

## From the Bottom to the Top: How Alaska Became a Leader in Perinatal Regionalization

*Alaska has a geography problem—at 2.3 times the size of Texas, its vast landscape and harsh climate renders some areas unreachable by traditional travel for months at a time. Some frontier villages are so underdeveloped that they lack potable water or sewer systems. These challenges made for very negative maternal and child health outcomes until Alaska built a system of perinatal regionalization that now leads the nation.*

### Overview

In the 1980s, Alaska had the second-highest mortality rate in the country for babies less than 28 days old. Today, the state has the lowest post-neonatal death rate in the nation, nearly half a percent better than the second-lowest state, Vermont. Perinatal regionalization—ensuring adequate medical and supportive resources in a geographic area to identify, triage, and treat high-risk mothers and infants—made this progress possible.

In the 1980s, when mothers delivered very sick infants too early in many parts of Alaska, the infants often died. The state's uniquely challenging circumstances bred ingenious and collaborative solutions for improving maternal and child health outcomes. The system has improved piece by piece through the years, as Alaska continually assessed its needs and resources. This brief explores the improvements in workforce, transportation, systems collaboration, and data collection that have led to the state's success. Behind all of these advancements, however, was the key stakeholders' willingness to collaborate on the shared goal of improved maternal and child health outcomes in Alaska.

### Workforce Improvements Across the Continuum of Care

#### *The Beginning*

Alaska's perinatal regionalization program began when a handful of public health and medical professionals recognized the state's inadequate workforce. Three decades ago, health professionals in rural and frontier areas were almost entirely untrained in neonatal stabilization and resuscitation and lacked basic equipment to care for preterm infants. A handful of small grants, including some funding from the state's Title V Maternal and Child Health Block grant, provided travel and training funding for neonatologists and nurses to work in hospitals in sub-regional frontier and rural communities. In those communities, specially-trained health professionals taught local providers and residents the basics, including how to identify babies in distress, keep infants warm, and stabilize and resuscitate infants. Beyond educating individuals, these trips built relationships between frontier, rural, and urban medical

- In the 1980s, Alaska had the second-highest death rate among babies less than 28 days old.
- At its peak, Alaska's post-neonatal mortality rate was seven deaths per 1,000 live births.
- Today, rates are down to 1.92 deaths per 1,000 births.\*
- Alaska Native newborns still die at approximately three times the rate of non-Native newborns; however, Alaska's public health system has made great strides toward closing that gap.

\*Based on 2010 data (the most recent available)

communities and started conversations between state experts and local providers about possible collaborations to improve maternal and child health (MCH) outcomes.

### *Training More Specialists*

Alaska also recognized its severe shortage of fetal medicine specialists—a single neonatologist and a handful of rotating fellows staffed the state’s only Level III Newborn Intensive Care Unit (NICU). The state worked for decades to address this and a general medical professional shortage. In the early 1970s, Alaska joined Washington state, Montana, and Idaho to form the organization WWAMI, which provides publically-funded medical education at other state colleges for residents who make a commitment to return to their home states to practice (Wyoming joined the coalition in 1996 and makes up the second “W”). Using continued surveillance and maternal and child health needs assessments, the health department has made the case for creating several pediatric specialties for Alaska’s WWAMI and other medical students. Universities increased their capacities to ensure that Alaskan medical students could complete three of their four years of school in state. In 2007, the state legislature approved doubling its WWAMI class size to 20 students per year.

### *Training Rural and Frontier Providers*

Fetal medicine specialists are essential in ensuring healthy outcomes for mothers and babies, but the backbone of the perinatal regionalization system is made up of non-doctor professionals who provide primary prenatal care and screen women for high-risk pregnancies. These nurses and nurse practitioners typically work in rural communities to get expectant mothers connected to larger, more specialized systems if they need it. Alaska recognized these professionals’ important role around the 1970s and invested in their education. Tertiary hospitals and the Alaska Division of Public Health’s (ADPH) Title V MCH program offered continuing education courses to public health nurses stationed around the state, as well as nurse practitioners, certified nurse midwives and hospital nursing staff. The courses were offered several times a year to deepen providers’ knowledge and skills around identifying pregnancy risk factors and the early identification, screening, and referral for pregnancy-related complications.

Eventually, local nurses and physicians developed expertise in these areas and trained other locals, helping to standardize a better level of care. WWAMI physicians began participating as training faculty, further enhancing the connection between rural and frontier practitioners and the specialists in urban areas. These relationships were vital to the success of perinatal regionalization. Currently, local practitioners can identify high-risk mothers, triage effectively, and refer patients to a trusted system of specialists in regional hubs or Anchorage.

### *Collaboration with Indian Health Services*

Because Native women and infants disproportionately suffer poor birth outcomes, Alaskan health officials collaborated with Indian Health Services (IHS) to connect Native communities to the burgeoning perinatal regionalization system. The IHS healthcare professionals worked closely with the IHS paraprofessional community health aides (CHA) to develop local Native knowledge of MCH. They stationed CHAs in remote villages and trained them to deliver basic and emergency healthcare services to native village residents. The CHAs were then supervised by sub-regional nurse practitioners and physicians over the phone. Their enhanced training meant that the health aides could recognize and identify at-risk pregnant women and women experiencing early preterm labor or other complications. Local experts who could identify prenatal risk factors, the signs of preterm labor, and other serious

complications could quickly transfer women to sub-regional hospitals for further assessment and diagnostic procedures.

The health practitioners worked with the CHAs to build the native village residents' trust and confidence in the new system's competence to care for pregnant and postpartum women. Eventually, pregnancy and delivery care were transitioned from the villages to the sub-regional hospitals where babies were delivered by physicians or certified nurse midwives. Alaska Native Medical Center was visionary in its decision to add first one, then two maternal-fetal medicine specialists over the last 15 years to support care delivery to Alaska Native women and their babies. These two specialists work in collaboration with three additional maternal-fetal specialists in Anchorage to offer direct care and consultation throughout the state.

## **Transportation: A Critical Component**

### *The Challenge*

About half of Alaska's population lives in or near Anchorage, which has hospitals and specialists to care for acutely ill expectant mothers and premature infants. The other 50 percent must travel there — sometimes thousands of miles—for complex medical care, making a specialized transportation system a critical component of perinatal regionalization. The transportation system works throughout a woman's pregnancy to ensure that she has access to the level of care her condition requires. The transportation puzzle isn't merely a question of shuttling women from one city to another. It must account for unique geographical challenges, such as reaching women in villages only accessible by air service, snow machine, boat, or dogsled in the winter, or servicing dozens of coastal islands that do not have airports. Thousands of miles separate some cities in Alaska, making a ground transport system impossible to operate for most of the state.

The first transport system for pregnant women was rudimentary: it required local rural providers to call multiple private transport operators and arrange rides themselves, which used up precious time in emergent situations. In addition, waiting to transport patients until labor began was often too late to ensure good outcomes. Over the years, state health officials, Medicaid agency staff, private transport companies, healthcare providers, and tribal officials have created a more streamlined process that now includes a merged perinatal transport system that serves the whole state, including tribal areas. These groups also cooperated to reduce the number of emergent transports. As soon as women are identified as at-risk, their referrals for care at Level II and Level III centers, along with their travel to them, is approved.

### *Patient Perspective*

The perinatal transport team generally consists of a neonatal nurse practitioner and a registered nurse, both of whom are trained to care for pregnant women and neonates. Additional providers are added depending on the case. Patients travel by ambulance, specially equipped helicopters, or fixed wing aircraft, depending on the location of the patient, the weather, and the time of day. It takes on average 6-8 hours to transport a patient from rural Alaska to the correct level hospital, with transport from the most far-flung islands taking over 12 hours. As a result, women often travel to medical hubs long before labor begins.

Healthy women who live in remote villages travel by commercial jet around 34 to 36 weeks of pregnancy to a regional medical center where they can safely deliver. When a woman comes in from a remote village for care, coordinators try to make sure she can also get other needed medical appointments, such as dental visits or eye appointments. Insurance, public and private, pays for the woman to fly to the regional hub for appointments throughout her pregnancy, if necessary. Several of the outer lying Alaska Native sub-regional hospitals have connecting maternal homes where pregnant women can stay until their delivery. Especially high-risk women may move to a regional hub earlier in their pregnancy or have more frequent visits with their healthcare providers. Fairbanks' Level II nursery is an important meeting point in the middle of the state and serves both Alaska Native and non-native people.

The most critically ill patients may be transferred via air ambulance or move to Anchorage early in their pregnancies to receive treatment from a Level II or Level III NICU with perinatal and neonatal specialists. If a woman needs to come to Anchorage for delivery, housing is covered either at housing units located on the Alaska Medical Center campus, the Providence Medical Center Hickel House, or in hotels. Medicaid covers the costs of housing, meals, and transportation to and from appointments at the Medicaid established rates.

## **Systems Collaboration**

Perinatal regionalization's goal is healthy outcomes for mothers and babies. But regionalization also has made the healthcare system more efficient by reducing duplication and overall costs for all payors. Providence Alaska Medical Center's Children's Hospital in Anchorage has become the center point of perinatal regionalization. As the heart of the system, Providence admits patients from both private and tribal providers and serves Medicaid and privately insured patients. Providers collaborate to identify, link, and sometimes fund wraparound services necessary for regionalization.

Alaskans feel that their systems should collaborate for the good of the obstetric and perinatal community, rather than competing for paychecks. For example, instead of having each hospital recruit and support its own perinatal professionals, hospitals and other health care groups—spurred on by state MCH data—often recruit specialists together. These doctors see patients outside their networks and contribute to the common goal of improving birth outcomes. In another example, financially-minded consolidation led Anchorage area hospitals to support the goal of having only one Level III NICU, rather than establishing this care at all hospitals.

## **Data and the State Health Department's Role**

Historically, Alaska's health department's role in perinatal regionalization was to gather and present data highlighting MCH needs and systemic deficits. Recently, however, the health department has also become a central force in maintaining and perpetuating perinatal regionalization's success. As the facilitator of systemic collaboration, ADPH's Women's Children's and Family Health (WCFH) division brings stakeholders together on neutral turf and also offers physical space for meetings and division staff to act as facilitators.

The department's data collection efforts tell the story of Alaska's success and show stakeholders what areas need continued improvement. The agency conducts community needs assessments and maternal,

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infant, and child mortality reviews, and manages several surveillance systems such as PRAMS (Pregnancy Risk Assessment Monitoring System), a post-PRAMS survey called Childhood Understanding Behavior Survey, newborn screening and birth defects registries, and a multi-data linked system focused on child abuse.

MCH epidemiologists analyze and share outcome data through publications, presentations at hospitals and conferences, and manuscripts focused on intervention results and comparisons with other states and the nation. WCFH implements public health interventions and provides education and technical assistance to promote and implement best practices. To ensure that the system continues to improve and address new issues, WCFH also studies the effectiveness of solutions that the group implements and shares its findings.

Alaska reduced its post-neonatal death rates in part due to WCFH public health efforts aimed at reducing the risk factors that contribute to preterm birth. State officials worked closely with healthcare providers to develop interventions to reduce substance abuse, particularly alcohol use, and encourage tobacco cessation among pregnant women. Other important care coordination strategies include screening women for domestic violence and connecting women with social support systems like the Women, Infants and Children nutrition program. It's also important to do active outreach to enroll pregnant and parenting women in Alaska's Medicaid and CHIP to ensure that they receive prenatal care.

Finally, Alaska's health department facilitates the All Alaska Pediatric Partnership (A2P2), a coalition of maternity-care hospitals, military installations, and their healthcare systems and tribal health systems. In existence for 19 years, [A2P2](#) established measureable goals and objectives to build a system of care that will improve outcomes for mothers and children. Participating hospitals, along with state and tribal entities, contribute funds to support a three-quarter time executive director. The coalition serves as a virtual "tent" for other agencies to share issues, comes up with constructive educational tools, and develops interventions that will ultimately lead to positive change.