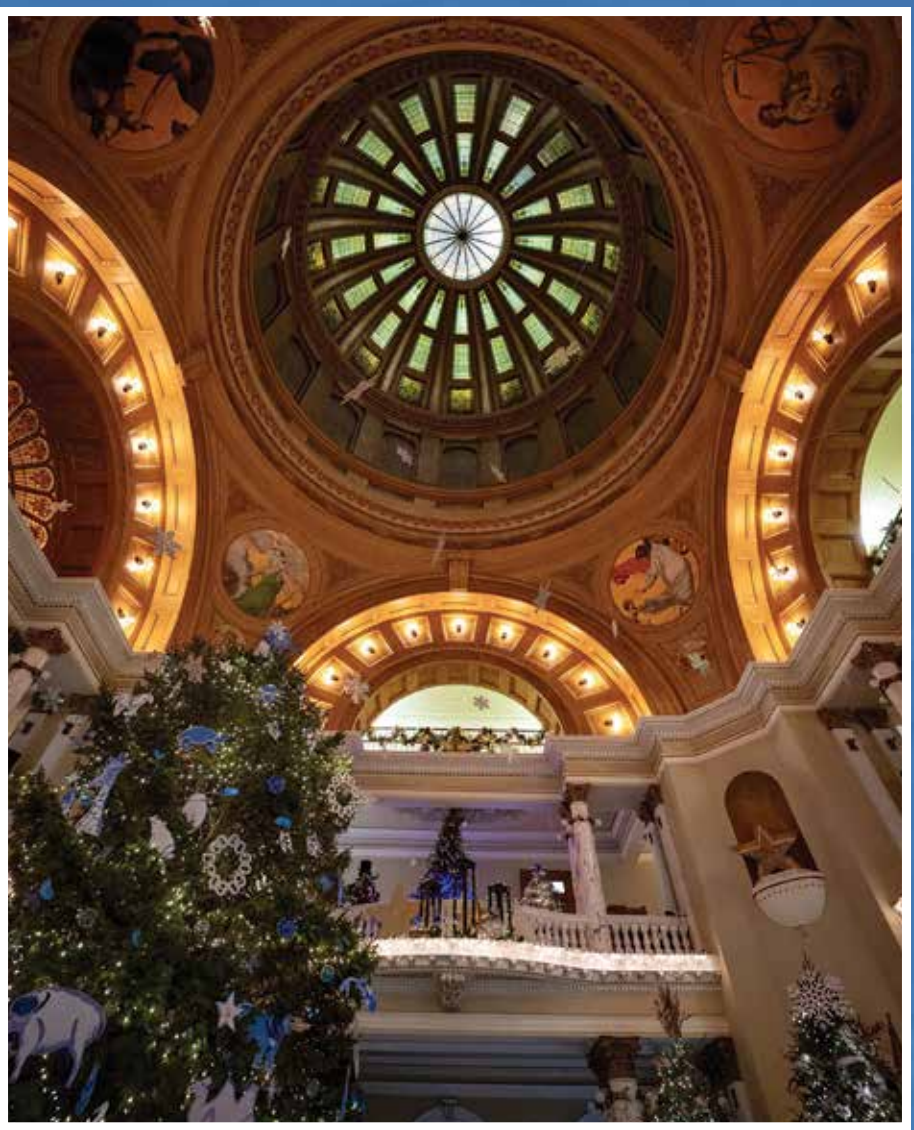
January 2025
Volume 78
Number 1



South Dakota medicine

THE JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

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South Dakota medicine

The Journal of the South Dakota State Medical Association

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South Dakota Medicine
(ISSN 0038-3317)
Published 12 times per year with one special issue by the South Dakota State Medical Association.

The SDSMA thanks the University of South Dakota Sanford School of Medicine for its financial contributions toward the production of South Dakota Medicine.

Subscription price: $50 per year domestic
$65 per year foreign, $8.95 for single copy

Periodicals postage paid at Sioux Falls, South Dakota and additional mailing offices.

Postmaster: Send address changes to
South Dakota Medicine
2600 W. 49th Street, Suite 100
Sioux Falls, SD 57105

SDSMA Home Page: www.sdsma.org

AMA Home Page: www.ama-assn.org

Printer:
Walsworth
P.O. Box 370
Fulton, Missouri 65251-0370

FINANCIAL PLANNING FOR WOMEN:
PREPARING FOR A LONGER LIFE EXPECTANCY

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We continually hear that women are statistically likely to live longer than men. The CDC reports that the average life expectancy for males is 74.8 years and 80.2 years for women. If you have already reached age 65, the numbers go up to 84 and 87 years, respectively. If you are a woman, you may be wondering if your financial plan should look differently than a man's. Or, if you are a couple, how do you effectively plan for both spouses? While there is not a one size fits all financial plan, there are a few things you can think about.

Keeping up with Inflation

When you are working and saving money, it is important to take enough risk with your investments to outpace inflation. Even if you are more conservative about your investment approach, not taking any risk in your portfolio can be the same as losing money, because your dollars buy less and less overtime. It is important to talk with your advisor about how much risk you need to keep ahead of inflation. If we women truly have a longer life expectancy, it may be worth being a little more aggressive in our investing.

Providing for Both Spouses

If you are part of a couple, there could be a pension or income stream that is only distributed to one spouse. It may be wise to consider adding the joint life option when you are making your pension selections so that both spouses are provided for if the spouse that owns the pension dies first. With this option, the amount of money received each month may be less, but the ongoing distributions can be invaluable in the event of an early death. Another option to provide for a spouse is life insurance. Keep in mind that if both spouses are receiving social security income, the amount will be decreased when one spouse dies.

Know your Team

We often see one spouse in a couple take the responsibility for handling the finances while the other spouse is hands off. It is important that both spouses have a relationship with their financial advisor, tax professional, and any other members of the team. It can be stressful to lose your spouse and then have to form new relationships with the team at the same time. Both spouses need to know the team, so either of you are ready if your spouse predeceases you.

Set your Estate Plan

Having a solid estate plan is important no matter what your age or gender. We help clients find an attorney to make sure they have an up-to-date will. Some people will also choose to create a revocable living trust. Other necessary items are power of attorney documents for both financial and healthcare. These documents help ensure your assets go where you want and determine who will make decisions if you are no longer able.

Be Mindful of the Widow's Tax Penalty

A married couple benefits from tax reductions when they file jointly. They are allowed a higher income in different tax brackets. For example, a married couple filing jointly can have income of $23,201 to $92,300 in the 12% bracket. A single person in the 12% bracket can only have income of $11,601 to $47,150. This can be a surprise to widows if they are used to having a specific tax bracket. It's important to be prepared for the tax changes to your financial plan if a spouse dies.

The important thing in all of this is that no matter what your age, gender, or tax bracket, you should have a solid financial plan in place with a trusted advisor who is there to guide and give you the best possible advice. If we as women do end up living longer, let's be prepared for it! At Foster Group, we take a more complete picture of wealth by getting to know our clients and understanding what drives them.

Sources:

https://www.cdc.gov/nchs/fastats/life-expectancy.htm

https://www.ssa.gov/history/lifeexpect.html

SCAN ME

Interested in more content on the latest current events?
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New Year, New Attitude

Jason J. Kemnitz, EdD

Welcome to January! By the time that you read this the Holidazzle will have faded, the decorations will have been stowed, the gathering of friends and family will have become fond memories, and you will have settled into a predictable rhythm again. Notice I did not mention that life would slow down. Because I am sure, no matter how much we would like it to, it won't. I always chuckle slightly when my friends in the academic world ask if the pace slows down for holidays, or the summer, like it does on a traditional college campus, because as we know, medical education never rests.

For those of us at USD SSOM the beginning of the year brings its own challenges. Our students are either finishing their preclinical work, taking STEP 1, and preparing to move to a new phase of their education in a new and sometimes distant location, or finishing their clinical rotations and preparing to take STEP 2 and start the residency interview process. In this time, I am blessed to have many conversations with our students, some relating that they feel they are facing impossible odds, and the one thing I stress over and over is that it is all about your attitude. If you take a positive attitude to a situation the outcome will assuredly be better. As the late, great, Audrey Hepburn once said, "nothing is impossible for the word itself say's I'm possible."

Often, upon reflection of these conversations, I find myself thinking I should take my own advice more often. Like many of you, my year never stops, between faculty issues and governance and my role in student support my attitude dips into the less than happy category sometimes. I imagine it is the same for many of you. Between your practice, the committee work you may have for your system, some may have research, let alone a personal life, things are hectic. Now you must deal with a student as well, I know it's a lot. At times, our attitudes may become somewhat gloomy, but like I tell the students, our attitude affects everything around us. Especially the students and their learning. The AMA reminds us that an attending physician's attitude can have a significant impact on a medical student's learning, with a positive attitude fostering engagement, motivation, and knowledge retention, while a negative attitude can lead to decreased learning, stress, and potentially a negative impact on the student's future practice due to decreased confidence and willingness to ask questions. The trick is to find out why you are feeling like you are and set about ways to adjust it for the benefit of both you and the student. A moment of self-reflection is often helpful. Identify what you are feeling and more importantly **why** you are feeling the way you are. Identifying this emotion will help you eventually figure out how to address the action you need to take to help adjust that emotion (If this idea piques your interest be sure to check out the SSOM's YouTube page. The Pediatric Department has had a great series on emotional intelligence that deals with this topic). As I have started doing this, I realize that often I am reacting poorly simply because I feel overwhelmed. To help alleviate this feeling I take a few simple steps when working with students. First, set small achievable goals. This is a process that we use with students and faculty alike. By achieving small goals, you can build some positive traction on what you are trying to accomplish. Second, connect with the student that interacts with you. Take time to understand them, their interests and background. This will allow you to tailor your teaching to what they need and make it less onerous for you. And finally, engage in some self-care with your students. Let them know how you manage stress, and what you enjoy about your career. This will help students identify with you and may make your interactions better.

Will these steps help make the days less busy and help you overcome all your challenges? The honest answer is no, but at the very least it will make your day more enjoyable and give you a chance to enjoy some of the time in a sometimes-chaotic life. As one of my favorite British literary characters "The Doctor" once said "We are all just stories in the end, just make it a good one eh?

About the Author:

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Caring for Vulnerable Populations

Jen Tinguely, MD, MPH
President, South Dakota State Medical Association

Last week I received a letter from a specialty clinic here in Sioux Falls making me aware that they were stopping their care of a 12-year-old type I diabetic patient because he had no-showed too many appointments and was non-compliant with the plan of care that had been laid out for him. I was simultaneously heartbroken and furious when I read the letter, but I suppose I was also grateful they let me know that they were stopping their care for him. This allowed my team at Falls Community Health to get in touch with the family and get the patient scheduled with me for ongoing care, because a type I diabetic needs to continue receiving prescriptions for insulin and testing supplies in order to maintain life. We were able to reach the family and see him. Yes, his A1C is above 11, but does that mean I should stop caring for him? I couldn't fathom doing such a thing and our medical clinic would never "fire" a patient for no-showing too many appointments. This is the inherent challenge of being a safety net provider. We do not get to pick and choose which patients we want to care for, and we must create scheduling templates that take into consideration the more than 25% no-show rate that our patients leave us with.

The high no-show rate in our clinic is reflective of the fact that we provide care for some of the most marginalized and vulnerable populations in the community. The word "vulnerable" comes from the Latin word for wounded ("vulnus" means "wound"). Kevin Grumbach, MD, professor of family and community medicine at UCSF, and colleagues write that, "in a sense, medically vulnerable populations are those that are wounded by social forces placing them at a disadvantage for their health." It is easy to say that my young diabetic patient is at a disadvantage for his own health. First, he relies on his family for transportation to appointments, so his no-shows are out of his control. Second, his parents work overnight shifts, which means daytime appointments are often difficult and must be strategically scheduled. Third, his family recently immigrated to the United States and English is not their first language. All these factors pile up, which means that we, as a clinic, must work harder to help him achieve better health. I have worked in this type of clinic environment for long enough to know that the hard work is worth it. I've been here before with patients like him, and I anticipate with glee the eye roll I'll get from this pre-teen patient when I reach out for a fist bump when his A1C drops below 10 (because we all have to start with practical goals)!

All clinicians will interact with vulnerable populations, and it cannot be ignored that these populations often have staggering health disparities when compared to a "non-vulnerable" population. Some of these vulnerable populations include low socio-economic status individuals, racial and ethnic minorities, immigrants, women, LGBT individuals, people with disabilities (including mental health and substance use disorders), incarcerated individuals and rural. Many of these groupings overlap — ethnic and racial minorities are more likely to be poor, incarcerated populations have staggeringly high rates of mental health disorders and are also disproportionately non-White. The data on incarceration rates within the United States is deplorable, with a rate of 380/100,000 White persons compared to 2,207/100,000 Black persons. While we, as physicians, cannot fix the justice system, we can provide competent and compassionate care to incarcerated individuals when given the chance. We must also be aware that Black people have much higher rates of diabetes, hypertension and heart disease than other groups.

I think living in South Dakota, we are all aware of the health disparities that exist among our Native American residents. We know of their high rates of diabetes and chronic kidney disease, but we should all pay closer attention to the mental health crisis that is unfolding on our reservations. Each one of us, no matter our specialty, has an opportunity to make a positive impact for patients who fall into one of many vulnerable populations mentioned earlier. And, as for my 12-year-old refugee patient with diabetes, this family practice trained physician now gets to practice being the pediatric endocrinologist. I'm very confident that I'll find joy and satisfaction in doing just that.

State of South Dakota's Child: 2024

Ann L. Wilson, PhD; Tyler A. Hemmingson, MPH; and Brad Randall, MD

Warmest greetings I share with you as I hope our new year will be healthy, gratifying, and happy for you and your families.

Each year the January edition of South Dakota Medicine includes this article that describes the births and sad deaths of the infants that arrived in our state the previous year. This year's report shares the good news that our 2023 infant mortality rate declined from the previous year but remains higher than that of the nation. Further, the report highlights racial disparities. These are challenging issues that require determined efforts to assure a strong future for us all.

I thank you always for your dedicated care for the health of our communities. Let's move forward this new year with continued dedication to providing the best start for our youngest and precious citizens!

Tim Ridgway, MD, MACP, FASGE
Dean, University of South Dakota Sanford School of Medicine
Vice President for Health Affairs

Abstract

There was a slight decrease (n=23) in the 11,170 live births in South Dakota between 2022 and 2023 with the state's birth rate falling to its lowest rate (12.2 per 1,000 population) in its recorded history. The state's percentage of American Indian, Black and Other (AIBO) live born infants is declining and currently comprises 21% (down from 25% in 2017) of the 2023 birth cohort with American Indians decreasing in their respective contribution to it as diversity of newborns is increasing. Though lower than observed nationally, the state's newborns with birth weights of 1,500 to 2,499 grams are also increasing. In 2023, AIBO, compared to White newborns, have a higher percent of very low birth weight (2% vs 1%) and mid low birth weight (7% vs 6%). First trimester prenatal care is used by over 80% of White pregnant women but only 53% of AIBO pregnant women for whom 8% received no prenatal care. In 2023, there was a decrease in the state's infant mortality rate from 7.8 to 6.4 (deaths per 1,000 live births 0 to 364 days of life) with declines noted in both the neonatal (0 to 27days of life) and the post neonatal (28-364 days of life) period. Between the years 2019-2023, the state's rates of death for AIBO infants in the neonatal and post neonatal periods were significantly higher ($p<.01$) than these rates for White infants. Contributing to this observation are higher AIBO than White rates ($p<0.01$) of infant deaths for perinatal causes, congenital anomalies, sudden unexpected infant death (SUID). The racial disparity in infant mortality has recently become more apparent, especially in the post neonatal period when SUIDs are the leading cause of death.

This annual report provides a review of data on South Dakota's births and deaths of infants and compares outcomes within the state and with the nation. This information is provided to understand needs that could be addressed to prevent the loss of life during the first year of a family's journey into the future.

Natality

The year 2023 brought 11,170 live born new babies to the state of South Dakota.[1] Figure 1 shows that this number is slightly less (n=23) than the number of newborns arriving in the state the previous year. Quite apparent in this same figure, however, is the nearly 10% (9.8%) decline in South Dakota's live births between 2015 and 2023.

South Dakota's decline in births accompanies national trends that are receiving considerable attention. In May 2024, the White House released a report on the macroeconomic

implications of the nation's fertility rate (births per 1,000 women ages 15-44) in 2023 that declined to its lowest level (56.0) in recorded history.[2] Figure 2 compares the South Dakota's 2023 birth rate of 12.2 (births per 1,000 population) with the 2022 rate of 11 for the nation.[1,3] Apparent in this figure is that South Dakota has recorded in 2023 its lowest birth rate to date. Nonetheless, as noted, the state's birth rate remains slightly higher than the national rate. Further, the most recent national data available (2022) show that the state's fertility rate (66.5) was the highest reported for any state in the country. Yet, in 2023, provisional data show that it declined to 65.5 with racial variation noted (60.9 White; 85.7 American Indian; 86.5 Hispanic and 72.2 Black).[1]

A look beyond the absolute annual numbers and their rates provides a view of dimensions of the recent birth cohort that contribute to an understanding of social determinants affecting perinatal outcomes. Data on the geography of births provide one such view that shows how approaching half (47%) of all newborns are residents of two West River neighboring counties (Pennington and Lawrence) and two East River neighboring counties (Minnehaha and Lincoln).[1] Another social variable is race and Figure 3 presents these data for mothers of South Dakota's 2023 newborns. This figure shows that 71% of all mothers who delivered a live newborn this year were White and non-Hispanic, while 29% were of other racial backgrounds. American Indians comprise the largest segment of non-White newborns and 12% of all 2023 births. Figure 3 also contrasts the racial backgrounds of the 2023 birth cohort with its distribution for the total population of all ages in the state as a whole. Noted in this figure is how the most recent 2023 cohort of White newborns is approximately 10% smaller than the White composition of the state's entire population (71% vs 79%). Alternately, the percents of the state's Hispanic and American Indian newborns are slightly larger than what is observed in the state's total population.[1,4]

Figure 4 allows an understanding of the shifting contribution of what is referred to in this article as the American Indian, Black, and Other population (AIBO). To enable use of longitudinal data, Hispanics are included as part of the White population. As differentiation of state and national data for these two groups (Whites and Hispanics) has only recently begun, they are combined throughout this article so that there may be consistency in the longitudinal trends that are plotted in the figures that follow.

Specifically, Figure 4 shows that the AIBO contribution to

Figure 1. Total births, South Dakota,1960-2023.

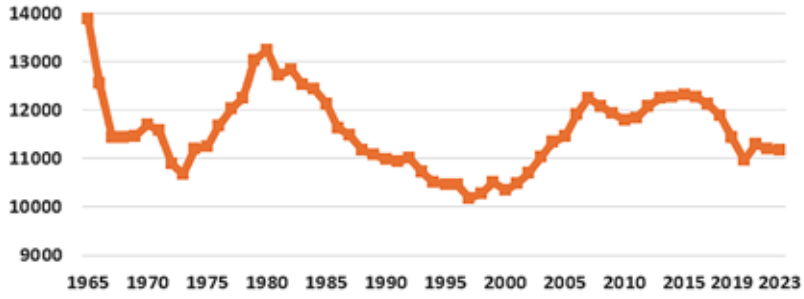


Figure 2. Birth rates, South Dakota and United States, 1910-2023.

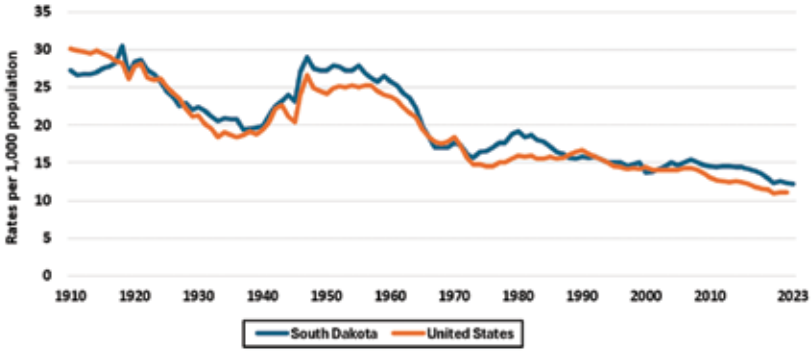


Figure 3. Racial background of total population and newborns, South Dakota, 2023.

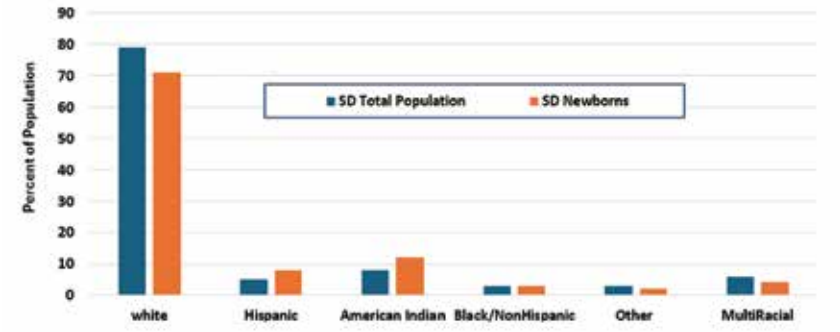
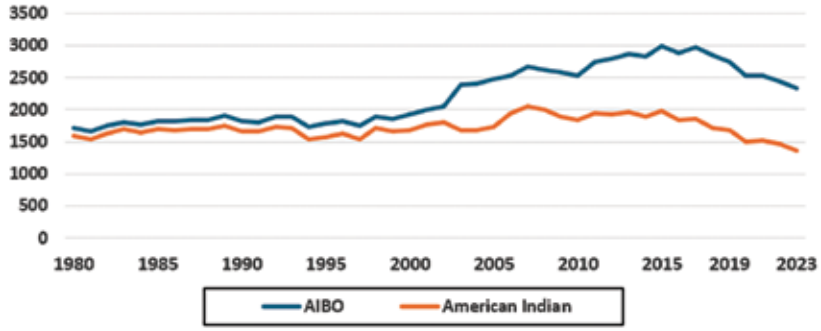


Figure 4. AIBO and American Indian newborns, South Dakota, 1980-2022.

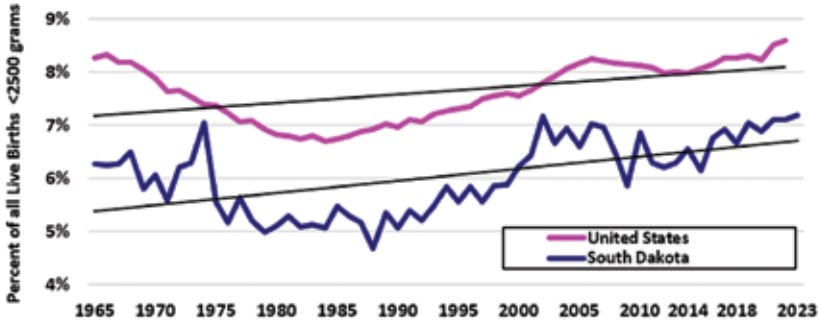


all births in South Dakota and the United States is declining – especially in South Dakota. At its peak in 2017, a quarter of all the state's births were AIBO compared to 21% of all births in 2023.[1,3] Accompanying this recent downward trend has been the decreasing respective contribution of American Indians to all of South Dakota's AIBO newborns. Currently, 58% of AIBO newborns are American Indian while this was true of 87% of AIBO state live births in 2020.

Weight at birth is related to mortality and morbidity during the first year of life. Data on this parameter are used to assess the outcomes of pregnancy. Figure 5 shows the parallel increasing trends in the percentages of low birth weight (LBW=less than 2,500 grams) for both South Dakota's and the nation's newborns. Also apparent in Figure 5 is how LBW is lower in the state (7.2%) compared to 9% of all live births in the national birth cohort.[1,3]

Figure 6 helps to clarify trends in LBW. Data in this figure show that the very low birth weight cohort (VLBW = < 1,500 grams), both for the country as a whole and for South Dakota, has often accounted for slightly more than one percent of all births. Alternately, the percent of all births that are mid low birth weight (MLBW=1,500-2,499 grams) is increasing and it is this group of newborns that is contributing to the increase in the LBW birth cohort. Specific to the state's perinatal

Figure 5. Low birth weight, United States and South Dakota, 1965-2023.



Teens thinking about suicide may not know how to ask for help.

KNOW THE SIGNS AND REACH OUT.

ASK THE QUESTION

As health care professionals, we're on the front lines of suicide prevention. Asking directly in a caring way can help provide hope, change the course of a life, and prevent indescribable pain. **Your role is crucial when you observe potential suicide indicators.**

SIGNS OF POTENTIAL SUICIDE

- Expressions of hopelessness or feeling trapped
- Talks about feeling empty or having no reason to live
- Increase in drug and alcohol use
- Loss of interest in things you used to enjoy

Avera Behavioral Health

More signs of potential suicide can be found at **Avera.org/AskTheQuestion.**

#AskTheQuestion

Remind patients of these other resources if they're having thoughts about suicide.

CALL OR TEXT

988 to speak with a mental health professional available 24/7

GO TO

the local Emergency Department **for immediate care**

Find Resources

BHCS-1093451

outcome are the 2023 data in Figure 6 showing the slight increase in VLBW but a decrease in its MLBW cohort. This increase in the 2023 VLBW cohort was observed among both the White and the AIBO populations of the state's newborns.[1]

A subset of the VLBW cohort that varies from year to year and impacts infant mortality are those newborns with weights less than 500 grams, few of whom are likely to survive. Figure 7 shows that in 2023, 8% (n=9) of all newborns in the state were among this weight cohort, a decrease from the previous year when there were 18 births in this cohort.[1]

Figure 8 provides a look at racial variation in the state's total births of VLBW and MLBW newborns. This figure shows that over time the AIBO newborns are more likely than Whites to be both VLBW and MLBW. This disparity has become more apparent in recent years especially in the MLBW cohort of newborns.[1]

Prenatal care is fundamental for optimal outcomes of pregnancy and its use is monitored to measure achievement of health goals for the nation. The federal "Healthy People 2030 Goal" for prenatal care beginning in the first trimester is 80.5% for pregnant women with the national status of achievement of this goal declared to be "getting worse."[5] Nationwide, in 2018, 76.4% of pregnant women received

Figure 6. Percent of all births, mid low birth weight (1,500-2,499 grams), very low birth weight (0-1,499 grams), South Dakota and United States, 1965-2023.

Figure 7. Percent of all VLBW births <500 g, South Dakota and United States, 2000-2023.

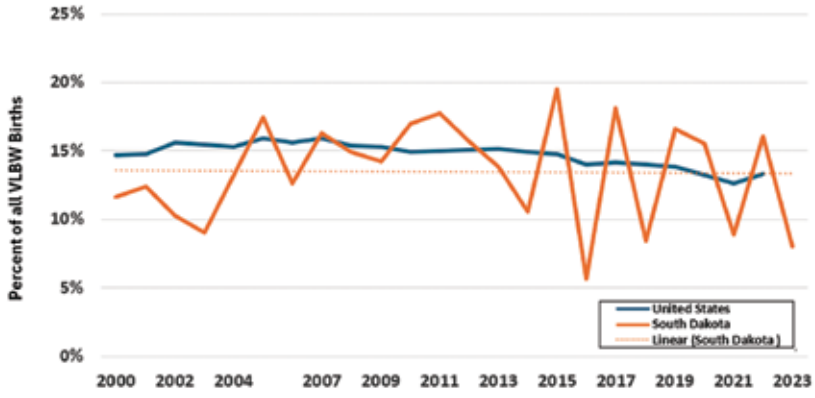
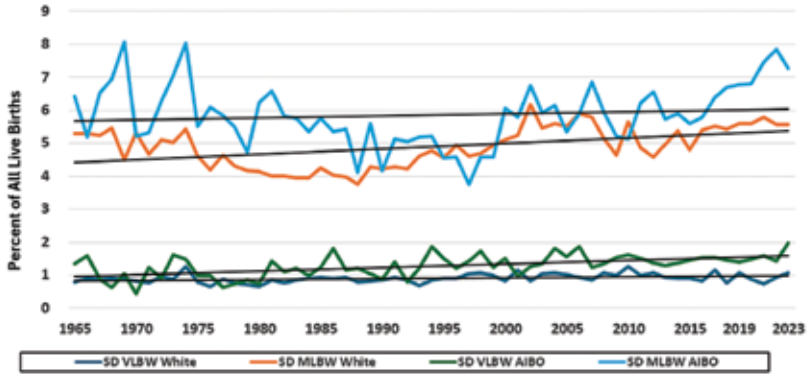


Figure 8. Very low birth weight (VLBW), mid low birth weight (MLBW), White and AIBO live births, South Dakota, 1965-2022.



care in the first trimester of pregnancy decreasing to 75.9% in 2022. Alternately, Figure 9 shows that 82% of South Dakota's White pregnant women have already achieved this national 2030 goal.[1] A different picture, however, emerges as data for the state's AIBO population are examined. Only 53% of these pregnant women are currently receiving prenatal care in the first trimester. Most concerning in Figure 9 is the finding that 8% of the state's AIBO population of pregnant women received no prenatal care in 2023. This percent has gradually increased from 2.7% in 2019.[1] Emphasizing the importance of this care are state data for the years 2018-2022 showing that the infant mortality rate (IMR) is over seven times higher for babies whose mothers received no prenatal care than for those who received care in the first trimester of pregnancy (36 vs 5 deaths before the 364th day of life per 1,000 live births).[6] This link between prenatal care and infant survival is powerful and further data on infant mortality will now be explored.

Infant Mortality

Deaths of babies during the first year of life are tragic losses for families and its rate is often used as an indicator of the health of communities and nations. Figure 10 shows that South Dakota and the nation have seen their IMRs decline by approximately 73% over the past six decades.

Currently, approximately 20,000 babies die annually in the United States. Seventy-one infants died in South Dakota in 2023, a decrease from 87 infant deaths in 2022. The state IMR in 2022 was 7.8, the second highest in the nation.[7] The state's 2023 IMR of 6.4 would improve South Dakota ranking to approximately 35th place on the 2022 scale.

The annual variation in the state's IMR is apparent in Figure 10 that shows the more jagged presentation of data for the state over time compared to the smooth decline in rates for the nation. Fluctuations in annual numbers of infant deaths and the state's low numbers of annual births, which serve as the denominator for calculating the IMR, generate these sharp increases and decreases in state's rate of death for infants as it is plotted over time. The trend line presented in Figure 10, however, provides clear evidence of the gradual decline in the rate of death for the state's infants.

Figure 10 shows, as typically occurs, the state's 2023 IMR (6.4) remains higher than the preliminary national rate of 5.5.[1,8] To further understand this observation, the infant mortality rate is broken down in Figure 11 to represent rates of neonatal deaths that occur before day 28 of life, neonatal mortality rate (NMR) and the post neonatal mortality rate (PNMR=deaths between 28 and 364 days of life). This figure shows that in 2023 the decrease in the IMR was accounted for by declines in both the NMR and the PNMR, yet both these rates remain higher than those noted with provisional 2023 national data.

To further understand the dynamics reflected in the neonatal and post neonatal mortality rates, Figure 12 breaks these data down to show most recent three-year comparisons of total rates for South Dakota and the United States and then compares them for the state's White and AIBO populations of infants.[1,7,8] Very apparent in these data are the striking racial differences noted between the state's NMR and PNMR. The NMR is 2.4 times higher for the state's AIBO (7.1) vs White (3.0) newborns and 3.7 times higher for its AIBO (6.7) vs White (1.8) infants over 27 days of age.

Figure 13 presents the five-year moving average state ratios of AIBO to White rates of death in both the neonatal and post neonatal periods of life and show how they have recently

Figure 9. Trimester prenatal care began, South Dakota, 2023.

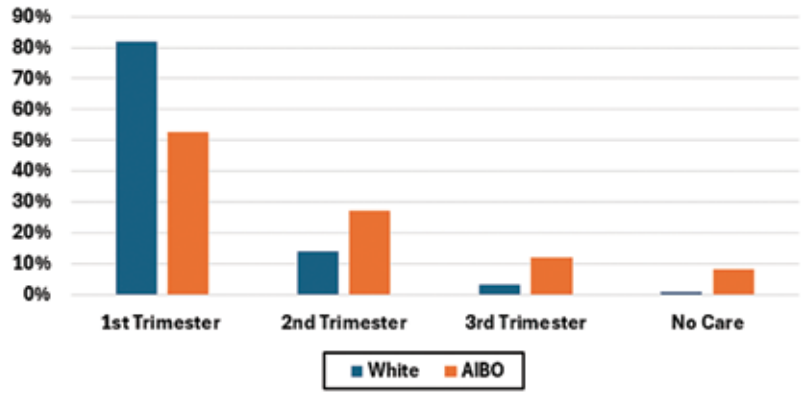


Figure 10. Infant mortality, South Dakota and United States, 1964-2023.

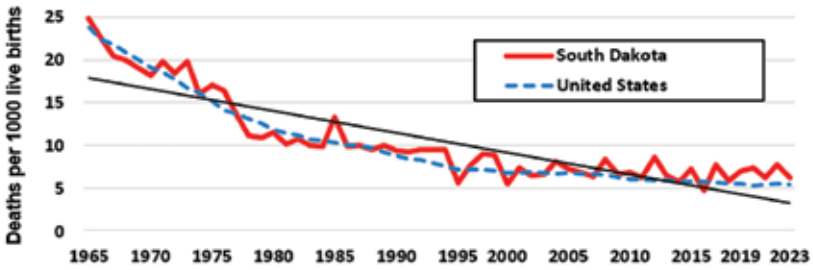


Figure 11. Neonatal and post neonatal mortality rates, total population, South Dakota and United States, 1965-2022.

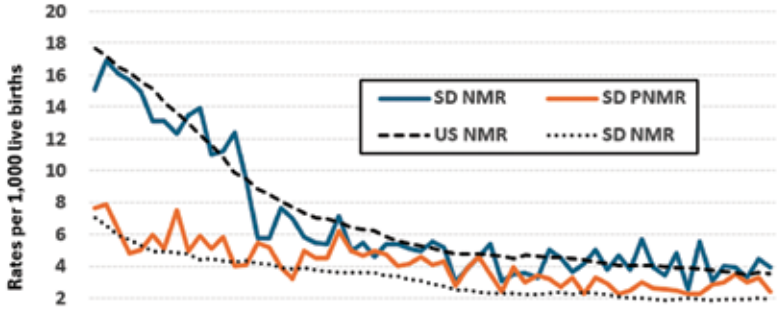
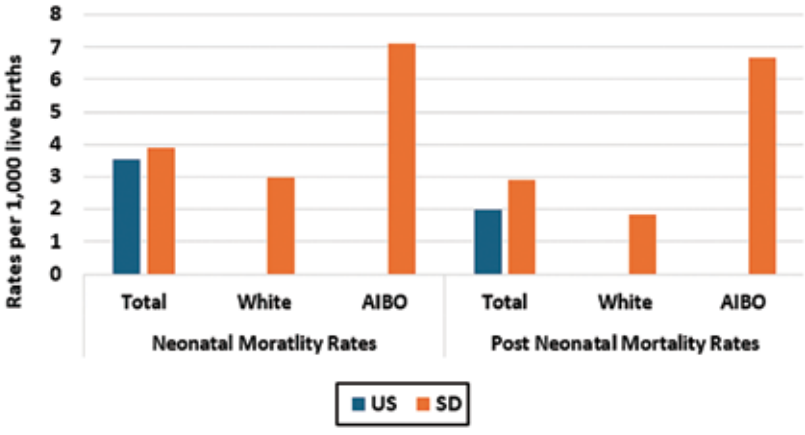


Figure 12. Neonatal and post neonatal mortality rates, South Dakota and United States, 2021-2023.



increased.[1] Though the ratio for the post neonatal period is higher (as also noted most recently in Figure 12), its trend line over time reveals progress. The trend line for the neonatal mortality ratio, though fairly stable in over the past 10 years, does show somewhat of an increase over time. Most apparent in this figure is how both of these ratios show an increase in the past few years that defies the goal of decreasing racial disparity in IMRs.

Data on the causes of infant deaths are helpful in understanding the racial disparities noted in Figures 12 and 13. These data are presented in Figure 14 and compare the most recent three year mean (2021-23) rates of causes of neonatal and post neonatal deaths for the state's White and AIBO populations.[1] Perinatal causes of death (related to maternal health, delivery and prematurity) lead those in the neonatal period and are considerably higher for AIBO than White newborns and compliment the data in Figure 8 showing that LBW is higher for this population of infants. In the neonatal period, rates of death due to congenital anomalies (CA) are also higher among AIBO than White newborns (2.3 vs 1 deaths per 1,000 live births) as are deaths due to "other" causes that include infections and malignancies.

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Figure 13. Five-year moving averages of ratios, AIBO to White NMR and PNMR, South Dakota.

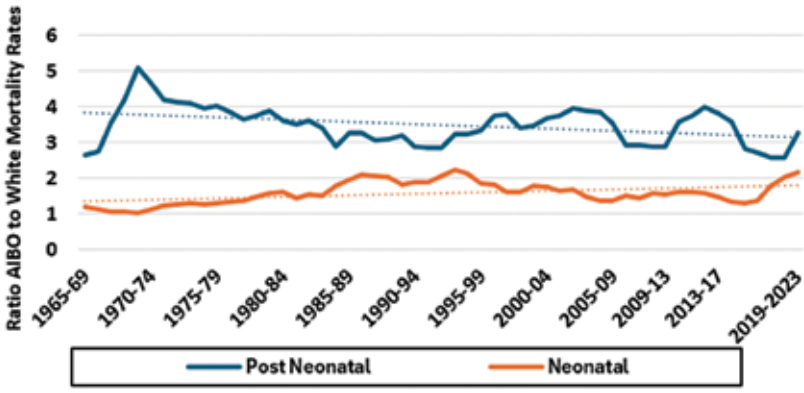
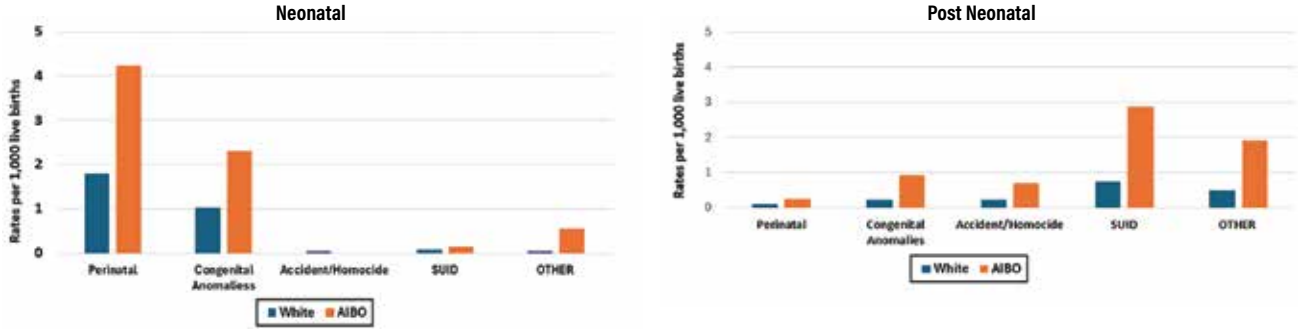


Figure 14. Mean rates of causes of neonatal and post neonatal mortality, White and AIBO infants, South Dakota, 2021-2023.

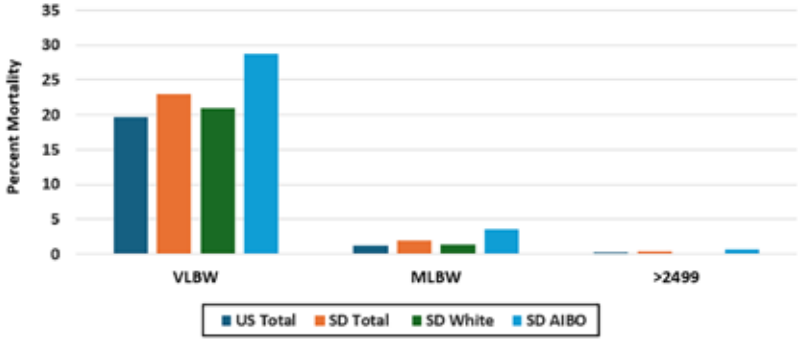


In the post neonatal period, the most apparent disparity between the mean 2021-23 White and AIBO mortality rates is seen for sudden unexpected infant death (SUID) that varies from 0.76 vs 2.9 deaths per 1,000 live births for White and AIBO infants. While these rates show disparity, SUID contributes to nearly identical proportions (42% vs 43%) of all post neonatal deaths for White and AIBO infants after the 27th day of life. Differences in rates of death due to congenital anomalies, accidents/homicide, and other causes are also noted to have higher rates for the AIBO than the White infants.

To further examine the disparity noted for deaths of newborns due to "perinatal" causes are the birth weight specific data presented in Figure 15. LBW is higher among South Dakota's AIBO than its White newborns and Figure 15 shows that death for their VLBW (29%) and MLBW (4%) infants is also more likely. This descrepancy likely contributes to the higher mortality observed for all VLBW infants in the state (23%) compared to its total for the nation (20%).[1,9] Similar, though less pronounced, are differences noted among MLBW infants.

While data revealing means for recent years provide a current view of perinatal outcomes, trends over time enable views of progress and are helpful in examining changes in the

Figure 15. Birth weight specific infant mortality, United States total, 2022 and South Dakota total White and AIBO, 2021-2023.



causes of infant death. Figure 16 provides data from 2010 to 2023 on rates of the three leading causes of death for the state's White and AIBO infants.[1,10] Trend lines in this figure show that progress has been achieved over these years by the White population in decreasing the rates of perinatal causes of death, and those for CAs and SUIDs. For AIBO infants, improvement is only noted for perinatal causes with trend lines showing increases in their rates of death for CAs and SUIDs.

The following tables expand the data so far presented using five-year means (2019-23) that enable statistical comparisons between rates for the state's White and AIBO populations and for the state's and the national rates of infant death.[1,9] Table 1 shows that aside from accidents/homicides (for which the numbers were too small for comparisons), all other causes of death are significantly higher for the state's AIBO than White infants ($p<0.05$). Comparisons of these same mean rates for all South Dakota infants with those for the United States in 2022 (most recent data available) show that the state's rates of causes of death due to CAs, SUID, and Other causes are significantly higher ($p<0.05$) than noted nationwide.

Figure 16. Rates of three leading causes of infant death for White and AIBO populations, South Dakota, 2010-2023.

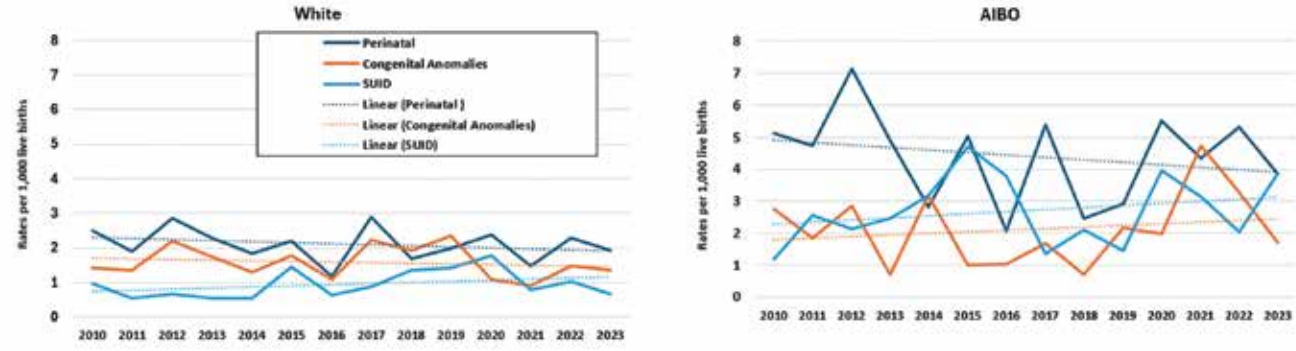


Table 1. Causes of death in South Dakota and United States.

	Rates per 1,000 live births*						
	South Dakota infant mortality rate				Total population		
	2023	2019-2023					
Causes of death	Total population	White	AIBO	p White vs AIBO	SD 2019-2023	US 2022	P SD vs US
Perinatal causes	2.3	2.0	4.4	<0.01	2.6	2.7	NS (.4)
Congenital anomalies	1.4	1.4	2.8	<0.01	1.8	1.1	<0.01
Sudden unexpected infant death	1.3	1.1	2.9	<0.01	1.5	1.0	<0.01
Accidents and homicides	0.5	0.2	0.8	*	0.3	0.2	<0.05
Other*	0.8	0.4	2.0	<0.05	0.8	0.6	<0.05

All South Dakota data are from South Dakota Department of Health[1] U.S. data from CDC.[10]
* n too small for calculation
** Other – Medical conditions such as infections, malignancies etc.
P values <0.05 are considered significant

Finally, to summarize, all infant mortality data presented, Table 2 using the same five-year mean (2019-2023) data show that total rates of death during both the neonatal and post neonatal periods are statistically higher ($p<0.01$) for the state's AIBO than White infants. The state's NMR is not statistically significantly different compared to that of the nation but its PNMR and the total IMR are significantly higher ($p<0.01$) revealing the greater risk of death for infants in South Dakota than is experienced nationwide.[1,10]

Discussion

A story emerges as annual data on South Dakota's births and infant deaths are explored, plotted on graphs, and then analyzed. Each year this story is updated as new observations are made that contribute to an understanding of trends that hopefully may assist efforts to prevent future losses of life in the first vulnerable year of life. The state's relatively small population and cohort of less than 12,000 annual births demands caution when data from any one year are examined. Nonetheless, analyses describe the unique annual observations while trends overtime highlight ongoing needs for focused attention to prevent death during infancy, which will never again be as likely until close to the age of retirement.

South Dakota's perinatal outcome data received recent media attention when its 2022 fertility rate was touted as the highest in the nation. Accompanying this observation are data from this year also showing that the state had the second highest IMR in the country. Such markers startle attention but often are not sustained with yearly shifts in rates that swing with slight changes in the raw numbers upon which they are determined.

In 2023, the state experienced a 23 baby decrease in live births and an accompanying decrease of 16 fewer infant deaths than observed the previous year that yielded an IMR rate of 6.4 compared to its previous annual rate of 7.8. Both these rates exceeded the provisional US 2023 rate of 5.5. Among the variables impacting this decline in the state's IMR was the 50% (n=9) decline in births between these two years of <500 grams newborns, for whom there is only an approximate 10-15% rate of survival. Overall, there would have needed to be 10 fewer infant deaths in 2023 for the state to have matched the IMR of the nation.

Among the consistent trends noted over time in the state's data on infant mortality is the disparity between how NMRs in South Dakota (though jagged in their plots on graphs) remain fairly consistent and statistically similar to the country as a whole. This similarity in survival, however, is not observed for infant deaths following the 27th day of life. PNMRs for the state have consistently been higher than national rates with the AIBO population contributing disproportionately to these higher than national rates. Specifically, AIBO newborns comprise 21% of the state's live newborns but 34% of the state's neonatal deaths and 55% of the post neonatal deaths.

While in the past American Indians have predominately

Table 2. Infant mortality: South Dakota and United States.

	Rates per 1,000 live births						
	South Dakota infant mortality rate				Total population		
	2023	2019-2023					
	Total population	White	AIBO	P White vs AIBO	SD 2019-2023	US 2022	P SD vs US
Total neonatal mortality rate (NMR)	3.9	3.2	6.6	<0.01	3.9	3.6	NS (0.43)
Total post neonatal mortality rate (PNMR)	2.4	2.1	6.2	<0.01	3.0	2.0	<0.01
Infant mortality rate (IMR)	6.4	5.2	12.8	<0.01	7.0	5.6	<0.01

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comprised the AIBO population, its contribution to this cohort of newborns is declining while Black, Multi-Racial and other groups are increasing in their representation in it. This observation reflects the need for enhanced cultural competence in how prevention strategies are designed with recognition of the need to address multiple cultural practices and perceptions as education on perinatal health is provided. For example, the data showing that 8% of AIBO pregnant women receive no prenatal care prior to delivery, and that this percent is increasing, begs the question – why? Are barriers to care geographic, financial or are there other factors affecting reception of services by the various racial groups who comprise the AIBO population?

Consistently, South Dakota has had a lower than national percent of LBW newborns. The state's rate of death due to perinatal causes has not been significantly different from what is observed nationwide and this is true of its total NMR as well. Yet, the NMR due to perinatal causes is currently 2.4 times higher for the AIBO population than for Whites raising questions about prenatal experiences of women and the outcomes of their pregnancies. Further, birth weight specific mortality for LBW newborns is higher for AIBO than White infants. What factors may be more likely associated with complications of pregnancy, premature delivery or LBW for the AIBO than the White mothers and their infants? Are there educational or behavioral supports that may mitigate the likelihood of death for these infants? In recent years, attention has been given to the importance of physician-patient racial concordance and data suggest that this impacts the survival of newborns.[11]

Also consistent over time has been South Dakota's significantly higher ($p<0.01$) than national rates of infant death due to CAs. The recent data also show that the rate of these deaths is higher among AIBO than White newborns and infants. It has been suggested that parents in the state are less likely than elsewhere to choose, or be able, to terminate a pregnancy when fatal fetal defects are prenatally identified. Difficulties in accessing desired care could also limit its availability.

Deaths due to SUID have long been a focus of local prevention efforts, yet South Dakota's rate of SUIDs remains significantly higher ($p<0.01$) than noted nationally. Though the AIBO rate of SUID in the state is also significantly ($p<0.1$) higher than that of White infants, it is increasing for both groups of infants. Education on "safe sleep," specifically the need to put babies to sleep on their backs and alone in a crib with no soft materials, has been presented in multiple media campaigns and direct education in various health settings. In spite of these efforts, questions about the state's rates of SUIDs must be asked. Are prevention efforts reaching all new parents? Or are they inconsistent with some cultural child rearing practices, too difficult for compliance by exhausted parents, or contrary to the realities of households? Certainly, these same realities exist nationwide, why then are South Dakota's SUID rates persistently higher than national rates and what can we do to reverse the trend?

Not to be overlooked as causes of infant death are examined are those that are clustered into the category of "Other" that accounts for 13% of all infant deaths. Some of these deaths are due to infections raising questions about their identification, prompt treatment and circumstances that contribute to a rate that is significantly higher for AIBO than White infants. Another 7% of infant deaths are due to accidents or homicide. Again, what community supports are missing when such tragic maltreatment or hazards in care occur?

A nation's or community's IMR has long been used as a marker of its health and well being. South Dakota is facing a range of issues that stress young families. Having the highest percent (85%) of employment in the nation for women ages 25 to 54 requires supports for rearing infants and young children.[12] The state, however, is facing a childcare crisis that is currently being studied by a task force created by the state legislature. The data presented in this report do not separately examine deaths in childcare settings but the current crisis that impacts the availability and affordability of these services speaks to the kind of pressures families face as they care for infants in the first year of life.

Declining annual births create real challenges for the future. A little over half of the babies born in the state are from 62 counties that are likely some distance or very far from the east and west river regional centers of tertiary perinatal care and many normal deliveries occur some distance from a family's residence. Outreach services, use of technology, transport and other modes of care require continued development and expansion to assure the reach of obstetric and neonatal care to every pregnant woman and her baby regardless of the place of their residence.

The racial disparities for infants identified by this report reveal a consistent theme as birth weight, use of prenatal care, rates of infant death and mortality rates by cause and birth weight have been explored. The complexity of addressing these issues is recognized as cultural sensitivity

to individuals and ethnic groups is essential for care to be effective. Nonetheless, data identify needs that must be addressed to assure the safest beginning of life for all of South Dakota's babies.

Key Points

1. The total number of live births in South Dakota in 2023 (11,170) was 23 fewer than in the previous year and 10% less than in 2015. The state's birth rate (births per 1,000 population) of 12 was the lowest ever recorded in state history, though it remains higher than that of the nation.
2. In 2023, 71% of all births were White/non Hispanic with the next largest cohort (12%) American Indian. The percent of American Indian, Black and newborns of other races (AIBO) has been decreasing in recent years and now comprises about 21% of all births. American Indians are decreasing in their representation among AIBO live births.
3. The percent of the state's low birth weight newborns is increasing, primarily among those weighing between 1,500 and 2,499 grams, but it remains lower (7.2%) than the percent of LBW observed nationally (9%).
4. Both very low birth weight (0-499 grams) and mid low birth weight (500-2,499 grams) is more likely among AIBO than White newborns in the state.
5. White pregnant women have achieved the federal Healthy People 2030 goal of 80% entry into prenatal care during their first trimester but only 53% of AIBO women received this care. Eight percent of AIBO women received no prenatal care, an increase from 3% in 2019.
6. The infant mortality rate (IMR) decreased from 7.8 in 2022 to 6.4 in 2023, yet both these state rates are higher than the United States preliminary rate of 5.5 infant deaths per 1,000 live births.
7. The state's three year mean neonatal mortality rate (0 to 27 days of life) is 2.4 times higher for its AIBO than White infants and its post neonatal mortality rate is 3.7 times higher for it AIBO than White infants. Five-year data (2019-2023) show that these differences are statistically significant ($p<0.01$).
8. Mean data for 2019-2023, show that causes of Infant death (perinatal, congenital anomalies, sudden unexpected infant death, and other) are significantly higher ($p<0.05$) for the state's AIBO than White infants. With the exception of perinatal causes, they also are higher ($p<0.05$) for all of the state's infants compared to those of the United States..

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Acknowledgement – The authors gratefully acknowledge the editorial assistance of Pat Herman, MURP, Center for Disabilities, University of South Dakota Sanford School of Medicine.

Is a Switch to Nurse Administered Nitrous Oxide Sedation Feasible and Effective? A Quality Improvement Project

Alexandra Kracht, MS IV; Matthew Billion, MS IV; Kevin Feldhaus, MS IV; and Mir Ali, MD

Abstract

Background: Nitrous oxide (N_2O) is used for minimal and moderate sedation procedures. It has an advantage against other sedative drugs due to its quick onset of action and resolution of effects making it effective for various pediatric procedures. Currently, pediatric intensivists at Sanford Children's Hospital administer N_2O.

Methods: A survey was completed by nurses on the Pediatric Outpatient Sedation Unit after they administered N_2O that determined the nursing comfort level with administering N_2O while transitioning from physician administration to nursing at Sanford Children's Hospital. This questionnaire aimed to identify the perspectives of the nursing team while progressing through the switch.

Results: A total of 46 surveys were collected from May 2023 to May 2024. Nursing ratings of their comfort with administering N_2O increased over the data collection period (P-value: <0.001, 95% (CI): 0.018–0.04). Their knowledge of the mechanism of action of N_2O (P-value: <0.001, 95% CI: 0.02–0.041) and adverse effects (P-value: 0.016, 95% CI:0.003–0.028) of N_2O increased. The patients' comfort during their sedation did not significantly change (P-value: 0.207, 95% CI:-0.009–0.042).

Conclusion: Over the course of one year, the survey showed improvements in nursing comfort levels with administering N_2O, while maintaining patient satisfaction. As time went on, the nurses' knowledge of the mechanism of action and adverse effects increased significantly. Concerns for patient safety showed a significant decrease. These correlated trends suggest applicability for a nurse-administered N_2O program at Sanford Children's Hospital.

Introduction

Sedation has become essential in a number of medical procedures. In pediatric procedures, sedation helps to decrease patient discomfort and any associated mental trauma. The inhaled anesthetic nitrous oxide mixed with oxygen (N_2O), commonly known as laughing gas, is used for minimal and moderate sedation procedures. According to the American Academy of Pediatrics, the goals of sedation are patient safety, analgesia, amnesia, anxiolysis, and return to a functional state.[1] N_2O is a tasteless, odorless gas that causes analgesia and amnesia. It has an advantage against other sedative drugs due to its quick onset of action and resolution of effects making it effective for various procedures.[2] Currently at Sanford Children's Hospital, the pediatric critical care physicians are the only providers who administer N_2O as minimal sedation for pediatric purposes. Because of patient load and schedule constraints, physicians aren't as readily available to administer N_2O. Sanford Children's Hospital is looking to pursue nurse administered N_2O outpatient procedures in the near future to improve procedural efficiency and increase patient satisfaction with a more streamlined process. The implementation of nurse administered N_2O is seen in healthcare as having low adverse effects and high patient satisfaction.[3] This quality improvement project surveyed perspectives of the nursing staff monthly. The survey compiled variables such as comfort level, procedural satisfaction, and efficacy of the switch from physician to nurse administered nitrous sedation. With results from this study, the procedural protocol may show improvements in nursing comfort levels with administering N_2O while maintaining patient satisfaction.

Methods

This research was approved by the Sanford Health IRB in Sioux Falls, South Dakota. The survey was accepted as non-human research according to the Protocol Template for Human Research Determination (HRP-503c) as the study did not meet the FDA definition of clinical investigation or for a human subject. Funding for this research was provided

by the NIH-T35 funded Child Health Innovative Research Program (CHIRP).

Implementation of a questionnaire that determined the nursing comfort level with administering N_2O while transitioning from physician administration to nursing at Sanford Children's Hospital. This questionnaire aimed to identify the perspectives of the nursing team while progressing through the switch. The staff at Sanford's Children Hospital filled out surveys after every N_2O sedation with no patient personal information collected. The survey had questions for the administering nurse with a rating system of 1 to 5 (5 being the highest). Questions were related to their knowledge of the mechanism of action and adverse effects of N_2O, level of concern from the parent, how comfortable the patient was with the procedure, if the patient had any negative side effects such as respiratory distress, hypoxia, vomiting, mask intolerance, agitation, nausea, dizziness, or any comment, and the level of physician supervision. Additionally, the staff was asked if they required more training, and how they would prefer to receive it (online, in person, a mix of online and in person). Finally, staff opinions were gathered asking if a nursing-led administration of N_2O could increase safety concerns of the patient.

This survey was filled out by nurses after administration of N_2O for a 12 month period starting in May 2023 and ending in May 2024. No patient personal information was collected. The data was collected and saved under the protected software Research Electronic Data Capture (REDCap). Data from the survey was analyzed using Microsoft Excel (Version 16.77.1; 2023). The data from the surveys was measured separately for their defining aspects. The responses to each question of the survey were plotted separately in the order that they were received, and analyzed with a line of best fit to show change over time.

Results

Overall, the data shows that as time went on, the nurses became more comfortable with administering N_2O (P-value: <0.001, 95% confidence interval (CI): 0.018–0.04) (Figure 1). Their knowledge of the mechanism of action of N2O (P-value: <0.001, 95% CI: 0.02– 0.041) and adverse effects (P-value: 0.016 95% CI:0.003–0.028) of N_2O increased (Figure 2,3). Additionally, the level of concern the nurses had for patient safety decreased (P-value: 0.245, 95% CI:-0.028–0.0007), as well as the level of concern the nurses perceived from the patients' parents (P-value: 0.001, 95% CI:-0.054– -0.014) (Figure 4). The level of supervision by the physician decreased over the data collection period (P-value: <0.001, 95% CI: -0.083– -0.03) (Figure 5). The patients'

Figure 1. Trend of nursing confidence during N20 administration (ranked 1-5 with 5 being the highest level of confidence).

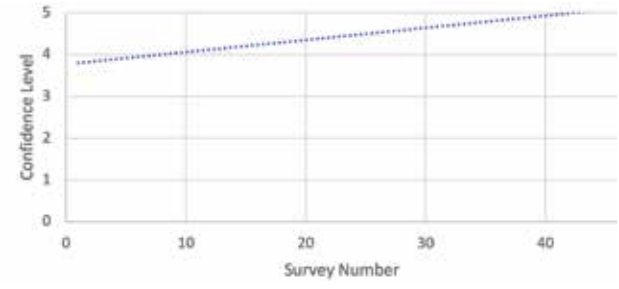

Figure 2. Trend of nursing knowledge of the mechanism of action of N20 (ranked 1-5 with 5 being the highest level of knowledge).

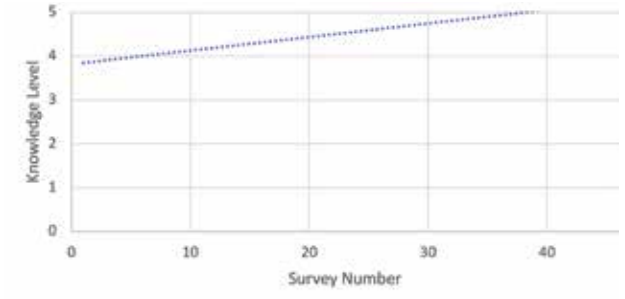

Figure 3. Trend of nursing knowledge of the adverse effects of N20 (ranked 1-5 with 5 being the highest level of knowledge).

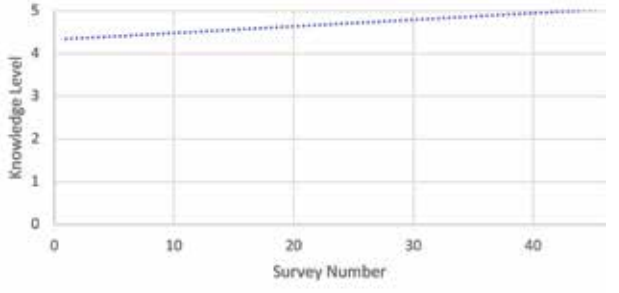

Figure 4. Trend of nursing concern for patient safety during nursing-led N20 administration (ranked 1-5 with 5 being the highest level of concern).

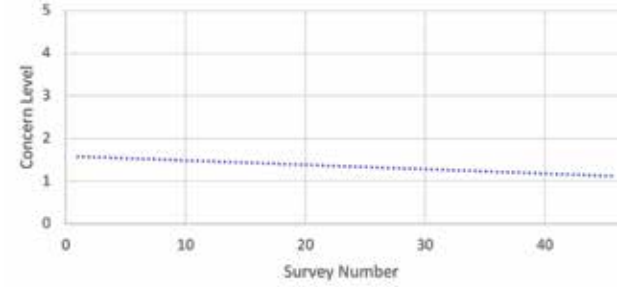

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Figure 5. Trend of physician supervision of nurses during N2O administration (ranked 1-5 with 5 being the highest level of supervision).

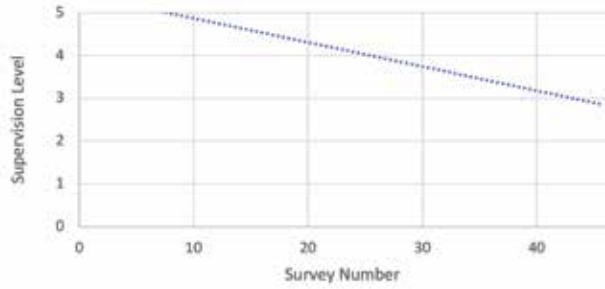
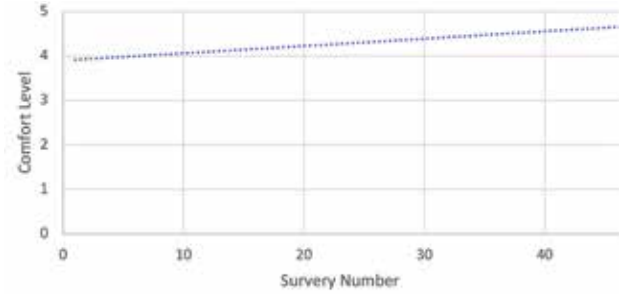


Figure 6. Trend of nursing rating of patient comfort during nursing-led N2O administration (ranked 1-5 with 5 being the highest level of comfort).



comfort during their sedation did not significantly change with a (P-value: 0.207, 95% CI:-0.009–0.042) (Figure 6). The requests for additional training by the nurses decreased from 15 in the first half of data collection, to 6 in the second half. After the first three months of data collection, all of the nurses filling out the survey had experience with N_2O administration. Out of the 46 surveys, 43 reported no adverse effects (93.48%), there were two reports of agitation and one report of mask intolerance.

Discussion

The study is an attempt at quality improvement for healthcare administration by use of nitrous oxide. N_2O sedation is often used throughout healthcare settings like dentistry and the emergency department. However, most settings require a physician's presence during the procedure. With a combination of improved efficiency and employee confidence, a switch from a physician-administered nitrous sedation to a nurse-administered one may prove greatly beneficial.

Over 12 months, aspects of a nursing-led N_2O administration program were measured through self-evaluations of the Pediatric Outpatient Sedation nursing team at Sanford Health in Sioux Falls. Specific targets included: previous handling of nitrous equipment, the self-confidence of the nurses in administering nitrous sedation, and comfortable sedation of the patient. Among the 46 surveys in 12 months, we found positive trends in nursing confidence levels, nursing knowledge of N_2O mechanism of action, and adverse effects. We found a decreasing trend for nursing and parental concern in patient safety during nitrous procedures. Over the data collection period, the aforementioned targets were associated with decreased physician supervision levels. These correlated trends suggest applicability for a nurse-administered N_2O program and support our goal of the study.

The findings of this physician-supervised nurse-administered project of N_2O present promising implications for patient care and clinical practice. Through our investigation, we have highlighted the potential use of a nursing-administered N_2O program that ensures safe and effective delivery while maximizing therapeutic outcomes. Furthermore, our study underscores the importance of nursing leadership in advancing evidence-based medicine, as the nursing role is pivotal in the implementation and monitoring of N_2O.

The first limitation of the study is the small sample size of nurses at Sanford Health. The project was focused on the Pediatric Outpatient Sedation Unit, with a limited patient population. The second limitation of the study was the nature of data collection through self-surveys. These were collected through paper documents and asked to be filled upon completion of a N_2O procedure. There was no time frame for completion beyond post-procedure.

Further recommendations pertain to the implementation of nurse-administered N_2O protocol for pediatric procedures. The study represents the opinions of nursing staff and their level of comfort and confidence with N_2O administration as it grew over time with physicians supervising the procedure. This transition would possibly improve workflow while maintaining the current standard of care for pediatric sedation.

Funding for this research was provided by the NIH-T35 funded Child Health Innovative Research Program (CHIRP).

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Please note: Due to limited space, we are unable to list all references. You may contact South Dakota Medicine at ereiss@sdsma.org for a complete listing.

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A Rare Case of Clinically Isolated Aortitis in a 51-Year-Old Male with Infrarenal Aorta Involvement

Muhammad Hasan, MD; and J. Austin Simonson, MD

Abstract

Aortitis can be broadly classified into infectious and non-infectious. Infectious causes include tuberculosis, salmonella and syphilis where as noninfectious causes include rheumatological diseases such as giant cell arteritis, Takayasu arteritis and antineutrophil cytoplasmic antibodies (ANCA) vasculitides. Clinically isolated aortitis refers to inflammation of the aorta without infectious or systemic causes. Most cases of aortitis involve the aortic root, thoracic aorta and ascending aorta. We present a rare case of clinically isolated aortitis in a 51-year-old male with infrarenal aortic involvement.

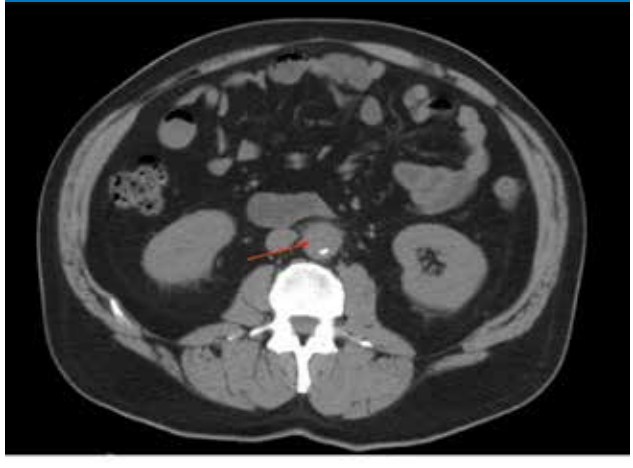
Introduction

Aortitis refers to a large group of diseases characterized by inflammation of the aorta. It can be divided into infectious and non-infectious. Systemic diseases leading to non infectious aortitis include giant cell arteritis (GCA), Takayasu arteritis, rheumatoid arthritis, systemic lupus erythematosus (SLE), Behçet disease, ankylosing spondylitis, and IgG4-related diseases. Infectious causes can be secondary to syphilis, histoplasmosis, tuberculosis (TB), human immunodeficiency viruses (HIV), brucella and bartonella. Clinically isolated aortitis (CIA) is a rare inflammatory disorder characterized by localized inflammation of the aortic wall in the absence of systemic features of large-vessel vasculitis. According to the updated Chapel Hill vasculitis nomenclature, CIA would be classified as a form of single-organ vasculitis, indicating that the inflammation is primarily confined to the aorta without systemic involvement. A large analysis done in 2017 combined multiple case series and case reports and showed that the predominant location of CIA was ascending aorta (69%) and arch/descending aorta (17%) with mean age at 65 years.[1]

Case Presentation

In this case report, we present a 51-year-old gentleman with a medical history significant for coronary artery disease, hypertension, and hyperlipidemia, who presented to the ER with abdominal and flank pain accompanied by bilateral lower back discomfort radiating to the groin, along with a low-grade fever of 99°F. He denied nausea, vomiting, chest pain, or shortness of breath, and his review of symptoms was otherwise unremarkable including headache, vision symptoms, neck pain, edema and neuropathy. He has prior history of tobacco use but stopped smoking 10 years ago. He drinks alcohol approximately three times per week. Initial suspicion of kidney stones was ruled out by CT abdomen pelvis (Figure 1), which instead revealed focal circumferential wall thickening of the infrarenal abdominal aorta with adjacent inflammatory changes. The aorta at this level measured 2.5 x 2.8 cm suggesting nonspecific aortitis. Subsequent imaging with CTA abdomen pelvis (Figure 2) and PET/CT (Figure 3) supported the diagnosis of clinically suspected localized aortitis by showing mural thickening of the infrarenal abdominal aorta. His lab results were negative for antinuclear antibodies (ANA), antineutrophil cytoplasmic antibodies (ANCA) and cyclic citrullinated

Figure 1. CT abdomen pelvis shows focal circumferential wall thickening (red arrow) of the infrarenal abdominal aorta with adjacent inflammatory changes.



peptide (CCP). Tests for various pathogens including syphilis, histoplasmosis, TB, HIV, brucella and bartonella were all negative. His ESR was slightly increased at 21 (normal 0-19). Transesophageal echocardiogram performed to look for any valvular vegetations was negative. Patient was suspected to have clinically isolated aortitis and was initiated on high-dose methylprednisolone followed by a prednisone taper and methotrexate, with Bactrim for pneumocystis pneumonia (PCP) prophylaxis. At discharge, he was asymptomatic, and follow-up CT demonstrated a decrease in aortic wall thickening from 1 cm to 0.6 cm, suggesting an appropriate response to treatment. Another CT abdomen is due six months after discharge.

Figure 2. CTA abdomen pelvis shows significant mural thickening (red arrow) of the infrarenal abdominal aorta.

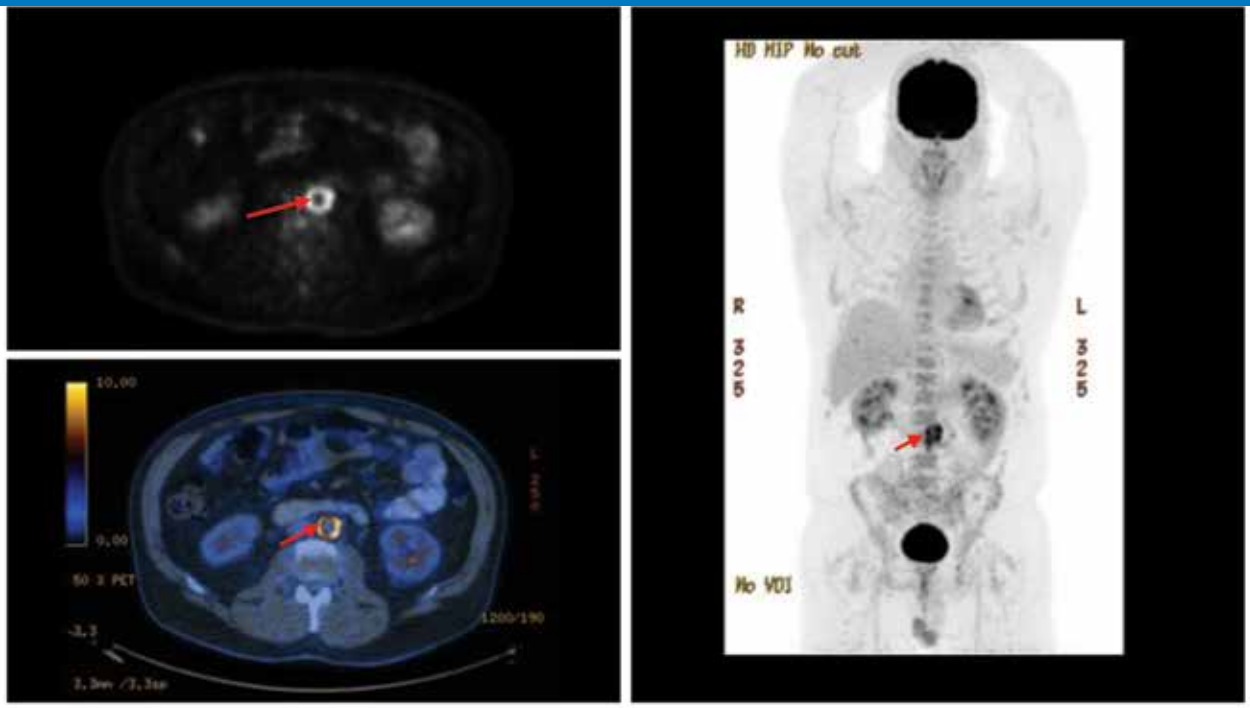
Discussion

Aortitis, broadly categorized into infectious and non-infectious etiologies, poses significant clinical implications due to its potential for serious complications, including aortic aneurysm, dissection, and rupture. While infectious causes such as tuberculosis, salmonella, and syphilis are well-recognized, non-infectious causes encompass a range of rheumatological diseases, including giant cell arteritis (GCA), Takayasu arteritis, and ANCA-associated vasculitides. The rarity of CIA warrants a prompt evaluation of infectious and non-infectious causes, to prevent potential complications.

In a comprehensive analysis of CIA cases involving multiple case series and case reports, the predominant locations of CIA were identified, with 69% affecting the ascending aorta and 17% involving the arch/descending aorta. The mean age of individuals with CIA was reported at 65 years, and the distribution between genders was notable, with 69% of cases occurring in females.[1] In the case mentioned above, we had a 51-year-old male with infrarenal aortic involvement.

The management of CIA poses several challenges, including the absence of standardized treatment guidelines and the potential for disease progression and complications. The

Figure 3. PET CT reveals intense uptake surrounding the periaortic soft tissue thickening (red arrows), consistent with the clinically suspected isolated aortitis.



primary treatment approach for large vessel vasculitis typically involves glucocorticoids and targeted biologic agents such as IL-6 inhibitors. However, the role of glucocorticoids in CIA remains uncertain. Additional medications that have been used to treat CIA are methotrexate, cyclophosphamide, tozilizumab and anakinra.[2] In this case, the patient was initiated on high-dose methylprednisolone followed by a prednisone taper and adjunctive therapy with methotrexate, aiming to suppress inflammation and prevent disease recurrence.

In conclusion, this case report highlights the importance of employing standardized diagnostic and treatment approaches for CIA presenting with infrarenal involvement. By integrating thorough clinical assessments, multimodal imaging techniques, and laboratory investigations, clinicians can effectively identify and address the complexities associated with CIA, thereby preventing potential complications and improving patient outcomes.

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Updates in Advance Care Planning in South Dakota

Amanda Kay Sedlacek DO, FACOI, MSA; Michele Snyders, MSW, CSW-PIP, APHSW-C;
Sarah Mollman, PhD, RN, CHPN, CNE; and Michelle Gierach, EdD, RN, CNE

Abstract

Advance care planning (ACP) is important to be outlined for patients, their family and healthcare team. Defining the difference between advance care planning vs goals of care planning and the appropriate documentation in records is essential and can at times be confusing. South Dakota has several advance care planning documents including SD Medical Order for Scope of Treatment and SD Comfort One that can be utilized along with their medical living will to help define patient's wishes. In this article, we will describe the resources for South Dakota ACP, documentation challenges, and provide examples of forms.

Over the past five decades, there have been policies and initiatives developed to ensure healthcare professionals are having conversations about and ensuring documentation of their patients' healthcare goals.[1] Most often the objective of having these conversations is enhancing patient autonomy, their quality of life, and relationship with their provider as well as planning for end-of-life and diminishing overtreatment.[2] However, a recent study reported that only 67% of conversations addressed all components of a goals of care conversation with frequent incomplete documentation of the patient's goals and values (38%). Documentation regarding the patient's understanding of their illness was missing (33%), not discussed (33%), or incorrect (5%) in most records reviewed.[3] Furthermore, it has been found that goals of care were less likely to be addressed and/or have documentation in rural hospitals.[4]

The Advanced Care Transformation Index for South Dakota report card notes 2.0% of South Dakota Medicare fee-for-service patients had a documented and billed advance care planning (ACP) session in 2023 as compared to the national average of 4.6%.[5] Healthcare professionals report a variety of barriers to having discussions with patients and families around advanced care planning and goals of care. One of the most common barriers identified is inadequate knowledge and skills.[6] Therefore, the purpose of this article is to define advance care planning and goals of care conversations and introduce legal documents that may be completed as products of these conversations. Having these legal documents and knowing where to find them can help ensure that South Dakota healthcare teams provide goal concordant care to their patients.

Advance Care Planning

ACP entails the healthcare professional discussing a patient's values and beliefs, uncovering what is most important so that the healthcare received aligns with the desires of the patient.[7] ACP can take place at any age and under any health circumstance. For example, a healthy 18-year-old may want to have this conversation with their doctor and family as they prepare for college. They can also create a medical power of attorney which appoints someone to speak on their behalf should they be in a serious accident or have a serious illness that leaves them unable to share their wishes. A Medicare Annual Wellness visit is another opportunity to conduct ACP allowing for review of current health status and corresponding documents. This allows open communication between providers and patients surrounding their healthcare wishes while the patient is not acutely hospitalized. The time spent reviewing and completing corresponding paperwork is billable as "99497" as long as 16-45 minutes was spent.[8,9] While ACP discussions center on planning for healthcare decisions that may occur in the future, goals of care conversations concentrate on current healthcare decisions.[7]

Goals of Care Conversations

Goals of care is a commonly used phrase that has been difficult to define[10] but is an important part of ACP. As a person ages or is diagnosed with a serious illness, conversations turn from general ACP to specific goals of care conversations that reflect the personal situation of the patient, their values, hopes, and fears as they live with a serious illness.

Goals of care has been defined as "the overarching aims of medical care for a patient that are informed by patient's underlying values and priorities, established within the

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clinical context, and used to guide decisions about the use or limitation on specific medical interventions."[11] However, some healthcare providers and patients may use it as a bridge to end-of-life and hospice conversations.[11,12] This contributes to the misconception that healthcare providers and patients have about goals of care conversations.

Goals of care conversations take place between a trusted healthcare provider, a patient and often family members which may also include their medical power of attorney. The discussion focuses on what kind of medical care the patient values given their current and likely future healthcare status. They can include discussions on prognosis, code status, and other medical interventions including intravenous fluids, intravenous antibiotics, artificial nutrition and hydration, blood products, and hospitalizations including intensive care unit stays and surgeries. Based upon the patient's past medical history, it may be beneficial to know if they would want dialysis, left ventricular assist device (LVAD), pacemaker, defibrillation, non-invasive ventilatory support such as bilevel positive airway pressure (BIPAP), chemotherapy, or radiation.

Code Status. When a medical emergency occurs such as cardiopulmonary arrest the medical team will look for code status documentation. When discussing code status, traditionally the terms full code (all aggressive measures including CPR, defibrillation, vasopressors, and intubation)[13] and no code (none of the above) have been used; however, more patients are requesting some interventions, but not all. We have other options which include:

- DNR/DNI (do not resuscitate/do not intubate) okay with medical treatment
- DNR/DNI- comfort care (focusing on symptomatic relief and may be under hospice care)

Documentation

The most common documentation of ACP conversations is advance directives, which are generally scanned into an electronic medical record (EMR) under a tab different from where their code status is located. What is more difficult to find, however, is documented goals of care conversations. These conversations are often free text within a provider's note making them difficult to find.[14]

Unfortunately, recent studies have shown that despite documented goals of care conversations, care received by the patient has not correlated with their wishes and their families were not aware of the patient's wishes.[3,13] One way to address this discrepancy is completing a form that provides structure to address the necessary elements of ACP and goals of care conversations. Currently, there are local resources that best address these conversations, the South Dakota Medical Order for Scope of Treatment (SD MOST) and South Dakota medical order known as Comfort One.

South Dakota Medical Order for Scope of Treatment (SD MOST). SD MOST can be used as part of a goals of care conversation with those patients who have a terminal illness. LifeCircle South Dakota helped create legislation for the passage of the SD MOST in 2019. The MOST form is a transportable medical order like a Physician's Order for Life Sustaining Treatment (POLST), but it reflects the laws of South Dakota. Even though it is specific to South Dakota law, the medical orders in this document are recognized in any other state with a similar document, making the orders transportable across not only healthcare settings, but also state lines. The original form or a copy that has been signed by both a healthcare provider and the patient or legal surrogate must be made available for a treating provider to follow a patient's wishes. Information on the SD MOST and the form itself in both English and Spanish can be found on the South Dakota Association of Healthcare Organizations' website at https://sdaho.org/most/.

Comfort One. The South Dakota medical order called Comfort One can be completed by anyone who indicates they do not want cardiopulmonary resuscitation. This form provides the medical orders needed by South Dakota emergency medical services (EMS) to withhold chest compressions, defibrillation, advanced airway procedures, assisted breath and resuscitation medications when responding to a call. Because this form is specific to South Dakota, it is not honored elsewhere. When a Comfort One form has been completed it is to be returned to the South Dakota Department of Health – Office of Rural Health/ EMS where it is recorded in their database and the local EMS is updated with the patient's healthcare wishes. The original white form that has been signed by a healthcare provider and the patient or legal surrogate must be made available to the EMS personnel for them to follow a patient's wishes. The patient may also order and wear a Comfort One bracelet that serves as the original form.

Both SD MOST and Comfort One forms have pros and cons concerning their use. See Table 1.

Decision Making

Both ACP and goals of care conversations should include the patient if they have capacity and/or their legal surrogate

Table 1. Advanced care planning form details.

Elements	SD MOST	Comfort One
Purpose	Voluntary, transportable medical orders	Voluntary, transportable medical orders
Recognition	Recognized by all states	Specific to South Dakota
Patient eligibility	Patient with a terminal illness.	Any patient who chooses not to receive cardiopulmonary resuscitation and intubation.
Other	Allows for updated documentation when it has been reviewed	No CPR, defibrillation, intubation, assisted breathing or administration of resuscitation medications

decision maker. If the patient does not have capacity, the legal surrogate can still complete Comfort One or SD MOST documents. A legal surrogate cannot complete a medical power of attorney, or a living will on behalf their loved one. If there has been no legal document created, one must follow South Dakota Healthcare Consent statute (https://sdlegislature.gov/Statutes/34-12C) to identify who can make medical decisions. If there is no one available or willing to make healthcare decisions, one would have to apply for and get guardianship of the patient to make healthcare decisions. To do this, one would have to work with an attorney and go to court to get letters of guardianship.

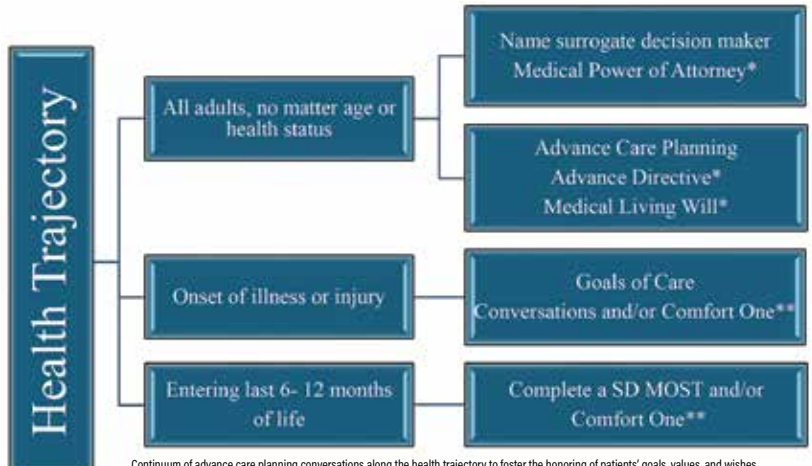
Medical power of attorney is a legal document that identifies who would make medical decisions for a person when they no longer have capacity to make medical decisions either due to illness or injury. This document may or may not contain information on the type of medical care a person would want. During ACP conversations or goals of care conversations where a person is not yet eligible to complete a MOST document, it may be helpful to encourage the patient to use another tool that documents their healthcare preferences such as What Matters to Me Workbook" from The Conversation Project (https://theconversationproject.org/new-workbook-what-matters-to-me/).

Medical Living Will. This legal form can be completed at any time by a healthcare professional or attorney and must be notarized or witnessed by two individuals. It provides direction if a person has a terminal condition and imminent death. This form can include information about resuscitation; however, it must include information about patients' wishes for artificial nutrition and hydration. Other living wills may include a list of treatments that patients will identify if they would or would not want. For an example, please see Monument Health's medical living will declaration at https://monument.health/wp-content/uploads/2022/05/Living-Will_05172022.pdf.

Conclusion

ACP is essential to learning and reinforcing patients' healthcare wishes. Barriers have included confusion on which document to use and finding the documentation in EMRs. By providing definitions for ACP and examples of different legal documents based upon patient's health and wishes (Figure 1), we hope to bridge the gap in ACP and its documentation with goal congruent care based on the patient's wishes, values, and beliefs.

Figure 1. Continuum of advance care planning conversations.



Continuum of advance care planning conversations along the health trajectory to foster the honoring of patients' goals, values, and wishes.
*Update periodically
**Repeat as necessitated by illness/injury or changing circumstances
SD MOST: South Dakota Medical Order for Scope of Treatment

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Revolutionizing Hyperbaric Oxygen Therapy with Innovation, Comfort, and Patient-Centric Care

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Review of Electrosurgical Unit Terminology and Applications in Orthopaedic Surgery

Alexander J. Bergeson, MS III; and Nathan W. Skelley, MD

Introduction

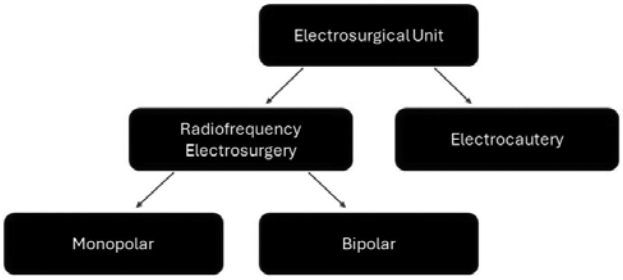
An electrosurgical unit (ESU) is a tool commonly used in orthopaedic surgical procedures to facilitate tissue handling. ESUs harness and utilize energy from electricity in order to perform tissue dissection and hemostasis.[1] Through advancements in technology, there are now a variety of handheld instruments that are commonly utilized. Despite their widespread use in orthopaedic surgery, there frequently remains confusion as to how ESU instruments work and differ from one another. The purpose of this review is to explore terminology surrounding ESUs used in orthopaedic surgery to understand the types of ESU instruments, monopolar and bipolar electrosurgery, and the cut and coagulation features of electrosurgery.

Radiofrequency Electrosurgery Versus Electrocautery

Under the umbrella of ESUs, there are two main categories of instruments: radiofrequency (RF) electrosurgery and electrocautery instruments, as shown in Figure 1. Both types of devices use electricity to impart cell death and hemostasis, although through two different mechanisms.

RF electrosurgery, also known as RF ablation, is a commonly used tool during both open and arthroscopic orthopaedic surgeries. RF electrosurgery passes electricity through the patient's body to impart its effects on tissue. During RF electrosurgery, an ***alternating current*** of electricity at a high frequency is passed from the device into the patient's tissues.[2] The frequency range used in electrosurgery exists within the radiofrequency broadcasting band, therefore the electrosurgical unit is often referred to as "radiofrequency."

Figure 1. Organizational chart of electrosurgical units.



Once the electrical impulse reaches tissue, the tissue behaves as a resistor, thereby converting electrical potential energy into thermal energy.[2,3] That conversion allows the RF electrosurgical device to impart its effects on tissue to stop bleeding and cause tissue destruction. After entering the tissue, the electrical impulse then travels to a return electrode or pad that completes the electrical circuit.[1,2,3]

There is a subunit of RF electrosurgery called plasma RF ablation that is commonly used in orthopaedic surgery during arthroscopic procedures. An example of one of these bipolar radiofrequency devices is displayed in Figure 2. To understand the plasma RF ablation, one must first understand the basic principles of plasma and its formation. When enough energy is applied to an electrically neutral

Figure 2. Handheld plasma bipolar radiofrequency electrosurgical device.

medium, electrons are stripped away from their respective nuclei. That leads to the formation of plasma, a net neutral mixture of positive and negative charged particles within a medium. Despite the net charge of plasma being neutral, the free electrons within the mixture allow for conduction of electricity.[4] During use in arthroscopic procedures, fluid within the joint space acts as the medium for creation of a plasma bubble at the tip of the bipolar instrument. The plasma bubble then acts as the application electrode, rather than the metal tip used in RF electrosurgery.[2] As tissue alteration occurs, resistance increases, and the contact spot of the plasma tends to move towards areas with less resistance. Because of this, plasma RF ablation has limited penetration depth and is best utilized for superficial applications.[2]

Electrocautery does not pass an electrical current into the patient's body and instead works on the ancient principle of thermal cautery.[1,5] Figure 3 displays an example of an electrocautery device. Thermal cautery works through heating an object to scorch tissue similar to a toaster or a soldering iron, with the intent of causing hemostasis or tissue necrosis via heat energy. Within the electrocautery unit, a ***direct current*** of electricity is applied to exposed metal at the tip of the tool. Through resisting electrical current, the metal at the tip of the instrument becomes heated. The heated tip is then applied to the tissue to cauterize, or scorch, tissue.[5] It is important to note that there is no passing of electricity through the patient with an electrocautery device. Therefore, the main use for electrocautery devices is when hemostasis is needed in a patient where the passing of an electrical current into the body would be contraindicated.[1,5] Examples include some instances where the patient has an implanted electrical cardiac device or in anatomical areas where there is high risk of damage to surrounding tissues when the electrical current disperses.[3,6,7]

Figure 3. Handheld electrocautery device.

Monopolar Versus Bipolar Devices

RF electrosurgical devices can be further classified as being monopolar and bipolar, as shown in Figure 1. While there must be two poles in each type to have a complete circuit, one active and one dispersive electrode, the nomenclature is based on how many poles are present at the surgical site.

With monopolar electrosurgical devices, only the active electrode is present at the surgical site. Figure 4 displays an example of a monopolar device. The return electrode typically consists of a pad that is placed on the skin, away from the surgical site. The electrical impulse is applied to the desired tissue by the active electrode, disperses throughout the patient's body, and is returned to the ESU system via the return electrode pad.[1,3,5] The relative surface areas of the active and return electrodes are important. The tip of the active electrode has a smaller surface area than the pad for the return electrode.[3] That is important for two reasons. First, the small surface area of active electrode concentrates electricity, allowing for lower voltages needed and precision of application. Secondly, the large surface area of the return pad prevents concentration of electricity at any one point, thereby reducing the chance of tissue damage at the return

Figure 4. Handheld monopolar radiofrequency electrosurgical device.

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site.[3] Because electricity disperses throughout the patient's body with a monopolar device, there are two important considerations that must be made before operating the device. First, the return electrode must be placed on a flat surface of the body. Electricity concentrates at areas with sharp angles; therefore, a burn can occur if the return pad is not placed on a flat section of skin.[1,3] Additionally, precautions must be taken when a patient has an implantable electronic medical device. Implantable electronic medical devices can be damaged from the electricity from a monopolar electrosurgical device.[3,6,7] That makes it important to determine if the patient's device is compatible with monopolar electrosurgical devices. If it is not, it may be necessary to use either a bipolar device or an electrocautery unit to reduce risk of damage.[3,6,7]

In contrast to monopolar devices, bipolar electrosurgical devices have both an active and return electrode as part of the handheld device. An example of a bipolar device is displayed in Figure 5. Tissue is grasped between the two electrodes, allowing the electrical impulse to travel from the active electrode, through the grasped tissue, and directly into the return electrode on the same handheld device.[1,3,5] Because of the proximity of the active and return electrodes, only the grasped tissue is involved in the circuit. That allows for lower voltage needed, prevention of spread of electricity throughout the entire body, and limits effects to a smaller area.[1,3,5] That decreases the risk of alternate site burns and impacts on implantable electronic medical devices. Additionally, bipolar devices work in any medium, allowing them to be used in wet surgical fields.[1] Disadvantages of bipolar devices include a limited ability to cut or coagulate large areas of tissue. That is due to its smaller area of thermal damage and needing to grasp the tissue on both sides.[3,6]

Figure 5. Handheld bipolar radiofrequency electrosurgical device.

Photo courtesy of Hao Li, MD.

Coagulate Versus Cut

RF electrosurgical devices can have two effects on tissue: coagulation and cutting. These two effects on tissue differ due to the rate of temperature change that the electrosurgical device imparts on tissue.

Coagulation occurs with slower heating of the tissue and is used for hemostasis. During coagulation, the device delivers interrupted bursts of electricity. Between bursts of electricity, the tissue is allowed to cool, allowing for slower heating of the tissues. That slowed heating process leads to the drying out of cells and the denaturing of proteins. Through that process, cells transform into a gelatinous consistency that blocks open blood vessels and causes hemostasis.[2,3,6] The process of coagulation can be done through both desiccation and fulguration. Desiccation is done through direct contact of the active electrode with the tissue and leads to deeper coagulation.[3,6] Fulguration, on the other hand, does not involve direct contact of the active electrode with tissue. Instead, the device is activated in the air at a short distance from the tissue. That allows for the electrode to ionize the air above the tissue and form sparks that contact the tissue. Through this process, superficial coagulation occurs over a wider surface area.[3,6]

Cutting happens when rapid heating of tissue causes vaporization of cells.[2,3,6] The cut function on an RF electrosurgical device can be used as either a pure cut or blended cut. During pure cutting, there is constant application of current to the tissue.[3] The tissue rapidly heats to over 100° Celsius, leading to fluid vaporization and explosion of the cell.[2,3] Because there is no repeated heating and cooling, there is less damage to the surrounding tissue and the device can mimic a scalpel as it dissects through tissue.[3] One disadvantage of the pure cut setting is that there is minimal hemostasis that occurs. That lack of hemostasis can be addressed by using a blended cut.[3] By using the blend function, some hemostasis can be achieved while cutting. It is achieved by introducing breaks between bursts of electrical

current in a similar fashion to coagulation, although the breaks are shorter and further apart. By varying the ratio that the electric current is on versus off, one can control the amount of coagulation that occurs while dissecting tissue.[3,5] One disadvantage of a blended cut is increased damage done to cells near the cut site.[3]

Conclusion

Through education on terminology surrounding ESUs, one can better understand and compare RF electrosurgery and electrocautery, monopolar and bipolar electrosurgery, and cut versus coagulation during electrosurgery. Knowledge of this topic allows orthopaedic surgeons to better understand the tools that they are using and improve patient safety during tool utilization.

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Dr. Skelley is a consultant to CONMED Corporation on a topic unrelated to the presented information.

High BMI in Pregnancy: A Case for Referral

Shelley Feng, MD; Elizabeth Hultgren, MD, PhD; and Rachel Rodel, MD

Abstract

Obesity leads to higher risks of complications in pregnancy and at the time of labor and delivery, including preterm delivery, shoulder dystocia, operative vaginal delivery, and cesarean delivery. In addition, there is a dose-response relationship between increasing obesity class and risk of severe maternal morbidity at the time of delivery to include acute renal failure, heart failure, mechanically assisted ventilation, anesthesia complications, postpartum hemorrhage, and blood transfusion. In this brief review, we highlight the importance of referral specifically for delivery due to higher risk of complications for pregnant patients with elevated BMI, although certainly referring to a tertiary care center early in pregnancy would be preferred for medical optimization, detailed fetal anatomic evaluation, and delivery preparation.

Introduction

Obesity, defined as a BMI of greater than 30 kg/m^2 in the general adult population, is further divided into three categories, class I for BMI 30 to <35, II for BMI of 35 to < 40, and III for ≥40.[1] It is associated with several medical conditions, including cardiovascular disease, stroke, and diabetes mellitus.[2-4] From 2017-2018, an estimated 41.9% of adults in the United States have obesity, increased from 30.5% from 1999-2000.[5] Among women of reproductive age, the prevalence of obesity was roughly 40% in 2017-2018.[6] Obesity during pregnancy has been correlated with several adverse maternal and neonatal complications, including gestational diabetes, preeclampsia, congenital abnormalities, and stillbirth.[7-9] Elevated maternal BMI poses increased risk of complications and necessitates consideration of several factors during the labor and delivery period in particular.

Methods

MEDLINE, ScienceDirect, and ClinicalKey databases were searched. A last search was conducted in September 2023. Search terms included "obesity", "pregnancy outcome", "obstetric labor complications" (MeSH terms in MEDLINE). Manuscripts were selected by one primary reviewer and verified for inclusion by two other independent reviewers who are practicing obstetricians. Articles published from 2006 to 2023 were considered. No language restrictions were applied. Obstetrics and gynecology, anesthesia, and pediatric journals websites and references of included articles were also reviewed. Articles were included if they were practice guidelines, primary studies, systemic reviews.

General Labor and Delivery Complications

Although obesity itself is not currently a Centers for Medicare & Medicaid Services (CMS) indication for early term delivery, obesity has been associated with indicated preterm delivery in the setting of increased risk of conditions such as gestational diabetes and hypertensive disorders of pregnancy.[10] This is in contrast to pregnancies without indicated preterm delivery, in which increasing BMI has been connected to higher risks of post-term birth.[7] These findings are consistent with data showing increased rates of labor induction and oxytocin augmentation.[7,11-13] Importantly, obesity has been shown to be connected with labor complications such as decreased cervical dilation rate, increased risk of shoulder dystocia and operative vaginal delivery,[7] leading to potential adverse neonatal outcomes including neonatal intensive care unit admission.[14-16] These complications have been postulated to be secondary to a suboptimal response to oxytocin in addition to the increase in soft tissues narrowing the birth canal.[17]

While obesity alone is not typically an indication for cesarean delivery and vaginal birth is preferred in the absence of other factors,[7] patients with elevated BMI are at higher risk of cesarean delivery compared to patients with normal BMI.[8,18] These cesarean deliveries are further complicated by longer incision-to-delivery intervals as well as total operative times.[19] Between elective and emergent cesarean deliveries, obesity has been shown to have a stronger, albeit non-significant, association with emergent cesarean delivery.[7] In addition, pregnant patients with obesity or morbid obesity were found to be at greater risk of complications associated with cesarean

delivery OR 2.05; 95% CI 1.86–2.27),[20] including higher volume blood loss (p = 0.003),[21] wound complications (1.14; 95% CI, 1.06-1.23),[22] and complications with trials of labor after cesarean (p = 0.03).[23]

In addition to the other forementioned increased peripartum risks to pregnant individuals with elevated BMI, obesity itself also presents challenges to anesthesia management. Platner et al found that women with class III obesity had significantly higher odds of severe anesthesia complications compared to patients of normal weight (OR 3.85; 95% CI 1.82–8.15).[8] In particular, obesity increases risks of complications associated with general anesthesia, including risk of hypoventilation during emergence and recovery, as well as risk of airway obstruction.[7] In a more recent multicenter analysis, elevated BMI ≥40 was found to be associated with increased odds of difficult intubation in patients undergoing general anesthesia for cesarean delivery (OR 2.71; 95% CI 1.53–4.8).[24] Neuraxial anesthesia is preferred whenever possible. However, pregnant patients with morbidly elevated BMI are also at increased risk of difficult placement and failure of neuraxial anesthesia compared to their normal-weight counterparts (p < .01),[25] resulting in inadequate analgesia, unilateral block, or catheter replacement[26]. In circumstances when general anesthesia is needed, preparations for a potential difficult intubation should be made, including having a video-laryngoscope immediately available if needed.[27] In addition, for pregnant patients with obesity, it is especially important to carefully assess any preexisting co-morbidities that may develop into complications with general anesthesia. For example, it is recommended to screen pregnant individuals with BMI ≥30 for obstructive sleep apnea, a condition that is a risk factor for difficulty with airway management due to obstruction.[28,29]

Postpartum Hemorrhage

Compared with pregnant patients of normal BMI, those with elevated BMI have been shown to have significantly higher odds of postpartum hemorrhage in cases due to uterine atony after vaginal delivery.[17] Risk increases with obesity class, with patients in World Health Organization obesity class III (BMI ≥40 kg/m^2) at twice higher risk of atonic postpartum hemorrhage. In this particular subset of patients, the risk of postpartum hemorrhage in general is increased after normal vaginal delivery (OR 1.8; 95% CI 1.05–3.12) and even more so after instrumented delivery when compared to patients of normal weight.[30] The increased risk of postpartum hemorrhage in patients with elevated BMI is likely multifactorial, including risk related to operative vaginal delivery and secondary effects, such as perineal tears, vaginal and cervical lacerations, as well as vaginal and uterine ruptures.[31] Other potential risk factors for increased blood loss include a larger area of distribution for uterotonic agents and greater difficulty in performing bimanual massage. Subsequent to the risk of postpartum hemorrhage, patients with class III obesity were found to have significantly higher odds of blood transfusion at the time of delivery (OR 1.23; 95% CI 1.07–1.43).[8]

Infection, Venous thromboembolism, and Others

Platner et al found that pregnant individuals with class III obesity were found to have significantly higher odds of acute renal failure, heart failure during procedures, mechanically assisted ventilation, adult respiratory distress syndrome, pulmonary edema, heart failure, anesthesia complications, and sepsis.[8] BMI is an independent risk factor for postpartum endometritis after normal vaginal delivery.[32] Following cesarean delivery, high BMI has been identified as an independent risk factor for surgical site infections.[33,34] In particular, patients with obesity class II have a significantly greater risk when compared with patients with normal BMI, (OR 4.07; 95% CI 2.48–6.69).[33] While superficial infections can be managed by antibiotics alone, deep surgical site infections may require wound exploration and debridement.[9]

In addition to infection, obesity has been linked to higher odds of venous thromboembolism in pregnant individuals.[7,9] Platner et al showed that women with super obesity (defined as 225% of ideal body weight or BMI > 50 kg/m^2) in particular have higher odds of air and thrombotic embolism when compared to women with normal BMI.[8] Another study demonstrated that the risk of thromboembolism is four times higher in pregnant individuals with BMI >40 kg/m^2 than in those with normal BMI and that high pre-pregnancy BMI and large pregnancy weight gains contributed to this increased risk.[7] The American College of Obstetricians and Gynecologists recommends that mechanical thromboprophylaxis be initiated in obese patients before cesarean delivery and continued postpartum.[9] In very high-risk patients such as individuals in obesity class III, weight-based pharmacologic thromboprophylaxis should be considered.[9]

Conclusion

Obesity class III during pregnancy is well associated with several adverse maternal and neonatal outcomes.[7,8] Pregnant patients with high BMI are more likely to have gestational diabetes mellitus and hypertensive disorders of pregnancy in the antepartum period, as well as cardiac dysfunction,

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sleep apnea, and stillbirth.[7-9] In the labor and delivery period, elevated BMI is associated with elevated risk of complications such as cesarean delivery, instrumental delivery, postpartum hemorrhage, blood transfusion, sepsis, venous thromboembolism, and other possible serious maternal morbidity events. Obesity is a clear risk factor for adverse outcomes at the time of labor and delivery which warrants careful consideration for referral to a hospital with a higher level of maternal and neonatal care[35] with obstetricians, anesthesiologists, and other hospital support such as blood blank availability. Referral during pregnancy is strongly recommended, especially for those individuals in obesity class III (BMI >40) for accurate assessment of fetal and maternal comorbidities along with a plan for delivery.

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Legal Brief Highlight: Peer Review and Discovery

The Health Care Quality Improvement Act of 1986 sets out standards for professional peer review actions. If a professional review body meets these standards, then neither the professional review body, nor any person acting as a member or staff to the body, will be liable in damages under most federal or state laws arising out of their peer review activities.

The proceedings, records and reports of peer review committees relating to peer review activities are confidential, not subject to discovery and generally are not admissible as evidence in any court or arbitration proceeding. Similarly, no member of the peer review committee or any other person in attendance at a meeting of the committee may be required to testify as to what transpired at such meeting. Members of a peer review committee who act in good faith are immune from claims for monetary damages arising out of their peer review activities. This immunity does not, however, extend to professional societies or hospitals acting in a peer review capacity.

For more information, download the SDSMA legal brief Limitations of Actions at sdsma.org. The SDSMA provides legal briefs for member physicians on a variety of rules and regulations that apply to the medical profession. For nonmembers, legal briefs are available for purchase.

American Medical Association Delegate Report – 2024 Annual Meeting

The 2024 Interim Meeting of the American Medical Association House of Delegates was attended by South Dakota's delegation – Rob Allison, MD; Mary Carpenter, MD; and Robert Summerer, DO – in Lake Buena Vista, Florida, November 8-12. Medical students who attended were Alivia Ankrum, Olivia Heinecke, Riley Hellman, and Sam Vassar. Here are some of the highlights of the meeting:

Medicare cuts start to hit home in Congress

Physicians need support in Congress to back changes to a broken system that is in line to cut the payments that support doctors' practices by 2.8% January 1, further endangering access to high-quality physician care. That is why fixing Medicare is the AMA's top advocacy priority. Already, a bipartisan majority of 233 members of the U.S. House of Representatives has written to leadership demanding inclusion of a positive 2025 payment update for physicians in the year-end omnibus. Just a week prior to the AMA meeting's opening, H.R. 10073, the Medicare Patient Access and Practice Stabilization Act of 2024, was introduced. Congress must prioritize passing this legislation during the lame-duck session. The measure would raise physician payment rates by one-half of the Medicare Economic Index by applying a 12-month payment update of 4.7%. Following SDSMA advocacy on this issue, Congressman Dusty Johnson recently signed on as a sponsor of the bill.

Having a physician on site is best way to deliver emergency care

Physicians are best equipped to assess, stabilize and arrange for transfer the patients who arrive at hospital emergency departments. But rural and remote facilities may not always be able to have a physician on site, according to an AMA Board of Trustees report adopted at the meeting. "Without the availability of a physician's expertise, patient safety is put at

risk," says the report, whose recommendations support physician-led care in all health care settings while addressing the special needs of rural emergency departments. The South Dakota delegation was pleased with the newly adopted policy because it strikes a balance: it will bolster the AMA's work in fighting scope creep, but acknowledges the challenges of staffing emergency rooms in rural hospitals.

Boost aging patients' meaningful access to health tech

It is critically important to make health IT accessible for all and to achieve equitable adoption among aging patients, people with hearing and eyesight impairment, as well as those who live in communities underserved by a lack of high-speed broadband access. "Access to telehealth services can be a lifeline to patients across the country and facilitates unprecedented expansion in access to crucial health care services," notes an AMA Board of Trustees report whose recommendations were adopted by delegates. Research shows that millions of older adults are not ready to use video visits due to barriers including that they are inexperienced with the technology, have trouble hearing or seeing well enough, or lack internet-enabled devices. In addition, EHRs lack a standard way to store and retrieve the advanced-care planning documents that are especially important in the care of older-adult patients.

Give fellows the same benefits that resident physicians have

Graduate medical education is funded through both private and public sources. The largest source of GME funding for residency positions is through Medicare. Fellowship positions, conversely, rely on funding from private foundations, direct funding from the institution, government grants, endowments and donations and other sources. The differences in funding structure can allow institutions to provide inferior benefits and salaries for fellows as compared with residents. Citing that all residents and fellows deserve to be eligible for the same benefits, no matter what the funding source is for their program, the AMA modified existing policy in the "Residents and Fellows' Bill of Rights" to address the issue. The policy further amends AMA policy related to adequate compensation and benefits that provide for resident well-being and health.

Make sure doctors can intervene on AI-influenced health decisions

The House of Delegates adopted as policy a comprehensive set of principles on the development, deployment and use of AI. The newly adopted policy is in large part drawn from the set of health AI principles approved by the AMA Board of Trustees last year that addresses: health care AI oversight; when and what to disclose to advance AI transparency; generative AI policies and governance; physician liability for use of AI-enabled technologies; AI data privacy and cybersecurity; and payor use of AI and automated decision-making systems. Delegates adopted some changes aimed at bolstering the overall aim of ensuring AI is properly used and that physicians can intervene, when necessary, especially as the risk of patient harm rises.

CME must be streamlined across states, specialties

The process of lifelong learning is necessary for physicians to continuously grow their skills. The mechanisms through which doctors must earn and receive credit for continuing medical education (CME) and maintenance of certification, however, are unnecessarily cumbersome, says a resolution introduced at the 2024 AMA Interim Meeting by the American College of Physicians. With all of the other administrative burdens physicians face every day, it is vital to take steps toward simplifying the CME reporting process. If time-consuming and repetitive reporting can be streamlined and standardized, physicians can focus on what matters most — providing high-quality care to patients. The AMA Ed Hub, an online learning platform that brings together high-quality CME, maintenance of certification, and educational content from trusted sources all in one place, provides automated credit tracking and reporting for some states and specialty boards.

After prior authorization approval, health plan should pay for care

No more take backsies. That is the AMA's message for payers who force patients and physicians to meet burdensome documentation requirements in order to prior authorize or precertify care and then — after the care has been delivered — decide to back out of paying or try to recoup payment already made. Insurers will frequently cite vague reasons such as overpayment on their part, a redetermination that approved care was not medically necessary or incomplete paperwork. Prior authorization should be sufficient to guarantee payment.

Make all physicians eligible for leave on day 1

A 2021 study of top-ranked hospitals and cancer centers found that the average paid maternity leave for patients giving birth was 7.8 weeks. The average parental leave for nonbirthing parents was 3.6 weeks. Those figures are well below the 12-week paid family leave recommendation of the American Academy of Pediatrics. Recent graduates, many of whom delayed having a child until after training, are face an additional deterrent to parenthood: some state-based parental leave laws that also require employees to have worked at least 12 months. Citing the burden that mandatory time-triggered leave policies pose for new residency and fellowship graduates, delegates modified existing policy to recommend "that medical practices, departments and training programs strive to provide 12 weeks of paid parental, family and medical necessity leave in a 12-month period for their attending and trainee physicians as needed, with the understanding that no parent be required to take a minimum leave, and with eligibility beginning at the start of employment without a waiting period.

Robert L. Allison, MD, Delegate

Mary S. Carpenter, MD, Delegate

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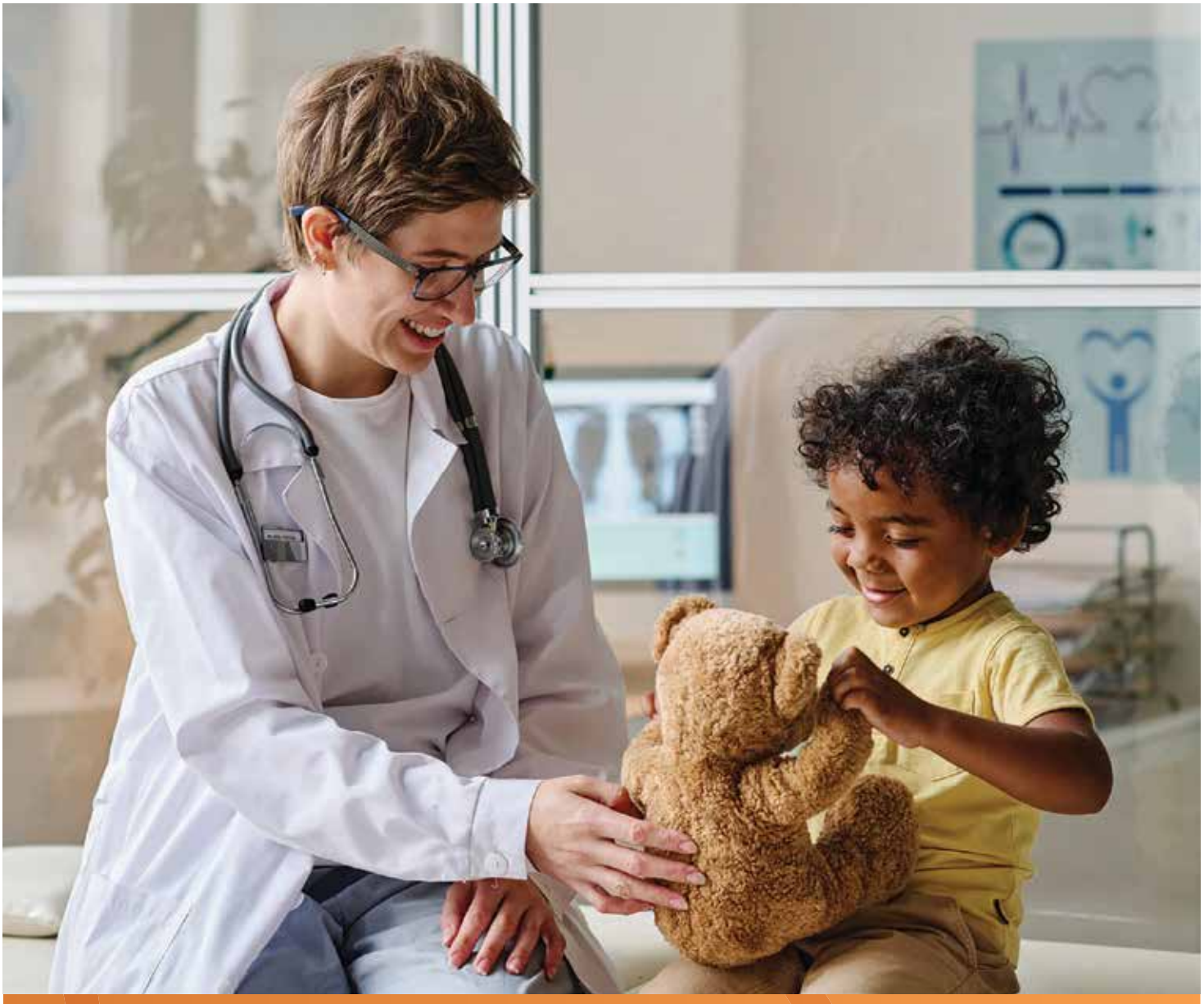

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