The North Dakota Nurse

NDNA
NORTH DAKOTA NURSES ASSOCIATION

NORTH DAKOTA NURSES ASSOCIATION

THE OFFICIAL PUBLICATION OF THE NORTH DAKOTA NURSES ASSOCIATION
Sent to all North Dakota Nurses courtesy of the North Dakota Nurses Association (NDNA). Receiving this newsletter does not mean that you are a member of NDNA. To join please go to www.ndna.org and click on "Join."
Quarterly publication direct mailed to approximately 17,000 RNs and LPNs in North Dakota

Vol. 84 • Number 4 **October, November, December 2018**

INDEX

President's Article

Advocate for Yourself

Tessa Johnson

Greetings North Dakota Nurses! My last article was 'The Year of Advocacy.' Well, because we are all selfless nurses I would bet we are better at advocating for our patients, our friends, our loved ones and everybody else other than ourselves. Am I right? With the holidays all fast approaching I think it is always a good time to shed light on this important subject. For those of you that attended our recent conference you will know we have found it important enough that we have made self-care our annual conference topic. I believe we must be mindful of this all year long, especially during the busiest times such as the holidays. Between shopping, cooking, family, and entertaining it's easy to understand why people get strained out during the holidays. Before things become too overwhelming this holiday season, take the following information into consideration.

Simplify – If you are struggling to keep up with holiday-related activities this year consider delegating some tasks to other family members, limit the number of social events you attend, cut back on the amount of baking you would normally do, or consider a family gift exchange rather than buying gifts for your entire extended family. We must learn our limits and when it is okay to say no or to cut back before we burn out.

Prioritize values – Discuss what is important to you and your family. Give priority to things that mean the most and can be accomplished realistically and within your budget and time.

Adjust your expectations – We can easily reduce stress by keeping realistic expectations of yourself and others around you. One thing that we have against us now is social media. Social media can add additional stress and expectations when we compare ourselves to others. Understand that although we may envision the holidays as a time for excitement and joy, disappointment and frustration are normal feelings that may arise as well. Lower your expectation of perfection and understand that things happen.

Take care of your health – We can all benefit from a healthy diet and regular exercise, which help to alleviate stress. This is one of the things that I am personally passionate about. As a busy working mother of two, I commit to my own health on a regular basis. It is so important to remember I am the only one who will make that commitment and its okay to be selfish for an hour or so a day to get physical exercise or decompress. Exercise is considered vital for maintaining mental fitness, and it can reduce stress. Studies show that it is very effective at reducing fatigue, improving alertness and concentration, and at enhancing overall cognitive function (ADAA, 2018). Another thing for me personally is I am very grateful to be surrounded by loved ones during the holidays. Doing things that are a little more relaxing is a great way to reduce anxiety and depression. Having said that, it is so important to take time for yourself. So, I'm making it a huge priority this year to relax and unwind by focusing on my mental health. I encourage you all to find a way this holiday season and ALWAYS to be an advocate for yourself. Be well, we need all of you!!!

ADAA. (2018, September 18). Physical Activity Reduces Stress. Retrieved September 18, 2018, from https://adaa.org/understanding-anxiety/related-illnesses/other-related-conditions/stress/physical-activity-reduces-st

Presort Standard
US Postage
PAID
Permit #14
Princeton, MN
55371

current resident or

How to submit an article for *The North Dakota Nurse*!

The North Dakota Nurses Association accepts articles on topics related to nursing. We also accept student articles & evidence based practice articles. All articles are peer reviewed and edited by NDNA volunteers.

Deadline for submission for the next issue is ***12/10/2018***. Send your submissions to info@ndna.org.

Message from the President

Tessa Johnson

I am writing to inform the NDNA membership of a change in staff we have had in July 2018 in our Association. Carmen Bryhn has resigned from her position as Executive Director and her last day was July 31st, 2018. On behalf of the board of Directors, we want to thank her for all her hard work and dedication to NDNA over the last three years! She has helped our association grow in tremendous ways, and we wish her the very best of luck!

In moving forward, we were fortunate to hire one of our own board members, Sherri Miller, to take her reigns!

Carmen and Sherri shared the role in July for a smooth transition process. Sherri has been very successfully fulfilling the role in the month of August!!

Sherri is a Registered Nurse with almost twenty years of progressive experience in the nursing/nurse leadership fields. Prior to nursing, Sherri was a certified teacher and carried her love and passion for educating into nursing. Her diverse professional nursing history includes several years as a staff nurse on the oncology, ortho-surgical and ENT floors, a physician's office nurse/nurse manager and employment at a rapidly growing remote medical home care coding company as Director of Operations, then Director of Support Services. Sherri holds Bachelor's degrees in both Education and Nursing. Currently, she works as a Point of Care Testing Nursing Coordinator at CHI St. Alexius Health in Bismarck, as well as is now the Executive Director of the North Dakota Nurses Association.

Sherri has a special interest in health/wellness and is also a certified personal fitness trainer. She resides in Bismarck with her family, including two golden retrievers.

Welcome, Sherri! We are thrilled to have you!

If you need to reach Sherri, you can email her at: director@ndna.org.

Respectfully submitted,

Tessa Johnson, MSN, BSN, RN
NDNA President

Welcome New Members

Monica Sorgen	Kendra Knain
Jarrod Hinkle	Kimberly Spallinger
Jennifer Drevlow	Jerico Alicante
Kirsten Azure	Allyssa Albrecht
Amber Logie	Danielle Scott
Jaime Yaeger	Tiffany Lothspeich
Alyssa Armentrout	Stephanie Jespersen
Jenna Flynn	Melissa Kainz
Andrew Janssen	Ashlyn Deachin
Skylar Wehri	Mitchell Nacke
Camille Meyer	Melanie Kamp
Johanna Grignani	Deborah Gabriel
Kasey Klein	Rhonda Enger

The North Dakota Nurse

Official Publication of:
North Dakota Nurses Association

NDNA
NORTH DAKOTA NURSES ASSOCIATION

General Contact Information:
701-335-6376 (NDRN)
info@ndna.org

Officers

Published quarterly: January, April, July, and October for the North Dakota Nurses Association, a constituent member of the American Nurses Association, 1515 Burnt Boat Dr. Suite C #325, Bismarck, ND 58503. Copy due four weeks prior to month of publication. **For advertising rates and information,** please contact Arthur L. Davis Publishing Agency, Inc., 517 Washington Street, PO Box 216, Cedar Falls, Iowa 50613, (800) 626-4081, sales@aldpub.com. NDNA and the Arthur L. Davis Publishing Agency, Inc. reserve the right to reject any advertisement. Responsibility for errors in advertising is limited to corrections in the next issue or refund of price of advertisement.

Writing for Publication in The North Dakota Nurse

The North Dakota Nurse accepts manuscripts for publication on a variety of topics related to nursing. Manuscripts should be double spaced and submitted electronically in MS Word to director@ndna.org. Please write ***North Dakota Nurse article*** in the address line. Articles are peer reviewed and edited by the RN volunteers at NDNA. **Deadlines for submission of material for upcoming North Dakota Nurse are 12/10/18 and 3/11/19.**

Nurses are strongly encouraged to contribute to the profession by publishing evidence based articles. If you have an idea, but don't know how or where to start, contact one of the NDNA Board Members.

The North Dakota Nurse is one communication vehicle for nurses in North Dakota.

Raise your voice.

The Vision and Mission of the North Dakota Nurses Association

Vision: North Dakota Nurses Association, a professional organization for Nurses, is the voice of Nursing in North Dakota.

Mission: The Mission of the North Dakota Nurses Association is to promote the professional development of nurses and enhance health care for all through practice, education, research and development of public policy.

NDNA Newly Appointed or Re-Elected Board Members

Re-elected

PRESIDENT – Tessa Johnson, MSN, RN

Tessa Johnson

I have a genuine passion for nursing and nursing practice in the state of North Dakota. Being a part of the board has shown me the selfless time, effort, and dedication it takes to be an advocate of the nursing profession. I want to help the board and the nurses in the state to be the best they can. I am currently employed through Agemark Countryhouse in Dickinson as the Executive Director of the building. I have a background in nursing leadership and management, and have a diverse background in different areas of nursing to bring to the table.

Newly Elected

VICE PRESIDENT OF PRACTICE, EDUCATION, ADMINISTRATION, AND RESEARCH (PEAR) – Jerico Alicante , BSN, RN, CNN, FISQua

Jerico Alicante

I am Jerico G. Alicante, BSN, RN, CNN, FISQua, originally from the Philippines with more than 10 years of progressive nursing experience as medical-surgical and critical care ICU nurse and as clinical instructor in a BSN program in a university in the Philippines. I was inducted into Sigma (formerly, Sigma Theta Tau International, Honor Society of Nursing) at the Alpha Eta Chapter at University of California, San Francisco, CA, USA in May 2014. Since then, I have been involved at the local level as board of director; regional level as Asia Regional Committee member; and international level as current board of director for Sigma Foundation for Nursing 2017-2021. I have also served on different committees as member and chair within Sigma and other professional organizations such as the Renal Nurses Association of the Philippines to which I serve as board of director and scientific committee chair. I want to be involved with NDNA to help local RN's develop their leadership potential and be instrumental to realize their impact on the patients, family, and community that they serve.

Newly Elected

DIRECTOR AT LARGE: RECENT GRADUATE – Jessica Vos, BSN, RN

Jessica Vos

I graduated from NDSU with my BSN in August 2016, and have since been working on Med/Surg at the Fargo VA. I have worked at the VA for 5 ½ years. Before becoming an RN, I worked as an LPN, both on Med/Surg and in the Rheumatology Clinic. Being at the VA has taught me so much about policy and politics. But in the end, we have to do what is right by our patients so there needs to be balance and compromise at times to produce acceptable outcomes. As a nurse, I practice to serve my patients and their families and provide the best care possible. I also know there are other aspects (behind the scenes) issues that affect our jobs and the care we can provide. I would like to serve the NDNA to help guide and lead nurses, influence leadership in recognizing the importance of the nurses role in patient outcomes, and to find best practices to provide the safest and most effective care for our patients. As a newer member of the NDNA, I am eager and willing to provide the board with my enthusiasm and talent for detail. I know a lot of things in nursing and policy can be gray at times and I am the type of person to help provide clarity in uncertain situations. I am self-directed and thrive off application of processes. I also thrive off policy and rules. I can find clarity and make decisions based information provided to me and express that information to others to help them understand. Even though I am a newer RN, I have always considered myself a leader. I can see strengths in my peers and encourage them to embrace those strengths and help them become leaders. I believe everyone is leader given the opportunity.

Newly Appointed

VP OF MEMBERSHIP – Kami Lehn, BSN, RN

Kami Lehn

I have nine years of nursing experience with a diverse background of nursing roles. I have provided care as a bedside nurse, a clinic nurse, as well as working in an administrative role in medical review. I would like to serve on the NDNA board to help advance nursing as a whole, while expanding my knowledge in a field that I have passionately committed my life to. I believe that nursing is an ever-changing field, and to ensure that we provide quality, safe care we all need to be part of a strong community that shares our knowledge.

Skin-to-Skin Contact

North Dakota Nurse Evidence-Based Practice Student submission Karisa Barthorpe, Kayla McLeod, Naomy Ochenga Mayville State University RN to BSN

Appraised by:
Karisa B. RN, Kayla M. RN, Naomy O. RN, Mayville State University RN to BSN Student

Clinical Question:
Among healthy newborn infants in low- and middle-income countries, does early skin-to-skin contact of the baby with the mother in the first hour of life compared with drying and wrapping have an impact on neonatal mortality, hypothermia, or initiation/exclusivity/duration of breastfeeding.

Articles:
Anderson, C., Bergman, N., & Moore, E. (2016, November 25). Early skin-to-skin contact for mothers and their healthy newborn infants. In Cochrane Library. http://www.cochrane.org/CD003519/PREG_early-skin-skin-contact-mothers-and-their-healthy-newborn-infants

Ahmed, S., Mitra, SN., Chowdhury, AMR., Camacho, LL., Winikoff, B., & Sloan, NL. (2011). Community kangaroo mother care: implementation and potential for neonatal survival and health in very low-income settings. *Journal of Perinatology, 31*, 361-367.

Gregson, S., Meadows, J., Teakle, P., & Blacker, J. (2016). Skin-to-skin contact after elective caesarean section: investigating the effect on breastfeeding rates. *British Journal of Midwifery, 24*(1), 18-25.

Synthesis of Evidence:
There are many potential complications associated with childbirth. These complications may be exacerbated or worsened when women give birth in areas with inadequate resources. Due to the lack of resources, they must make due with more traditional ways of medicine and child birth is not exempt from this. To answer our question, as previously stated, we gathered information from twelve articles published in the last ten years that addressed the benefits of skin-to-skin contact (SSC) in newborns.

In the article by Ashmed, a study was conducted to evaluate the effectiveness of community-based kangaroo care in lowering the rates of infant mortality in the low-income area of Bangladesh. The study found that, in the group studied, the most newborn deaths occurred in those babies that were held skin-to-skin for less than a hour a day or had missing newborn skin-to-skin assessments. Five newborn deaths were noted in the group of babies who had received more than seven hours of skin to skin contact within the first two days of life (Ahmed et al., 2011). Community based kangaroo care was associated with an increased rate of success with breastfeeding. It was also noted that newborn fever, cough, breathing problems, agitation, and disinterest in breast feeding would generally tend to decline as the amount of skin to skin contact increased throughout the entire sample (Ahmed et al., 2011). However, in infants weighing <2kg at birth, this was not the case.

In the second article, a study was conducted to evaluate whether there was a difference in breastfeeding rates at forty-eight hours when women performed skin to skin contact with their babies in the operating room immediately following their caesarean section in comparison to initiating skin to skin contact once they had left the operating room. The study showed that a longer skin-to-skin contact was associated with a significantly lower occurrence of artificial feeding at both forty-eight hours and at six weeks postpartum (Gregson, Meadows, Teakle, & Blacker, 2016). In participants who had provided more than twelve hours of skin to skin contact within the first twelve hours of life, one-hundred percent were still breastfeeding at forty-eight hours postpartum. Although data seemed to be a little less consistent for ten days to six weeks, there was still a general trend which showed a favorable response to breastfeeding with increased skin to skin contact postpartum (Gregson et al., 2016).

Bottom Line: (what does the evidence mean?)
Throughout our research we were unable to find any dramatic difference in temperature stability between those infants who had received skin-to-skin contact and those who had not. However, we did find that there was a direct correlation between providing early skin-to-skin contact and better infant outcomes with latching which led to breast feeding an average of sixty days longer than babies who were placed under a warmer directly after birth (Anderson, Bergman, & Moore, 2016). It was also proven that babies who were provided skin-skin contact had higher blood glucose levels and had more stable cardiac rates and respiratory outcomes (Anderson, Bergman, & Moore, 2016).

Implications for Nursing Practice:
Early intervention in neonatal care immediately after birth has a direct effect on the infant's outcome. Our critical appraisal of research was to determine if there was a link between early skin-skin-contact and infant mortality associated with temperature and breastfeeding. As premature delivery continues to be an issue in not only lower and middle-income countries, but also the entire world, SSC may be the difference between life and death. During our research, we found a correlation linking SSC and faster initiation of latching in terms of breastfeeding. This link is associated with a 22% reduction in infant mortality rate in the first 28 days (Journal of Nursing Education and Practice, 2015, p. 2).

As nurses, it is our role to not only care for and treat our patients but also educate them on their options. With the implementation of education presented by the nurse during prenatal care visits, pregnant women in all regions of the world may learn about the benefits associated with SSC. With this knowledge, we may see a decrease in neonatal complications immediately after birth as well as a decrease in readmission rates after the child and their mother have been discharged from the facility in terms of dehydration and weight loss.

Hand Hygiene Research

Appraised by:
Neelam Pokhrel, RN, KariAnn Kern, RN, & Elly Anderson, RN Mayville State University RN-to-BSN students.

Clinical Question:
Among healthcare workers, how does hand washing compare to using hand sanitizer in relation to the incidence of hospital-acquired infections?

Articles:

1. Centers for Disease Control and Prevention. (2002). Guideline for hand hygiene in health-care settings: Recommendations of the healthcare infection control practices advisory committee and the HICPAC/SHEA/APIC/IDSA hand hygiene task force. *MMWR, 51*(No. RR16):1-34.
2. Girou, E., Loyeau, S., Legrand, P. (2002). Efficacy of handrubbing with alcohol based solution versus standard handwashing with antiseptic soap: Randomized clinical trial. *BMJ (Clinical Research Ed), 325*, 362-365.
3. Maliekal, M., Hemvani, N., Ukande, U., Geed, S., Bhattacherjee, M., George, J., & Chitnis G. (2005). Comparison of traditional hand wash with alcohol hand rub in ICU setup. *Indian J Crit Care Med, 9*(3), 141-144.
4. Suner, A., Oruc, O. E., Buke, C., Ozkaya, H. D., & Kitapcioglu, G. (2017). Evaluation of infectious diseases and clinical microbiology specialists' preferences for hand hygiene: Analysis using the multi-attribute utility theory and the analytic hierarchy process methods. *BMC Medical Informatics & Decision Making, 171*-10. doi:10.1186/s12911-017-0528-z

Synthesis of Evidence:
Our team reviewed 12 articles examining hand washing versus hand sanitizer in relation to incidence of hospital acquired infection. Four articles were found to have sufficient evidence regarding our question.

In the first article, the Centers for Disease Control (CDC) published a report titled "Guideline for Hand Hygiene in Health-Care Settings" (2002). This report presents current recommendations, which are to use an alcohol-based hand rub for decontaminating hands, unless hands are visibly soiled. If they are visibly soiled, it is recommended to wash hands with soap and water. The antimicrobial properties of alcohols can be attributed to their ability to denature proteins. Alcohol solutions containing 60-95% alcohol are most effective (CDC, 2002). In order to improve hand hygiene among healthcare workers, it is important to continue providing education and monitor adherence to recommended hand hygiene practices.

Girou, Loyeau, and Legrand (2002) looked at the effectiveness hand rubbing with an alcohol based solution versus standard handwashing with antiseptic soap during routine care. Their study began by examining 12 healthcare workers who were asked to use alcohol based solution for hand hygiene. In addition, they observed the patient care activities until a predetermined number of eligible activities were performed. These actions included direct contact with a patient's skin before invasive care, after interruption of care, and contact with any part of a patient with colonized multi-resistant bacteria. As a result, there were 114 patient care activities performed and nurses that used an alcohol based solution for hand hygiene were shown to have reduced amounts of contamination (83% v 58%) versus regular hand washing with antiseptic soap (Girou, Loyeau, Legrand, 2002).

Maliekal et al. (2005) developed a correlation study that discussed the use of alcohol hand rub in the ICU setting. The study consists of 34 nurses in the ICU over the course of three months. 204 samples were collected to examine the number of residual bacteria on the nurse's hands. This was done by placing hand impressions on MacConkey agar plates and examining the different bacteria. The nurses would use an alcohol based hand rub or conventional hand wash and the residual bacteria would be rechecked. As a result, initial MacConkey agar plates show heavy bacterial density (92.2%) before washing or using alcohol hand rub. A qualitative reduction in bacteria occurred after hand washing (50%) and a substantial reduction occurred after the use of alcoholic hand rubs (95%) (Maliekal et al., 2005). Therefore, there was a far greater reduction of bacterial flora after the use of alcohol based hand rub.

In the final article by Suner, Oruc, Buke, Ozkaya, and Kitapcioglu (2017), expert opinions were given by infectious diseases and clinical microbiology specialists regarding their thoughts on antimicrobial soap and water vs. alcohol based antiseptic solutions. Applying those opinions to two methods, the Multi-Attribute Utility theory and the Analytic Hierarchy Process, to determine preferences for hand hygiene in preventing nosocomial infection. The Multi-Attribute Utility theory assigns a utility to all feasible outcomes to decide the best action in a given conflict and then computes the best possible utility. This method concluded that alcohol based antiseptic solutions had the highest utilities in majority of the criteria. The second method, Analytic Hierarchy Process, identifies a problem, utilizes subjective and objective knowledge regarding the problem, denies criteria and alternatives, and then a pairwise comparison is done. This method yielded priority to alcohol based antiseptic solution and less to antimicrobial soap and water. Of seven criteria for the study, the specialists thought that alcohol based antiseptic solutions were more efficient, better interventions, and easier to use than antimicrobial soap and water (Suner et al., 2017).

Bottom Line:
We found that using a hand rub is not only effective in preventing the spread of infection, but it is less time consuming and easier to use. Furthermore, hand sanitizer is more readily available and has been shown to be cost effective. The literature from our research strongly indicates that hand sanitizer is more effective in killing microorganisms versus hand washing alone. As nurses, it is our duty to protect our patients by performing proper hand hygiene. Hospital acquired infections are costly and preventable, and nurses are on the forefront when it comes to patient care.

Implication for Nursing Practice:
It is important that nurses realize the importance of hand hygiene in preventing nosocomial infections. Hand sanitizer is found to be less time consuming and effective at preventing infections for both the patient and the staff. Not only should education be provided for staff on correct ways to perform hand hygiene, but education for patients as well in preventing the spread of infection. As part of an overall program to improve hand hygiene practices among healthcare workers, it is important to monitor adherence with the recommended practices and provide personnel with information regarding their performance.

CHG Cloths in Pre-Op Bathing

Appraised by:
Holly Reinert, RN (Mayville State University RN-to-BSN student) Midge Birkholz, RN (Mayville State University RN-to BSN student) Tiffany McManus, RN (Mayville State University RN-to-BSN student)

Clinical Question:
In pre-operative patients, is the use of chlorhexidine gluconate (CHG) impregnated cloths in pre-operative bathing more effective in preventing surgical site infection (SSI) than bathing alone?

Articles:
Berrios-Torres, S. I., Umscheid, C. A., Bratzler, D. W., Leas, B., Stone, E. C., Kelz, R. R.,…Schecter, W. P. (2017). Center for Disease Control and Prevention guideline for the prevention of surgical site infection, 2017. *JAMA Surgery, 152*(8), 784-791. doi: 10.1001/jamasurg.2017.0904

Edmiston, C. E., Okoli, O., Graham, M. B., Sinski, S., & Seabrook, G. R. (2010). Evidence for using chlorhexidine gluconate preoperative cleansing to reduce the risk of surgical site infection. *AORN Journal, 92*(5), 509-518. doi:10.1016/j.aorn.2010.01.020

Graling, P. R., & Vasaly, F.W. (2013). Effectiveness of 2% CHG cloth bathing for reducing surgical site infections. *AORN Journal, 97*(5), 547-551. doi:10.1016/j.aorn.2013.02.009.

Synthesis of Evidence:
Edmiston et al. (2010) recognized that surgical site infections (SSIs) are the third most frequently reported type of health care associated infection and are a cause for increased morbidity and mortality. It is recognized that there are many factors that can increase the risk for SSI and the practice of pre-operative antiseptic bathing is one intervention that can aid in risk reduction. Chlorhexidine gluconate (CHG) can rapidly reduce transient and resident bacteria levels as well as suppress rebound bacterial growth for six hours post-application (Edmiston et al., 2010). CHG is also not inactivated by blood or serum and has a low incidence of hypersensitivity. Edmiston et al. (2010) concluded that there is literature that supports the use of CHG in a standardized, timed process prior to surgery to reduce the risk of post-operative SSI.

Graling and Vasaly (2013) reviewed the effectiveness of pre-operative bathing with chlorhexidine gluconate (CHG) cloths for reducing surgical site infections (SSIs) and found a statistically significant overall reduction of infection in the group that received a 2% CHG bath before surgery. Graling and Vasaly (2013) also looked at the cost of providing a pre-operative CHG 2% cloth ($5) and cost of nursing to do the brief education on the use of the cloth ($2) for a total of $7 to prevent a serious post-operative infection versus the cost of a post-surgical infection ($3000 to $29,000 in 1999). It was concluded that pre-operative bathing protocols should be in place with 2% CHG cloth for patients undergoing general and vascular surgery, and possibly all other types of surgeries as well (Graling & Vasaly, 2013).

Berrios-Torres et al. (2017) discusses using an antimicrobial soap, antiseptic, or non-antimicrobial soap the night before surgery. The cost to treat a surgical site infection (SSI) continues to rise in the United States. Approximately half of SSIs are preventable using evidence-based strategies. This article demonstrated that the use of bathing pre-operatively is effective in preventing SSIs.

Bottom Line:
It is concluded that that pre-operative bathing with chlorhexidine gluconate (CHG) decreases the incidence of surgical site infections (SSIs) postoperatively. CHG is effective against both gram-negative and gram-positive bacteria and continues to resist rebound bacteria for six hours post application. The only contraindication noted in our research for the use of CHG is if the patient has a known allergy to CHG, otherwise the risk is minimal and the benefits considerable. An SSI is not only very costly to the medical institution, but in some cases have long lasting sequala for the patient or even result in patient mortality. A medical facility that performs surgical procedures and are not currently using a CHG pre-operative cleansing regime, should review the literature and research and consider implementing CHG pre-operative cleansing as a part of their pre-surgical regime.

Implications for Nursing Practice:
Education is extremely valuable when it comes to preventing surgical site infections (SSIs). Therefore, nurses must educate patients about the importance of pre-operative bathing with chlorhexidine gluconate (CHG) impregnated cloths as well as the proper procedure for doing so. When patients aren't properly educated, the risk for infection will increase. Infections are expensive in time and money, not only for the facility, but for the patient as well. The nurse should build rapport and have a positive impact with patients to aid in the prevention of SSIs and apply evidenced-based practice related to SSI reduction. Education, communication, evidence-based research, and trust are key factors in the prevention of SSIs.

Bariatric Surgery

Appraised by:
Ashley Miller, RN, Mayville State University RN-to-BSN student, Jordan Burgau, RN, Mayville State University RN-to-BSN student, Jennie Sampson, RN, Mayville State University RN-to-BSN student

Clinical Question:
When treating middle aged adults who have a BMI of 30 or greater with bariatric surgery to aid in weight loss, how does it compare to weight loss with diet and regular exercise alone in the time frame of 10+ years?

Articles:
1 Adams, T. D., Davidson, L. E., Litwin, S. E., Kim, J., Kolotkin, R. L., & Nanjee, N., Gutierrez, J.M., Frogley, S.J., Ibele, A.R., Brinton, E.A., Hopkins, P.N., McKinlay, R., Simper, S.C., Hunt, S.C. (2017). Weight and metabolic outcomes 12 years after gastric bypass. *The New England Journal of Medicine, 377*(12), 1143-1155. doi:10.1056/NEJMoa1700459

2 Bond, D., Phelan, S., Leahey, T., Hill, J., Wing, R., Bond, D. S., & ... Wing, R. R. (2009). Weight-loss maintenance in successful weight losers: Surgical vs non-surgical methods. *International Journal of Obesity, 33*(1), 173-180. doi:10.1038/ijo.2008.256

3 Bond, D., Unick, J., Jakicic, J., Vithiananthan, S., Trautvetter, J., O'Leary, K., Wing, R. (2012). Physical activity and quality of life in severely obese individuals seeking bariatric surgery or lifestyle intervention. *Health and Quality of Life Outcomes*. doi:10.1186/1477-7525-10-86

4 Colquitt, J. L., Pickett, K., Loveman, E., & Frampton, G. K. (2014). Surgery for weight loss in adults. *The Cochrane Library, (8)*, 1-243. doi:10.1002/14651858.CD003641.pub4

Synthesis of Evidence:
Four different research articles were taken into consideration to help answer the question of the long-term benefits of surgical vs nonsurgical interventions for weight loss maintenance. Our research was focused on the weight loss maintenance aspect only, however other factors have since proven a need to be considered. Two of the studies looked at patients who underwent bariatric surgery and the other two studies compared a group who underwent bariatric surgery with a group who used only diet and exercise as a weight loss method. Personal interviews, health assessments, and physical measurements were done at baseline, again at set time intervals, and finally at conclusion of the studies. The time range of the studies varied from one year to 12 years, with the average time span being two years. All studies had large, controlled participation groups, however, not all groups involved a diverse sample. Each participant in these studies was required to have a body mass index (BMI) that classified them as at least obese, typically 35-45, and were not actively attempting to lose weight. The first study, which was also the longest, showed that after 12 years the surgical group maintained an average weight loss of 35 kg while the nonsurgical group maintained only 1 kg.[1] The second research article was a review of seven different studies. These studies ranged from one year to 10 years, with the average being two years. The collection of studies concluded that those that underwent bariatric surgery had a significant decrease in BMI long-term, although the specific numbers were not available. The study claimed that surgery had slightly better results in weight loss maintenance but lifestyle interventions still proved to be successful in keeping weight off.[4] The third study had limited data on the weight loss differences. However, in terms of long-term maintenance it showed that the weight regain was about the same in both groups. Both groups had a 2 kg weight gain over two years. Compared to the weight lost, the weight re-gain was insignificant.[2] The fourth and final study had the smallest group sizes of all the studies but were still appropriate for research. This study also concluded that although the initial weight loss favored on the side of bariatric surgery, the long-term weight regain was about even.[3] All articles indicated the need for more research as limited studies have been done on these interventions and for a longer range of time. Also, a need for a more diverse sample was mentioned in some of the studies. Another thing to consider would be the risk and benefits of the interventions. The articles' involving bariatric surgery also mentioned complications or effects the weight loss had on illness, such as hypertension and diabetes.[4] These factors may need to be considered in addition to maintaining weight loss when determining which intervention is appropriate.

Bottom Line:
It was concluded that both bariatric surgery and diet and exercise prove to be successful ways to maintain weight loss. Bariatric surgery showed slightly more success throughout the studies, however, the difference in results are insignificant and there were also many reports of surgical complications. Diet and exercise can be considered a successful intervention without complications and continues to be a good recommendation for obese patients, however, more research is needed on this subject as there is limited literature available.

Implications for Nursing Practice:
It is important for nurses to educate patients on the need for regular physical activity combined with a healthy, and balanced diet. The obese population is a large consumer of the healthcare system and nurses need to be aware of correct education practices to encourage as well as care for those patients during the weight loss experience.

North Dakota Nurses: Our Voices and Our Votes Matter

Mary K. Wakefield PhD, RN, FAAN

Grand Forks, ND

Decades ago, then NDNA Executive, Betty Maher helped me to land a job in Washington, D.C. with North Dakota Senator Quentin Burdick. At the time, there were very few nurses working in health policy on capitol hill. When I later became Burdick's chief of staff, there was only one other nurse in a similar position in the United States Senate. Helping me to get my start, Betty told the Senator that having a nurse on his team would bring important expertise about health and health care. Then, and now, nurse's expertise across our state make a difference to the health of thousands of individuals and families. Betty also told the Senator that one in 44 voters was a nurse. I don't know the proportion of voters that nurses comprise today but I do know that nurses make a difference to the health of thousands of North Dakotans when, as the American Nurses Association urges, they support candidates for elective office "who are proven to be advocates for nurses and their patients"(1). In the upcoming November election, there are critically important differences between ND candidates running for office and these differences will have a major impact on the health of our patients, friends, neighbors and family members, as well as on the economic health of hospitals and other health settings where nurses practice.

THE CRITICAL POLICY ISSUE

Currently, federal law requires insurance companies to offer coverage to everyone, regardless of their health status. This protection covers people with illnesses today as well as those of us who in the future develop conditions such as cancer, hypertension, or diabetes. All of us benefit from this guarantee. Unfortunately, efforts are underway to roll back this and other critically important protections. A lawsuit being heard in a federal court in Texas introduces a major threat to health insurance protections that thousands of North Dakotans rely on. If the lawsuit is successful, these North Dakota families will lose their insurance coverage and more will lose access to coverage in the future. Additionally, North Dakota health care facilities will accrue millions of dollars of unpaid bills for care given to patients who lost coverage. If this lawsuit prevails, there is no new law that will protect both North Dakotans and the financial health of our state's health care institutions. Currently, some candidates for elective office support this devastating lawsuit. Other candidates oppose it. It is critically important that nurses know the positions of candidates and the impact the lawsuit will have on the health of our state.

IMPACT ON THE HEALTH OF NORTH DAKOTANS

The lawsuit eliminates many health related protections that North Dakotans depend on. Currently, federal law requires health insurance companies to offer everyone insurance coverage and companies cannot charge more for health insurance to individuals who have health conditions like cancer, asthma, or cystic fibrosis. The law created a level playing field for everyone and eliminated the ability of insurance companies to use a person's health status against them by denying coverage or charging them astronomical amounts for that coverage. Before the Affordable Care Act (ACA), it was not at all uncommon for insurance companies to refuse to issue health insurance or to charge sky high prices to individuals with health conditions. These protections help the patients we care for every day and protect each of us should we develop an illness. Historically, insurance companies could also put annual or lifetime caps on what they would pay out; often resulting in families losing coverage at the very time when they needed it the most. For example, infants born with congenital heart defects may require multiple surgeries, the costs of which can run in the hundreds of thousands of dollars or more. Currently their families are protected. If the lawsuit is successful, all of this changes and the piece of mind and affordability that families currently have to ensure their loved ones are able to access preventive and other health care goes away. If the lawsuit, supported by some candidates for political office prevails, all of us return to the day when insurance companies are in the driver's seat and again able to discriminate against people with health conditions. It should come as no surprise that in a recent national Kaiser poll, a majority of Republicans, Democrats and Independents support the continuation of these protections for people with pre-existing health conditions.

In addition, if the lawsuit is successful, 47,000 North Dakotans will lose their health insurance coverage. First, the lawsuit would end the requirement that insurance companies allow young adults to be covered through their parents' plans until age 26. Currently, about 7,000 young North Dakotans benefit from this requirement. This guarantee would disappear. Secondly, about 20,000 North Dakotans would immediately lose their coverage now available through North Dakota's expansion of the Medicaid program. This expansion, allowed by the ACA, and passed by ND's state legislature with support from both Democrats and Republicans would disappear. And third, another 20,000 North Dakotans purchase health insurance coverage through the Exchange that was established by the ACA would be impacted. They too, will lose this coverage.

This lawsuit will have devastating repercussions not just in North Dakota but across the nation. A recent study by the Urban Institute found that about 17 million Americans will lose coverage if this lawsuit is successful. By any nurse's estimation, this would be a tragedy. Most nurses have seen how devastating it can be when health care comes too late for people with illnesses that could have been prevented or managed so much better, had they just been treated more quickly. Nurses know the research is clear, being uninsured is associated with a higher rate of morbidity and mortality. In other words, having insurance does mean the difference for many between life and death and health and illness.

IMPACT ON HEALTH CARE IN NORTH DAKOTA

The lawsuit would be most harmful for our state's rural communities. Rural families tend to have higher rates of chronic conditions and also greater dependence on Medicaid than urban families. As rural providers would once again be expected to absorb the cost of delivering care to thousands of individuals unable to pay out of pocket for their care, their financial viability becomes even more tenuous. For example, 87 rural hospitals have closed across the nation in the last few years. 90 percent of these closures occurred in states that did not expand Medicaid. The majority of these closures were due to financial reasons. Consequently, it's no surprise that hospitals and other providers strongly oppose this lawsuit that could limit their ability to offer or expand services, hire staff or potentially even trigger their closure. Recently, the ND Rural Health Association issued a strongly worded letter stating "Should the Medicaid Expansion and the protections provided by the ACA be stripped away, thousands of North Dakotans will be placed at risk…In states that expanded Medicaid, people residing in rural areas saw better health outcomes such as catching cancer early….It is clear that the ACA and Medicaid expansion strengthened rural health care… lawmakers and government officials (should)…keep these crucial protections that are so important to our rural communities." (North Dakota Rural Health Association, 2018).

Additionally, national organizations like the American Nurses Association, the American Public Health Association, American Heart Association, American Diabetes Association and major national physician associations have all expressed grave concerns about the adverse impact this lawsuit will have on the health of millions of Americans, including thousands of North Dakotans.

In November, each ND nurse should know where candidates for elective office stand on this devastating lawsuit and keep this in mind when you cast your vote. For example:

U.S. Senate Candidates
Kevin Cramer supports lawsuit
Heidi Heitkamp opposes lawsuit

U.S. House of Representatives Candidates
Kelly Armstrong supports lawsuit
Mac Schneider opposes lawsuit

The health and health care of North Dakotans should not be decided in a Texas courtroom. Yet that is what is happening right now.

1. ANA Capitol Beat, (August 29,2018)

Does PPE Prevent the Transmission of MRSA Infections?

Appraised by:
Lesley Butze, RN; Brandi Peck, RN; and Rachelle Yost, RN (Mayville State University RN-to-BSN Students)

Clinical Question:
The research question: Does the use of PPE prevent the transmission of MRSA infections for patients in healthcare facilities, reviews the use of personal protective equipment and how it prevents the transmission of MRSA infections for patients in healthcare facilities. This PICO topic was formulated to determine if the use of gowns and gloves decreases the spread of MRSA.

Articles:

Chang, H. H., Dordel, J., Donker, T., Worby, C. J., Feil, E. J., Hanage, W. P., Lipsitch, M. (2016). Identifying the effect of patient sharing on between-hospital genetic differentiation of methicillin-resistant Staphylococcus aureus. *Genome Medicine, 8*(18), 1-10. https://doi.org/10.1186/s13073-016-0274-3

Hughes, C., Tunney, M., & Bradley, M. C. (2013). Infection control strategies for preventing the spread of methicillin-resistant Staphylococcus aureus (MRSA) in nursing homes for older people. *Cochrane Database of Systematic Reviews*, 1-20. doi.org/10.1002/14651858.CD006354.pub4

Marshall, C., Richards, M. & McBryde, E. (2013). Do active surveillance and contact precautions reduce MRSA acquisition? A prospective interrupted time series. *PLOS ONE, 8*(3), 1-9 doi:10.1371/journal.pone.0058112

Plipat, N., Spicknall, I. H., Koopman, J. S., & Eisenberg, J. N. (2013). The dynamics of methicillin-resistant Staphylococcus aureus exposure in a hospital model and the potential for environmental intervention. *BMC Infectious Diseases, 13*(595), 1-25. doi.org/10.1186/1471-2334-13-595

Synthesis of Evidence:
Our team evaluated 12 articles looking for effectiveness of PPE to prevent the transmission of MRSA in healthcare settings. These were chosen based on content pertaining to our topic in the last five years. The goal was to use these recent studies to conclude if PPE is necessary to prevent the spread of MRSA infections in healthcare facilities.

The first study by Chang, Dordel, Donker, Worby, Feil, Hanage, and Lipsitch (2016) objective was how Methicillin-resistant Staphylococcus aureus (MRSA) patient sharing and transmission used "genome sequencing data of 986 MRSA regional isolates to study MRSA transmission within and between hospitals and between hospitals and their surrounding community" (Chang et al., p.7). The study utilized genetic differentiation as it has been suggested that the cloud of diversity is a major issue in identifying person-to-person transmission links.

The second study by Marshall, Richards, McBryde (2013) discusses a quasi-experimental study that was conducted on determining the transmission of MRSA in patients with active MRSA infections. They began with swabbing all the patient's nares, groins, underarms and throat to classify which patients were already infected and which ones were not. Patients with open draining wounds were treated per protocols to prevent spreading MRSA. The study suggests "there was a 60% reduction in transmission of MRSA in colonized patients when contact precautions and isolation (single patient rooms) was implemented" (Marshall, Richards & McBryde, 2013, p.8).

The third study by Hughes, Tunney, and Bradley (2013) objective was the transmission of MRSA pathogens in elderly patients residing in long term care was performed utilizing randomized controlled trials (RCTs), including cluster-randomized trials where the unit of randomization was used to gauge interventions such as barrier precautions, hand and environmental hygiene (Hughes, Tunney, and Bradley). The study suggests hand hygiene was acknowledged as the most important activity for reducing the spread of infection.

The fourth study by Plipat, Spicknall, Koopman, and Eisenberg (2013) objective related to a research project on MRSA transmission that studied the relation of MRSA positive patients and the connection to shedding of MRSA pathogens in to the environment. According to this study, "simulations show 70% of the contamination of the healthcare worker, while in the colonized patient's room, came through the indirect exposure route. Of this, 66% resulted from touching the nonporous surface rather than the porous surface" (Plipat, Spicknall, Koopman, and Eisenberg, p. 8).

Bottom Line:
Employee compliance with handwashing and proper cleaning techniques is an essential component in decreasing the transmission of MRSA infections. Although, according to data gathered through research studies, it is likely that the prevention of transmitting MRSA is significant with the use of PPE. Research strongly suggests that the proper use of PPE has decreased the number of pathogens being transmitted within the healthcare facilities.

Implications for Nursing Practice:
Healthcare workers need to be aware that PPE does not completely eliminate the risk of transmission of MRSA. It is critical that it be used appropriately at all times to achieve optimal effectiveness. Contact precautions are an important part of infection control in healthcare facilities; it is important that staff receives proper PPE training to minimize the transmission of MRSA. Compliance has been shown to be a key factor in decreasing the transmission of pathogens in healthcare facilities, this requires continued education and proficiency by healthcare workers.

Dissemination-Sepsis

Appraised by:
Kristin Lee, RN, Mayville State University RN-to-BSN student, Jessica Andrews, RN, Mayville State University RN-to-BSN student, and Honorine Nyama, RN, Mayville State University RN-to-BSN student

Clinical Question:
In patients with sepsis, how does recognition at the septic stage compared to recognition at the severely septic stage impact patient mortality?

Articles:

Aquino, R., Inacio, A., DiogoFilho, A., & Araújo, L. (2017). Sepsis in patients with severe acute renal injury. *Journal of Nursing UFPE online, 11*(12), 4845-4853. doi:https://doi.org/10.5205/1981-8963-v11i12a23142p4845-4853-2017

Karnatovskaia, L. V., & Festic, E. (2012). Sepsis: A review for the Neurohospitalist. *The Neurohospitalist*, *2*(4), 144–153. http://doi.org/10.1177/1941874412453338

Shijie, L., Haijun, C., Xiangdong, X., Haipeng, S., Shaoxia, Q., & Yunbo, S. (2017). Predictive value of early lactate dynamic monitoring index in prognosis of sepsis and septic shock patients. *Biomedical Research (0970-938X), 28*(22), 9718-9721.

Umberger, R., Callen, B., & Brown, M. L. (2015). Severe Sepsis in Older Adults. *Critical Care Nursing Quarterly, 38*(3), 259-270. doi:10.1097/cnq.0000000000000078

Synthesis of Evidence:
Sepsis is a life-threatening condition that arises when the body's response to an infection injures its own tissue and organs. Sepsis can lead to shock, multiple organ failure and death especially if not recognized early and treatment started promptly. Sepsis remains the primary cause of death from infection despite advances in modern medicine, including vaccines, antibiotics and acute care (Shijie et al., 2017). Millions of people worldwide die of sepsis every year. Thus, controversies have been raised among healthcare workers as to how to handle patients with sepsis. As a result, the following PICO question was formulated to further research this topic: In patients with sepsis, how does recognition at the septic stage compared to recognition at the severely septic stage impact patient mortality? The information was gathered from eight research articles, which were critically reviewed and summarized to conclude findings to support the PICO research topic. Four articles narrowed down the following important pieces of information:

- Sepsis is a serious recurring problem in hospital environments, especially, in the highly complex sectors, such as Intensive Care Units (Aquino et al., 2017)
- The Surviving Sepsis Campaign recommends fluid resuscitation with either colloids or crystalloids, as there is no evidence-based support for one type of fluid over another (Karnatovskaia, & Festic, 2012).
- To be diagnosed with sepsis it is required that at least two of the four SIRS criteria; temperature, heart rate, respiratory rate, and white blood cell count are met, and that there is a suspected or identified infection (Umberger, Callen, & Brown, 2015).
- A study was done that included 51 patients, 51% of whom obtained vasopressor independence at 24 hours, 10% died at 28 days, 26% was not associated with vasopressor independence, but was associated with 28-day mortality (Tang et al., 2017). This study targeted patients admitted to a Shock Trauma ICU and a Respiratory ICU at one hospital (Tang et al., 2017). All were 15 years of age or older, had severe sepsis or septic shock on admission, had an arterial catheter, and were in sinus rhythm (Tang et al., 2017). The first five minutes of arterial blood pressure was used from each patient (Tang et al., 2017). A filtering technique was used to obtain a systolic blood pressure from every heartbeat (Tang et al., 2017). Vasopressor dependence at 24 hours increased chances of 28-day mortality (Tang et al., 2017).

Bottom Line:
Studies show that regardless of which stage sepsis is recognized at, treatment is the same. This includes fluid resuscitation, antibiotics, and close monitoring of vital signs, lactic acid levels, and lactate ratios. Patient mortality gets higher the more severe the stage, the higher the lactic acid level is, the higher the lactate ratio is, and in patients with intra-abdominal and respiratory infections.

Implications for Nursing Practice:
Nurses should engage in researching this topic to become more knowledgeable on the potential risks and best treatment for sepsis because sepsis is a real threat to patients of all ages. Although much research has been done to improve recognition and the treatment of sepsis, high mortality rates still remain. Early recognition by patients and healthcare staff is key to successful recovery. Nursing staffs are a patient's first point of contact. It's important that nurses are educated on sepsis and how to recognize this in their patients. They must also keep current on updated information as further research uncovers new treatments, signs and symptoms, and prevention. Another key to early recognition and treatment is patient recognition. Nursing education on signs and symptoms to watch for is vital in helping patients recognize early signs of sepsis at home.

NDBON, NDNA and NDCFN: What's the Difference?

There is some confusion regarding the differences between the North Dakota Board of Nursing (NDBON), the North Dakota Nurses Association (NDNA) and North Dakota Center for Nursing (NDCFN). Hopefully, the following will help clarify some of the confusion.

A COMPARISON OF THE THREE ORGANIZATIONS

North Dakota Board of Nursing (NDBON)	**North Dakota Nurses Association (NDNA)**	**North Dakota Center for Nursing (NDCFN)**
919 S 7TH Street, Suite 504 Bismarck, ND 58504-5881 Phone: (701) 328-9777 Fax: (701) 328-9785	1515 Burnt Boat Dr, Suite C #325 Bismarck, ND 58503 Phone: (701) 335-6376 E-mail: Director@ndna.org Website: www.ndna.org	3523 45th Street South Fargo, ND 58104 Phone: (701)639-6548 Website: www.ndcenterfornursing.org
Mission: *ND Board of Nursing assures North Dakota citizens quality nursing care through the regulation of standards for nursing education, licensure, and practice.*	***Mission:*** *NDNA promotes the professional development of nurses, and advances the identity and integrity of nursing to enhance healthcare for all through practice, education, research, and development of public policy.*	***Mission:*** *The mission of NDCFN is through collaboration guide the ongoing development of a well-prepared and diverse nursing workforce to meet health care needs in North Dakota through research, education, recruitment and retention, advocacy and public policy.*
Description: • Governmental regulatory body established by state law under the North Dakota Century Code 43-12.1 Nurse Practices Act to regulate the practice of nursing and protect the health and safety of the public • Regulates the practice of individuals licensed and registered by the Board • Establish standards of practice for RNs, LPNs, and APRNs • Establish standards and regulate nursing education programs • Discipline licensees and registrants in response to violations of the Nurse Practices Act	***Description:*** • 501(c)6 non-profit association • Professional Association for Registered Nurses. • Constituent member of the American Nurses Association (ANA) • Influences legislation on health care policies and health issues and the nurse's role in the health care delivery system • Promotes the continuing professional development of Registered Nurses • Advances the identity and integrity of the profession to enhance healthcare for all through practice, education, research, and development of public policy • Promotes the Scope and Standards of Nursing Practice and the Code of Ethics for Nurses	***Description:*** • 501c3 non-profit organization • All nurses and over 40 nursing organizations, education programs, grant programs, state agencies and other stakeholders are members and are invited to volunteer on ND Center for Nursing Leadership Team. • Works to unify voice of nursing in North Dakota through connecting nursing organizations interested in policy issues. • Develops statewide programming to fulfill mission across multiple areas including nursing education faculty and resources, workplace planning, research and development and practice and policy. • Tracks supply, demand and education of nursing workforce.

Board Members:	***Board of Directors:***	***Board of Directors: 13 organizations represented. List available on website at:*** http://www.ndcenterfornursing.org/board-of-directors/
Jane Christianson, RN member, Bismarck: *President* Michael Hammer, RN member, Velva: *Vice President* Jamie Hammer, RN member, Minot: *Treasurer* Tanya Spilovoy, Public Member, Bismarck Janelle Holth, RN member, Grand Forks Mary Beth Johnson, RN member, Bismarck Bonny Mayer, LPN member, Minot Wendi Johnston, RN member, Kathryn	President - Tessa Johnson, MSN, RN president@ndna.org Board of Directors listed at https://ndna.nursingnetwork.com/page/72991-board-of-directors	
NDBON Staff:	***NDNA Independent Contractor:***	***NDCFN Staff:***
Stacey Pfenning, DNP, APRN, FNP FAANP-Executive Director-spfenning@ndbon.org Tammy Buchholz, MSN, RN-Associate Director for Education-tbuchholz@ndbon.org Melissa Hanson, MSN, RN-Associate Director of Compliance-mhanson@ndbon.org Pat Hill, BSN, RN, Assistant Director-Compliance/Practice-phill@ndbon.org Julie Schwan, Administrative Service Coordinator-jschwan@ndbon.org Gail Rossman, Technology Specialist II-grossman@ndbon.org Kathy Zahn, Administrative Assistant-kzahn@ndbon.org Sally Bohmbach, Administrative Assistant II-bohmbach@ndbon.org	Sherri Miller BSN, RN Executive Director Director@ndna.org	Patricia Moulton, PhD Executive Director Patricia.moulton@ndcenterfornursing.org Kyle Martin, BS Associate Director Kyle.martin@ndcenterfornursing.org

Smoker Compared to Non-Smoker Rates After Myocardial Infarction

Appraised by:
Michelle Neuschwander, RN; Chad Schiltz, RN; Deborah Ertl, RN & Tonia Olson, RN (Mayville State University RN-to-BSN students)

Clinical Question:
In patients who have experienced an acute myocardial infarction, how does being a smoker compared to a non-smoker influence death and infarction rates during the first five years after the myocardial infarction?

Articles:

Bacaksiz, A., Kayrak, M., Vatankulu, M. A., Ayhan, S. S., Sonmez, O., Akilli, H.,... Ozdemir, K. (2013). The effect of smoking on myocardial performance index in middle-aged males after first acute myocardial infarction. *Echocardiography, 30*(2), 155-163. doi:10.1111/echo.12029

Barth, J., Jacob, T., Daha, I., Critchley, J.A. (2015). Psychosocial interventions for smoking cessation in patients with coronary heart disease. *Cochrane Database of Systematic Reviews 2015. (7).* doi:10.1002/14651856.pub2.

Gupta, T., Kolte, D., Khera, S., Harikrishnan, P., Mujib, M., Aronow, W. S.,…Panza, J. A. (2016). Smoker's paradox in patients with st-segment elevation myocardial infraction undergoing primary percutaneous coronary intervention. *Journal of the American Heart Association, 5*(4). https://doi.org/10.1161/JAHA.116.003370

Shemirni, H., Dehghani, F. T., & Amirpour, A. (2014). Comparison of no-reflow phenomenon after percutaneous coronary intervention for acute myocardial infarction between smokers and nonsmokers. *Journal of Research in Medical Sciences, 14*(19), 1068-1072.

Synthesis of Evidence:
Our goal for this PICO question was to use recent studies within the past 10 years to assess whether smokers compared to nonsmokers have better outcomes and less ongoing or repeated adverse cardiac events after an acute myocardial infarction, including the explanation of the "smokers paradox." Smoking is a risk for acute myocardial infarction, coronary artery disease and death, and is a preventable risk factor. Our PICO question correlates with nursing as nurses can assist in secondary prevention measures and education in health promotion. Nurses also play a role in incorporating patient involvement in smoking cessation programs and the benefits of smoking cessation related to cardiovascular health. Our group reviewed a total of 16 articles looking to find any comparisons between the mortality rate of non-smokers to smokers after an acute myocardial infarction. Four of our articles were found to have significant evidence regarding our question to come to our conclusion.

In the first study by Bacaksiz et al. (2013), two groups of participants, smokers and nonsmokers were studied in relevance to death rates and coronary artery disease (CAD) rates after a first acute (ST elevation) myocardial infarction. The study was done by using an index called Myocardial Performance Index (MPI), a non-invasive assessment of diastolic and systolic performance with focus on left ventricular (LV) function using echocardiography. This index was completed after reperfusion and revascularization procedures were completed. The study was over a five-year period from September of 2006-January of 2012 with a sample of 429 middle-aged males from 40-65 years of age of which 325 were smokers and 104 nonsmokers. Although smoking is an avoidance risk factor for CAD, myocardial infarction and death, the study indicates that nonsmokers compared to smokers had prolonged diastolic and systolic diastolic and systolic parameters indicating higher MPI's of (>0.60) showing decreased left ventricular function. A higher MPI however, does help to identify high risk patients and a predictor of cardiac events. Explanations for smoker's paradox that is associated with the study point towards younger age, fewer comorbidities, decreased atherosclerotic plaque and success with early reperfusion of infarcted artery. Smokers that cease or decrease intensity of smoking had fewer adverse events and improved survival rates (Bacaksiz et al., 2013).

The second study by Gupta et al. (2016), was a randomized cohort study conducted between 2003-2012 with data collection from a national public database, where both female and male patients who met the criteria of over the age of 18 who have not undergone thrombolysis, and were smokers, non-smoker, and former smokers with a primary diagnosis of STEMI (ST-segment elevation myocardial infarction) undergoing primary percutaneous coronary interventions. This study detailed the concept of the smoker's paradox which implies that patients who smoke have a better outcome than non-smokers after acute myocardial infarction. It was determined that smokers were an average of eight years younger than non-smokers and had lower rates of in-hospital mortality and shorter hospital stays than non-smokers. Smokers were less likely to have atrial fibrillation, congestive heart failure, diabetes, hypertension, and chronic renal failure, but smokers were noted to be more likely to have had prior myocardial infarctions, a history of drug and alcohol abuse, coronary artery disease, and chronic pulmonary disease (Gupta et al., 2016).

The third study by Shemirni, Dehghani, and Amirpour (2014) was a cohort study of 141 patients admitted between March and September 2012 with a diagnosis of STEMI (ST-segment elevation myocardial infarction) to the Chamran Hospital with the chest pain lasting for 20 minutes or more and associated with ECG changes. The study focused on the no-reflow phenomenon between smokers and nonsmokers after having a percutaneous coronary intervention performed. No-reflow, which is defined as the reduced coronary reperfusion without an obstruction, dissection, or spasm, was deemed a major problem in patients with STEMI and is correlated with morbidity and mortality in acute myocardial infarction (MI). The study concluded that there were no significant complications between current smokers and nonsmokers in the no-reflow phenomenon, but findings did suggest the smoker's paradox, which is suggested that smokers have a better outcome after a MI than nonsmokers (Shemirni, Dehghani, and Amirpour, 2014).

The fourth study by Barth et al. (2015), used 40 randomized control trials conducted by assessing studies from 2003, 2008, and 2013. Data was independently extracted by two researchers assessing trial eligibility and risk of bias. Risk ratios were pooled using the Mantle-Haenszel and random effects model with 95% (CI), to determine if a variety of interventions used for smoking cessation were effective short-term, long-term, or not at all. Quality indicators used: Allocation concealment; sequence generation; completeness of subject outcome data; and validation of smoking status. Types of participants, interventions, and intervention strategies: Patients with a diagnosis of coronary heart disease and length of follow-up; Separate psychosocial intervention focused mainly on smoking cessation or a more comprehensive cardiac rehabilitation program; and behavioral therapy; phone support; self-help education; and multi-risk factor interventions. Smoking cessation is always recommended and psychosocial smoking cessation interventions have been proven to help patients stop smoking if they are provided for over six months (Barth et al., 2015). Studies used a mixture of different intervention strategies, therefore no single intervention showed superior efficacy (Barth et al., 2015).

Bottom Line:
It is noted in our research findings that smoking is a risk in general for CAD and acute coronary syndrome (ACS) especially if smoking is continued. Smokers tend to have less nonfatal MI's and other adverse cardiac events than nonsmokers due to the fact of being a younger age, less comorbidities and lesser atherosclerotic affect with health risks than nonsmokers. Smokers also have a decreased chance of having a recurrent MI as long as they change prior health habits.

Implications for Nursing Practice:
Nurses should continue to promote smoking cessation at all times in patient care settings, despite the idea of a smoker's paradox. Smoking will always be detrimental to a patient's health and lead to death at some stage in life. Nurses should use this research information for patient education purposes, as patient's find research, studies, and facts more appealing than suggestions and opinions of their health. Nurses can use this research in their practice of patient assessment and understanding of co-morbidities, and in secondary prevention measures.

Do you serve on a board?

The Nurses on Boards Coalition (NOBC) represents national and state efforts by nurses and others working to build healthier communities in America. Our goal is to improve the health of communities and the nation through the service of nurses on boards and other bodies. The key strategy of the NOBC is to increase nurses' presence and influence on corporate, health-related, and other boards, panels, and commissions. The Coalition's intent is to ensure that at least 10,000 nurses are on boards by 2020, as well as raise awareness that all boards would benefit from the unique perspective of nurses to achieve the goals of improved health and efficient and effective health care systems at the local, state, and national levels.

Please visit **www.nursesonboardscoalition.org** to :

- **Be Counted:** Register your current board service or interest in serving
- **Access Resources:** Materials and tools to help prepare and support nurses on boards
- **Share Your Story:** Complete "The Reason I Serve" Survey

Thank you for your nursing leadership and all you serve!

CPR: Hands-Only Versus Hands Plus Breathing

Appraised by:

Adrianna Alcorn, RN; Brittney Slater, RN; & Pierce Foss, RN (Mayville State University RN-BSN Students)

Clinical Question:

In community dwelling adults, how effective is hands-only CPR versus hands plus breathing CPR at preventing mortality?

Articles

Ahmed, S. M., Garg, R., Divatia, J. V., Rao, S. C., Mishra, B. B., Kalandoor, M. V., Singh, B. (2017). Compression-only life support (COLS) for cardiopulmonary resuscitation by layperson outside the hospital. *Indian Journal of Anesthesia, 61*(11), 867-873. doi:10.4103/ija.IJA_636_17

Circulation Society Resuscitation Science Group. (2013, October 25). Chest-compression-only bystander cardiopulmonary resuscitation in the 30:2 compression-to-ventilation ratio era. doi:10.1253/circj.CJ-13-0457

Dobbie, F., MacKintosh, A. M., Clegg, G., Stirzaker, R., & Bauld, L. (2018). Attitudes towards bystander cardiopulmonary resuscitation: Results from a cross-sectional general population survey. *PLoS ONE, 13*(3), e0193391. doi:10.1371/journal.pone.0193391

Rae, T., Bloomingdale, M., Culley, L., Donohoe, R., Eisenber, M., Fahrenbruch, C., Hambly, C., Innes, J., Romines, S. Subido, C. (2010). CPR with chest compression alone or with rescue breathing. *The New England Journal of Medicine*, 363:423-433. doi:10.1056/NEJMoa0908993.

Zhan, L., Yang, L., Huang, Y., He, Q., & Liu, G. (2017, March). Continuous chest compression versus interrupted chest compression for cardiopulmonary resuscitation of non-asphyxial out-of-hospital cardiac arrest. *Cochrane Database of Systematic Reviews*, 1-47. doi:10.1002/14651858.CD010134.pub2

Synthesis of Evidence:

The goal from this PICO question was to utilize research studies within the past 10 years to find evidence to determine if hands only CPR prevents mortality/increase survival rates versus CPR plus breathing resuscitation efforts. In communities around the United States, cardiac arrest remains a common cause for emergency medical attention. In spite of efficient EMS management, a very low percentage whom suffers a cardiac arrest survive or come out neurologically intact. We utilized 13 research articles to help us determine our answer. As we narrowed down our search, four of the articles found good evidence regarding our question.

The first study by the Circulation Society Resuscitation Science Group's objective was to reach beyond the recent change of standard BLS CPR from 15:2 to 30:2 compression to breath ratio. How it accomplished this was by viewing 173,565 adult cardiac arrests witnessed by bystanders that received dispatcher-assisted CPR instruction. This included CPR with and without rescue breathing. The primary endpoint was favorable neurological outcomes after 30 days for those that obtained return of spontaneous circulation (ROSC). With instruction by dispatch, compression only CPR was accomplished 71.4% of the time versus 56.6% for standard CPR, thus improving neurological outcomes and reduction in heart failure for survival patients. "Rescue breathing provided no neurological benefit in the non-cardiac etiology subgroup" (Circulation Society Resuscitation Science Study Group, 2013).

The purpose of the study by Dobbie et al., (2018) was to relate the importance of education regarding CPR globally for community dwelling adults. There are unexplainable gaps in attempts of resuscitation, even amongst well-developed countries. "Survival from out-of-hospital cardiac arrest (OHCA) varies across the developed world. In 2013, Seattle, USA, had one of the best OHCA survival to discharge from hospital rates at 22%. In contrast resuscitation is attempted for approximately 3000 adults who experience OHCA each year in Scotland with only 6% surviving to hospital discharge" (Dobbie, MacKintosh, Clegg, Stirzaker, Bauld, 2018, p.1-2). The study discovered that even in developed countries such as Scotland with vast available CPR training, only about half of the adult population reports feeling confident regarding administration of CPR. This displays and encourages the importance of education throughout our communities to improve mortality rates.

The study by Rea et al., (2010) is a multicenter, randomized trial of dispatcher instructions to bystanders for performing CPR. The purpose of this study was to determine if dispatcher instructions to bystanders to provide chest compressions alone would result in improved survival as compared with instructions to provide chest compression plus rescue breathing. 981 patients were randomly assigned to receive chest compressions alone and 960 to receive compressions plus rescue breathing. It was observed no significant difference between the two groups in the proportion of patients who survived to hospital discharge (12.5% with chest compressions alone and 11.0% with chest compression plus rescue breathing). However, prespecified subgroup analyses showed a trend toward a higher proportion of patients surviving to hospital discharge with chest compression alone. The results do support a strategy for CPR performed by laypersons that emphasizes chest compressions and minimizes the role of rescue breathing (Rea et al., 2010).

The study by Zhan et al., (2017) looked at randomized and quasirandomized studies in adults and children suffering from non-asphyxial out of hospital cardiac arrest (OHCA) due to any cause. The study compared the effects of continuous chest compression CPR (with or without rescue breathing) with interrupted CPR plus rescue breathing provided by rescuers (bystander or professional CPR providers). The study concluded that bystander compression only CPR along with phone instruction from dispatch increases the survival rate of people, compared with conventional interrupted chest compression CPR plus rescue breathing (Zhan, Yang, Huang, He, & Liu, 2017).

Bottom Line:

Based on our team research we concluded hands-only CPR would increase bystander participation, which will increase mortality/survival rates. However, this does not necessarily mean that CPR with rescue breaths will result in an improved outcome, since it has been discovered more harm can come to victims with untrained CPR personnel performing such a skill. Current recommendations do promote the use of a one step process of hands-only CPR in community dwelling adults to make instructions easier to follow thus increasing participation in a cardiac arrest.

Implications for Nursing Practice:

This topic directly correlates to nursing, specifically public health, as nurses can assist in educating the public on the preferred method of CPR to increase bystander participation. If the general public is educated on what to do in an emergency, the chance of survival for a person in need increases significantly. The importance of hands only in the public is a major health concern. Hands only CPR can save lives if acted upon. This method allows people to feel confident to perform a simple, one-step skill, compressions. Most people who suffer a cardiac arrest are at home, work, or in a public place. The reality of people who step in to help in these circumstances is slim. Every minute's delay in resuscitation of the victim reduces the chance of survival by 7-10% and unfortunately, immediate help is received by only about 46% of people (Ahmed, et al., 2017). If CPR is performed immediately by someone nearby, even compressions only, the chance of survival of the victims can double or triple. Further implications are the skills needed to perform CPR with rescue breathing correctly and safely, which can be difficult to master in nonmedical laypersons. In addition, due to culture beliefs, majority of people are hesitant to perform mouth-to-mouth resuscitation.

National Diabetes Prevention Program (National DPP)

Screen/Test/Refer Adults with Prediabetes to the National DPP –help Prevent Type 2!

Screen those with no symptoms using a CDC Prediabetes Risk Test found here: www.prediabetesnd.org.

Test adults at risk:

- Overweight or obese (BMI ≥25 or ≥23 if Asian) and who have one or more additional risk factors:
  - First-degree relative with diabetes
  - High-risk race/ethnicity
  - History of CVD, low HDL, high triglycerides or hypertension
  - Women with polycystic ovary syndrome
  - Physical inactivity
  - Acanthosis Nigricans
- Women diagnosed with gestational diabetes: lifelong blood glucose testing every three years
- For all people, testing should begin at age 45 years

Refer to a National DPP near you:

- This evidence-based program helps prevent type 2 diabetes, achieving a 5-7% weight loss through physical activity, healthy nutrition choices and stress management.
- For a list of local DPPs, go to: http://www.diabetesnd.org/diabetes-prevention/find-a-lifestyle-coach/

NORTH DAKOTA DEPARTMENT of HEALTH

NDSU NORTH DAKOTA STATE UNIVERSITY

ADVANCE YOUR NURSING CAREER

Choose from educational options that fit your needs.

- With locations in Fargo and Bismarck, North Dakota, the NDSU School of Nursing offers small class sizes, experienced faculty and an excellent value.
- An RN to BSN blended online part-time program provides flexibility to transform your professional practice
- Pre-licensure BSN program — Bismarck and Fargo
- LPN to BSN blended online program
- Doctor of Nursing Practice (BSN to DNP)/Family Nurse Practitioner program — Bismarck and Fargo

NDSU offers programs to part- and full-time students, working professionals and those seeking online educational opportunities.

ndsu.edu/nursing

Nursing Isn't What We Do.
It's Who We Are.

Now Hiring Experienced RNs

- Up to $7,500 sign on bonus for Critical Care RNs
- Up to $5,000 sign on bonus for Med Surg RN
- $750 sign on bonus for CNA/LPN/PCT
- Up to $13,000 retention bonus
- Relocation and temporary housing benefits

We are looking for nurses with **ICU (medical, surgical and cardiac), medical, surgical, emergency** and **cath lab experience** who want to be part of a dynamic and motivated team to make our communities healthier. Supporting your career and outdoor lifestyle in beautiful Fremont County, nestled between the Wind River and Owl Creek mountain ranges.

To apply or view other career opportunities, visit **sagewesthealthcare.com/careers** or call **307.335.6269.**

SageWest HEALTH CARE

We are an equal opportunity employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

your future awaits YOU

Opportunities available in many locations…

- Licensed Practical Nurse
- Registered Nurse
  - Obstetrical
  - Intensive Care
  - Emergency Room
  - Operating Room
  - Medical/Surgical
  - Public Health
- Advanced Practice Nurse
  - Nurse Practitioner
  - Certified Nurse Midwife
  - CRNA
- Supervisory Clinical Nurse

Must possess a current, active, full, and unrestricted license or registration as a professional nurse from a State, the District of Columbia, the Commonwealth of Puerto Rico, or a territory of the United States.

Indian Health Service

Indian Health Service (IHS), is the largest integrated provider of health services for American Indians and Alaska Natives.

Our goal is to raise the health status of the American Indians and Alaska Natives to the highest level and to provide high-quality, client-centered nursing care that is responsive to individual, family and community needs through use of available human and material resources.

IHS Nurses serve a critical role in clinics, hospitals and public health outreach programs that are vital to the health of American Indians and Alaska Natives individuals, families and communities.

Nurses live and work in some of the most beautiful areas of the country, in communities with deep traditions, located mainly, but not exclusively in rural settings. If you are a new graduate nurse or experienced nurse looking for new challenges, we have a place for you!

Recruitment and/or Relocation Incentive(s) may be authorized.
Opportunities for Student Loan Repayment Program.

To contact the Indian Health Service Nursing, please visit us at www.ihs.gov/nursing/ or contact us by email at: ihsrecruiters@ihs.gov