistance to address staffing and resource variability across states, ensuring the sustainable implementation of Patient Safety Bundles (PSBs) in underserved regions.⁴

Ongoing Research and Protocol Refinements:

- Investigating treatment disparities among Black, Indigenous, and Hispanic populations.⁵
- Enhancing obstetric screening tools and early warning systems.⁵
- Continuously assessing and modifying protocols based on interdisciplinary reviews of sepsis cases.⁵

Development and Evaluation of the Program

Identify at least two ways that you, as a clinician, researcher, data scientist, or public health professional, could become involved in the development and evaluation of a program.

- As a public **data scientist**, we could contribute to the standardized data collection and analysis of maternal health data through systems like the Maternal Mortality Review Information Application (MMRIA), which would help track maternal deaths and morbidity, providing critical evidence for designing future interventions.¹
- We could integrate health equity measures into data systems by ensuring disaggregation of data by race, ethnicity, and socioeconomic status. This approach would help identify disparities in maternal health outcomes and inform targeted strategies to reduce inequities.⁴
- As a **researcher**, we could improve data collection processes and conduct in-depth analyses to track the effectiveness of AIM's maternal safety bundles. This could include identifying trends, measuring success rates, and highlighting areas for improvement.³
- By leveraging AIM's data, we could support the development of predictive analytics tools to identify high-risk populations. These tools would guide targeted interventions and help healthcare teams proactively address maternal morbidity and mortality.⁴

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Thank
you

