



Improving maternal outcomes by expanding the midwifery workforce in Arizona communities

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THE UNIVERSITY OF ARIZONA

College of Nursing



OBJECTIVES

- 1. Review the data documenting the maternal health crisis in Arizona and nationally.
- 2. Discuss how expanding the midwifery workforce and implementing the midwifery model of care will improve maternal outcomes in the state of Arizona.
- 3. Describe the University of Arizona midwifery educational program, efforts to promote diversity within the profession, and incorporation of antiracist content in the curriculum.

What is a midwife?



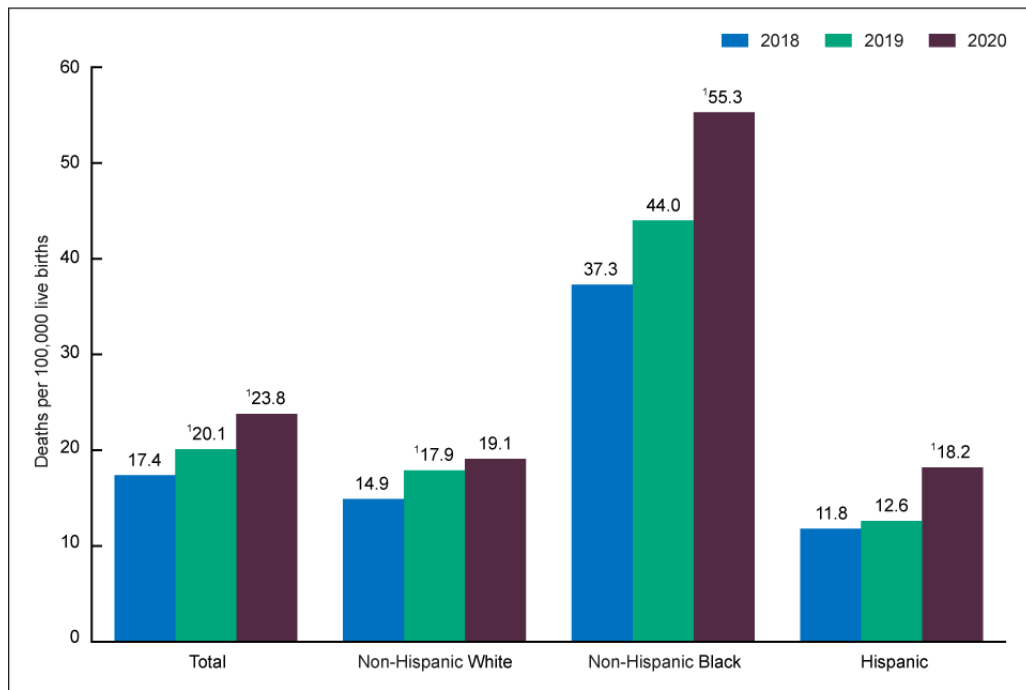
Certified Nurse-Midwife
Certified Midwife
Certified Professional
Midwife



Maternal Mortality in US

	2018	2019	2020	2021	2022
Maternal Deaths	658 (17.4)	754 (20.1)	861 (23.8)	1200* (32.9)	733**

Maternal Mortality in US

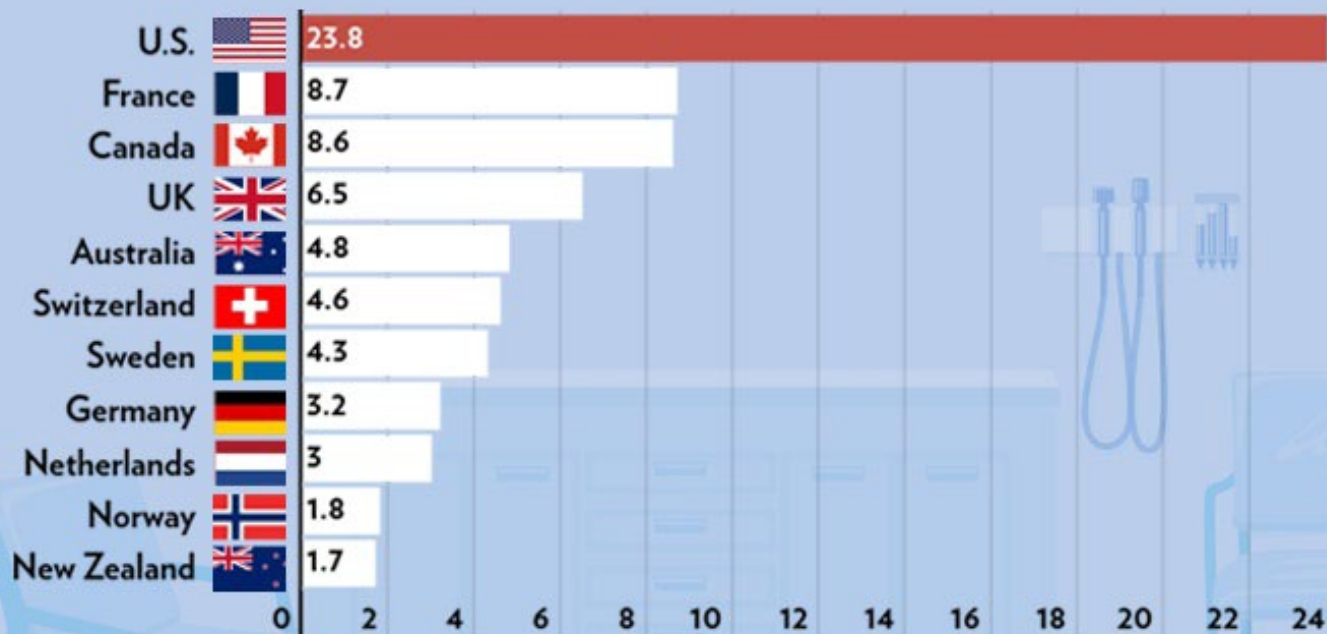


¹Statistically significant increase in rate from previous year ($p < 0.05$).

NOTE: Race groups are single race.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

Maternal Mortality in the U.S. Far Outstrips That of Other Industrialized Nations



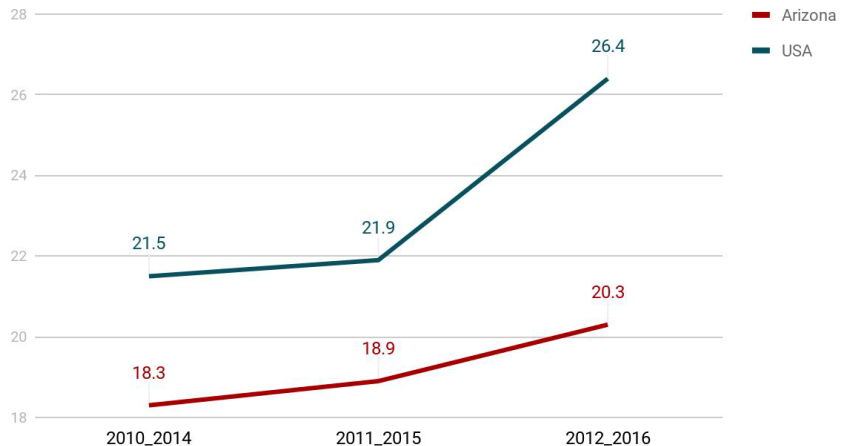
*Deaths per 100,000 live births

Source: <https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2020/maternal-mortality-rates-2020.htm>

Maternal Mortality in Arizona

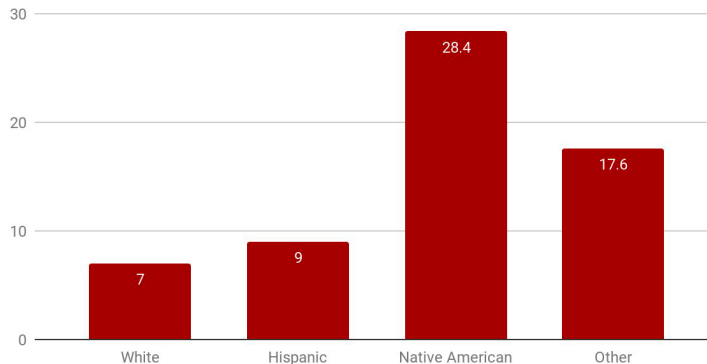
- U.S. has the highest maternal mortality rate of developed countries
- 20.3 maternal deaths per 100,000 live births in Arizona (2012-2016)

Maternal Mortality Rate per 100,000 Live Births



Maternal Mortality Rate by Race/Ethnicity

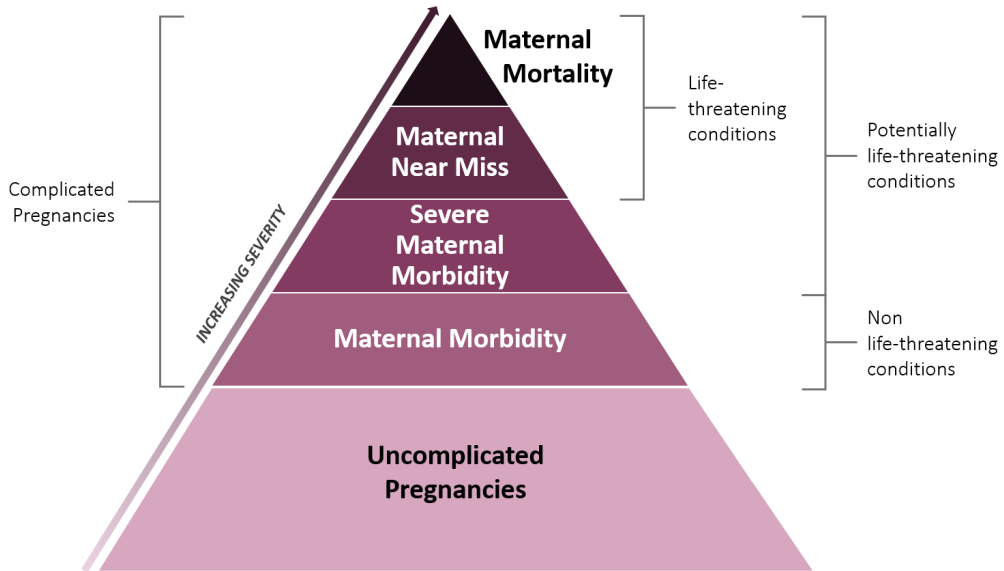
Arizona Maternal Mortality Rate (per 1,000 live births) by Race/Ethnicity (2012-2015)



2016 Arizona Maternal Mortality Review Program Report
2012-2015 Arizona Vital Records

AZ Department of Health Services

Spectrum of Maternal Health Outcomes

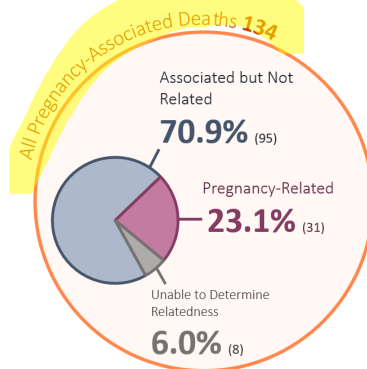


Adapted from:

Vandenbergh G, Roelens K, Van Leeuw V, et al., The Belgian Obstetric Surveillance System to monitor severe maternal morbidity. *Facts, Views & Vision in Obgyn*. 2017;9(4):181-188.

Maternal Mortality: 2016-2017 Arizona MMRC Reviewed Deaths

Deaths in Arizona of Women 15-49 Years Old with a Pregnancy in the Previous 365 Days

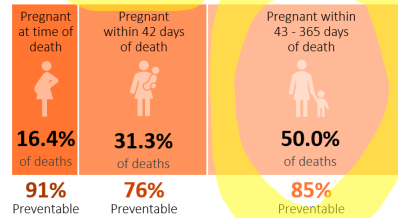


Mortality Ratio (deaths per 100,000 births)

Pregnancy-Associated Mortality Ratio	79.1
Pregnancy-Related Mortality Ratio	18.3

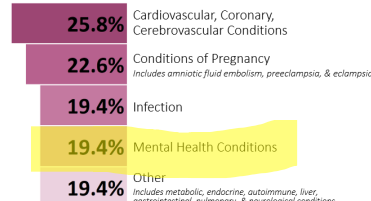
83.6% of Pregnancy-Associated & **80.6%** of Pregnancy-Related deaths were **Preventable**

Timing of Pregnancy-Associated Deaths



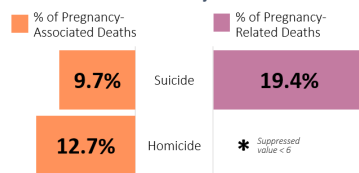
Note: Due to limitations of cases reviewed prior to full implementation of MMRA, some data are incomplete (2.2% of reviewed cases)

Underlying Cause of Pregnancy-Related Deaths



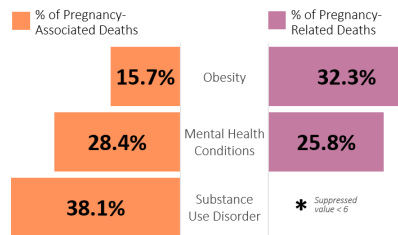
Note: Total will be more than 100% as 2 cases had multiple underlying cause codes

Deaths from Intentional Injuries



* Suppressed value < 6

Conditions Contributing to the Death



* Suppressed value < 6

Definitions

Pregnancy-Associated:

The death of a woman during pregnancy or within one year of the end of pregnancy, regardless of the cause.

Pregnancy-Related:

The death of a woman during pregnancy or within one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

Preventability:

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, community, provider, facility, and/or systems factors.

Severe Maternal Morbidity: 2016-2019

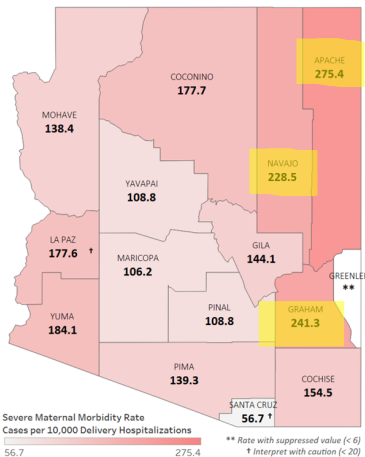
In-State Delivery Hospitalizations of Arizona Residents

AVG

119.4

SMM Rate per 10,000 Arizona Resident Delivery Hospitalizations, 2016-2019

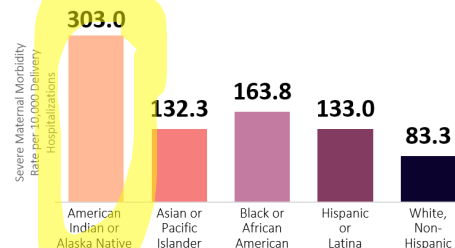
SMM Rate by County of Residence



Severe Maternal Morbidity (SMM):

Unexpected conditions or outcomes of pregnancy, delivery, or postpartum that aggravate or lead to significant negative effects on a woman's health and wellbeing.

SMM Rate by Race and Ethnicity



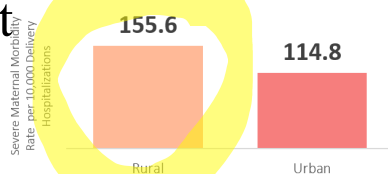
Top Diagnoses Indicators of SMM

Adult Respiratory Distress Syndrome	8.4%
Acute Renal Failure	7.7%
Sepsis	7.6%
Disseminated Intravascular Coagulation (DIC)	6.5%
Acute Heart Failure / Pulmonary Edema	6.0%
Shock	5.6%

Top Procedure Indicators of SMM

Transfusion	67.6%
Hysterectomy	7.8%
Ventilation	4.5%

SMM Rate for Urban and Rural Counties



Rural counties are Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai; Urban counties are Maricopa, Pima, Pinal, and Yuma; Based on definitions used by the ADHS Bureau of Public Health Statistics.

Rural Impact

Pima County 2021 Community Health Needs Assessment



Notable Disparity: The amount of prenatal care received differs greatly by PCA.

Rates of occurrence for selected characteristics of newborns and mothers giving birth in Pima County, Arizona Department of Health Services 2019	
Characteristics	RATE PER 100 BIRTHS
Births with complications of labor and/or delivery	32.3
Births with medical risk factors	33.1
Preterm births (gestational age <37 weeks)	9.9
Births with abnormal conditions of the newborn	6.8
Low birthweight births (<2,500 grams)	8.2
Very low birthweight births (<1,500 grams)	1.2
Births with congenital anomalies of the newborn	0.5
Tobacco use during pregnancy	5.1
C-section	27.8
Infants admitted to newborn intensive care units	11.5
Women giving birth who received prenatal care in the 1st trimester	64.0
Public sources of payment for birth	51.0
Births to unmarried mothers	45.5

Table 9 Rates of occurrence for selected characteristics of newborns and mothers giving birth in Pima County⁴

Teen pregnancies have showed a decreasing trend since 2009 in Pima County. In 2019, there were 4.1 pregnancies per 1,000 females ages 10-17 compared to 11.2 in 2009. Among 18-19-year-olds, there were 35.2 pregnancies per 1,000 females compared to 82.3 in 2009 (Table 10).⁴

Pima County 2021 Community Health Needs Assessment

2019

- 10,357 births in Pima County
- 9.9% preterm (<37wks)
- 32.3% involved complications
- 33.1% medical risk factors
- 11.5% admitted to the NICU

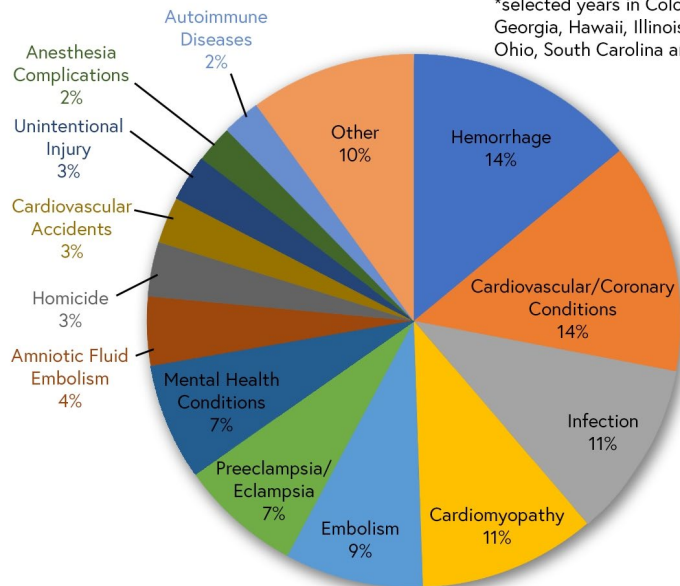
2019

- 5.9/1,000 infant mortality ratio (61 infants)
- 2013-2019
 - White 4/1,000
 - Black 8/1,000
 - Native American 10/1,000
 - Hispanic 5/1,000

Why?

Causes of pregnancy-related deaths*

*selected years in Colorado, Delaware, Georgia, Hawaii, Illinois, North Carolina, Ohio, South Carolina and Utah



|reckonomics| data from Building U.S.
Capacity to Review and
Prevent Maternal Deaths

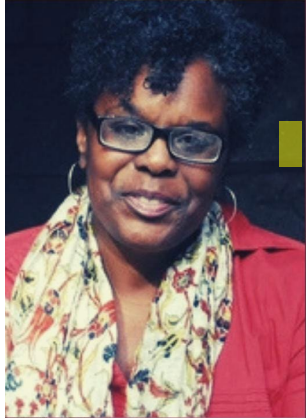
No really, but why?



- **Shalon MauRene Irving**
- **Lieutenant Commander in the U.S. Public Health Service and worked at the Centers for Disease Control and Prevention**
- **Focus of her work was on structural inequalities, trauma, and health disparities**
- **She died three weeks after giving birth to her first child**
- **The cause of death was complications caused by high blood pressure**

Obstetric Racism

Dána-Ain Davis,
PhD, MPH



"Obstetric racism is a threat to maternal life and neonatal outcomes. It includes, but is not limited to, critical lapses in diagnosis; being neglected, dismissive, or disrespectful; causing pain; and engaging in medical abuse through coercion to perform procedures or performing procedures without consent."

DAVIS, D. (2018). OBSTETRIC RACISM: RACIAL POLITICS OF PREGNANCY, LABOR, AND BIRTHING. MEDICAL ANTHROPOLOGY. DOI: 10.1080/01459740.2018.1549358

BLACK MATERNAL HEALTH WEEK 2019
#CiteBlackWomen
© Black Mamas Matter Alliance

#BMHW19

- Racism
- Discrimination
- Bias
- Weathering
- Social Determinants of Health

Midwifery Care is Effective

- Integrate into the health care team in collaborative practice models
- Increase access to care
- Holistic approach
- Supports physiologic birth
- Engages in shared decision-making
- Encourages autonomy, responsibility, and self determination
- Creates environment of respect and safety

THE LANCET

June, 2014

www.thelancet.com

Midwifery

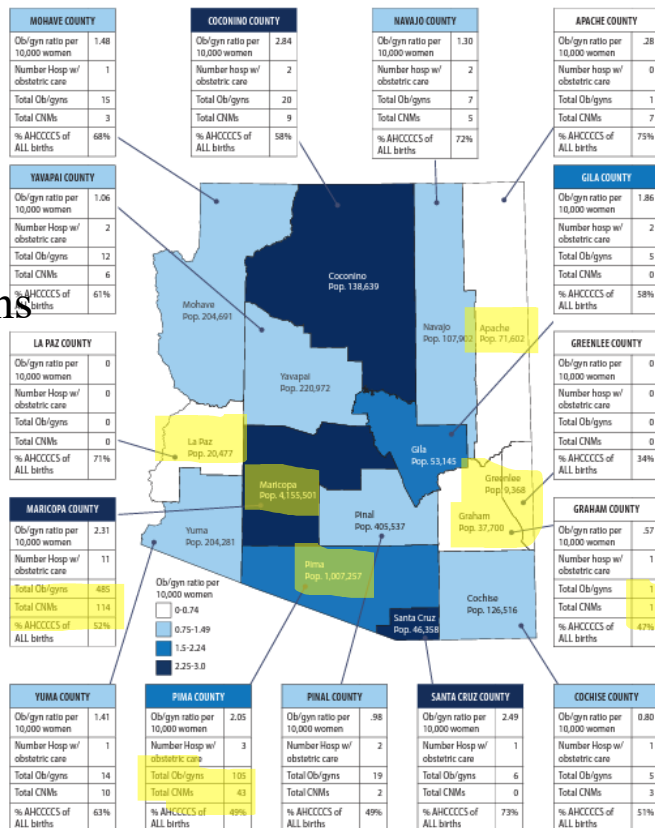
An Executive Summary for The Lancet's Series



"Midwifery is a vital solution to the challenges of providing high-quality maternal and newborn care for all women and newborn infants, in all countries"

OB-GYN PHYSICIANS AND CERTIFIED NURSE MIDWIVES BY COUNTY

ARIZONA EST. POP. 7.1 MILLION | 695 OB-GYN PHYSICIANS | 203 CNMS | 2.03 OB-GYNS PER 10,000 WOMEN



Ob-gyn physicians by county rely on Arizona licensure data. CNM data is from the federal National Plan and Provider Enumeration System. Hospitals with obstetrics care is from the Health Resources and Services Administration (HRSA) Area Health Resource File (AHRF). Obstetric care is measured as an affirmative response to the American Hospital Association Facility Survey item about obstetrics beds. There are some cases (e.g., Apache county) where the AHRF lists zero hospitals with obstetrics care. However, vital statistics from the Arizona Department of Health Services show hospitals reporting births in 2018. Data limitations: does not include, family physicians who provide prenatal, obstetric, and post-partum care or NPs and PAs.

1.Rural Data
2.WHO Calculations

We do not have enough... providers, nurses, hospital beds

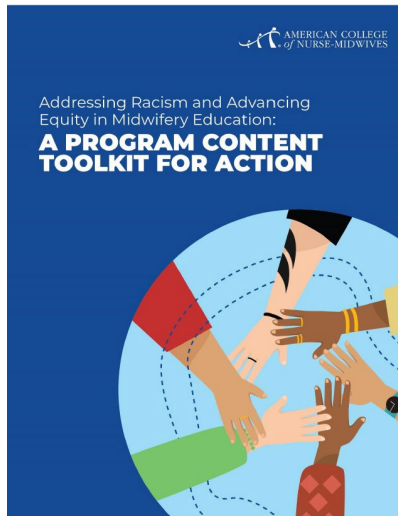
- Efficient use of our resources
 - Collaborative practice models
 - Practice to full scope of licensure
- Judicious use of interventions
 - Evidence based practice

University of Arizona Nurse-Midwifery Program

- DNP Program
 - 3-year program, 69 credits, 900 clinical hours
 - Hybrid model of on-line and on campus experiences
- Certificate option (for APRN with MSN or DNP)
 - 4 semesters, 34 credits, 900 clinical hours
 - Hybrid model of on-line and on campus experiences



Antiracism Curriculum



EQUITY

Next Call: Aug 26

CEUs

IN MIDWIFERY EDUCATION

HOME

CONNECT

TOOLS

EXAMPLES

WEBINARS



LEARNING TOOLS

- [Why is curriculum important?](#)
- [Resources: Training Faculty & Staff](#)
- [Policies and Position Statements](#)
- [Creating an Inclusive Climate](#)
- [Recruiting & Retaining Students/Faculty of Color](#)
- [Analyzing the Accreditation & Certification Process](#)
- [Resources: Planning & Evaluating Success](#)
- [How do we strengthen our current systems?](#)



EXAMPLES

- [Explore Scholarships & Financial Aid Opportunities](#)
- [Dismantle Power & Privilege](#)
- [Mentoring Programs](#)
- [Promoting Peer Support](#)
- [Resources: Cross-Racial Teams](#)
- [Academic Support Strategies](#)
- [Representation in Leadership](#)
- [What is Critical Consciousness?](#)
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- Register for Strategy & Collaboration Calls
- [Contact Us](#) with Questions & Feedback

Click [here](#) to check out our article: Incorporating an Equity Agenda into Health Professions Education and Training to Build a More Representative Workforce

Things to consider for the future...

- Implicit Bias Training for all providers
- Remove barriers to midwifery education (time and money)
- Streamline midwifery education in Arizona
 - Consider CM licensure (NY, PA, DE, HI, ME, MD, CO, OK, RI, VA, DC)
 - Expand use of simulation as a teaching strategy to develop competence
 - Mentoring nurses from diverse backgrounds
 - Create intensive clinical experiences in settings with midwives and then the learner returns to their home community

References

- [Maternal Mortality Rates in the United States, 2021 \(CDC\)](#)
- [Maternal Mortalities and Severe Maternal Morbidity in Arizona, 2020 \(AZDHS\)](#)
- [Maternal Mental Health- and Substance Use-Related Deaths in Arizona, 2022 \(AZDHS\)](#)
- [UArizona OBGYNs and CNMs Work Force Report, 2020 \(UArizona\)](#)
- [Addressing Racism and Advancing Equity in Midwifery Education: Toolkit \(ACNM\)](#)
- [Equity in Midwifery Education \(website\)](#)

Questions

