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MDONS

PROVIDING OPTIMAL CARE THROUGH PROMOTION OF PROFESSIONAL STANDARD, NETWORKING AND DEVELOPMENT

OPIOID OVERVIEW AND SAFETY

PRESENTED BY: MARK CAMPBELL CRNA, MSN
NOVEMBER 17, 2018
SUMMARIZED BY: THERESA BENACQUISTO RN, BSN, OCN

The word opium is derived from the Greek word for juice; the juice of the poppy is the source of opium. Opiate is the term used for drugs derived from opium. While similar to opiates, opioids are actually synthetic drugs that produce opiate-like effects.

Opiates may be semi-synthetic such as heroin, hydromorphone or hydrocodone. This involves simple modification of the morphine molecule. Also, they may be synthetic such as methadone, fentanyl or meperidine. Synthetic opioids are manufactured by synthesis rather than chemical modification of morphine. The major pharmacological difference between these drugs are potency and rate of equilibration between plasma and site of drug effect.

Opioids act as stereospecific opioid receptors, at presynaptic and postsynaptic sites in the brain and spinal cord, and outside the CNS in peripheral tissues. The principal effect of opioid receptor activation is a decrease in neurotransmission. There are three classifications of opioid receptors: mu, kappa, and delta. Mu receptors may be further divided into mu1 and mu2. Mu1 is speculated to produce analgesia. Mu2 are responsible for hypoventilation, bradycardia, and physical dependence. Opioid receptors have a mixture of receptor sites mentioned. The receptors are distributed in areas of the brain and spinal cord.

Clinical uses of opioids include for anesthesia; acute pain after surgery; injury or trauma; cancer pain; and pain arising from disease. Other clinical uses of opioids are for cough suppression with the use of codeine or dextromethorphan; diarrhea suppression with loperamide; and deaddiction using methadone, a synthetic opioid. However, the recent use of buprenorphine maintenance therapy is changing the landscape of treatment for opioid-dependent patients.

Buprenorphine is an opioid agonist but is different from other agonists. It too binds to the receptors, however, without a perfect fit. As a result, the buprenorphine tends to occupy the receptors without all the opioid effects. The receptor is tricked into thinking it has been satisfied with opioids without producing strong feelings of euphoria, and without causing significant respiratory depression. This prevents that receptor from joining with full opioids, thus if the patient uses heroin or painkillers, they are unlikely to experience additional effect. Buprenorphine tends to stay with the receptors, blocking them much longer then the opioids do. This stickiness is what makes buprenorphine last so long, up to 3 days.

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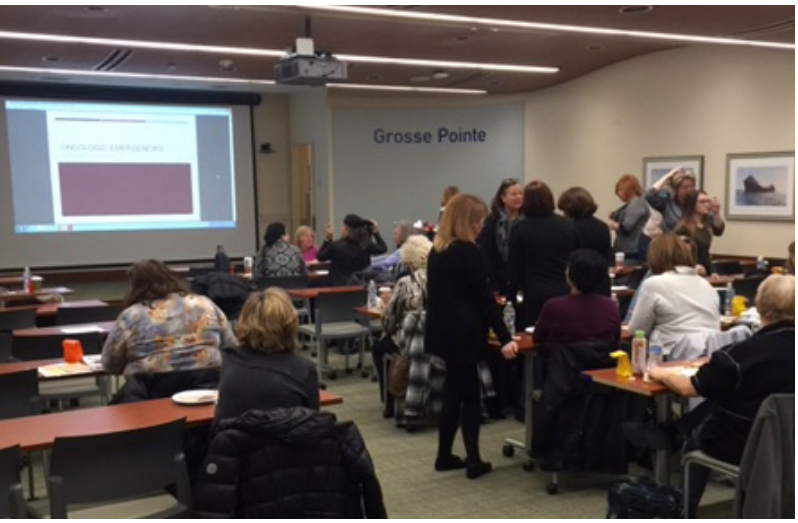
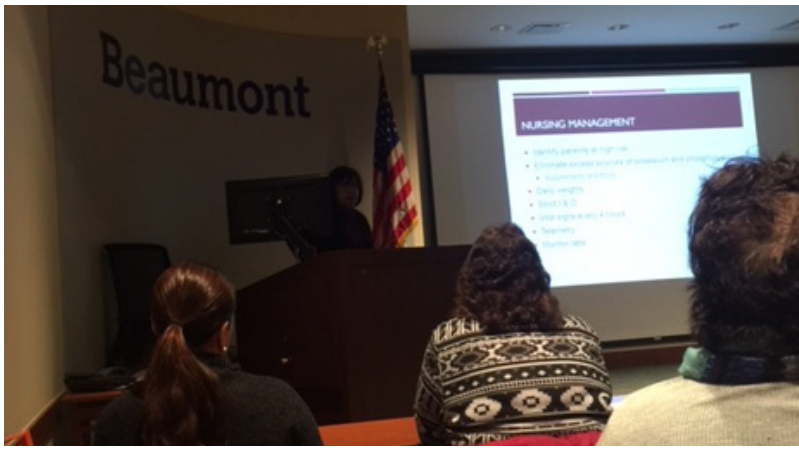
There is a difference between efficacy vs potency of opioids. Efficacy is defined as the maximum effect a drug can produce, regardless of dose. Potency is a measure of drug activity expressed in terms of the amount required to produce an effect of given intensity. Remember, that potency does not equal efficacy. Some NSAIDS can be as effective in treating pain as narcotics.

There are many side effects of opioids. The respiratory system is affected due to all opioid agonists producing dose-dependent depression of ventilation. This is characterized by decreased responsiveness of ventilation centers to CO2, as reflected by an increase in resting pCO2. Also, the cardiovascular system is affected by opioids by causing a decrease in sympathetic nervous system tone to peripheral veins, causing venous pooling with decrease venous return, cardiac output and blood pressure. Morphine causes a release of histamine which will also cause vasodilatation. Fentanyl does not cause a release of histamine, so hypotension is less likely. Bradycardia is more prominent with fentanyl than morphine.



The CNS side effects of opioids in the absence of hypoventilation, decrease cerebral blood flow and possibly intracranial pressure. These drugs must be used with caution with head-injured patients. Also, rapid administration may cause thoracic and abdominal skeletal muscle rigidity sufficient to interfere with adequate ventilation of the lungs. Biliary tract side effects include spasm of biliary smooth muscle resulting in increased intra biliary pressure. This pain maybe confused with



angina pectoris. Naloxone can relieve pain from biliary spasm but not myocardial ischemia. With the GI track, opioids can decrease propulsive peristaltic contractions of the small and large intestines. Delayed passage of intestinal contents causes the constipation with opioids. Other side effects include opioid induced nausea and vomiting. This is caused by direct stimulation of the chemoreceptor trigger zone in the floor of the fourth ventricle. Urinary urgency can also occur with opioid induced augmentation of the detrusor muscle tone. Also, cutaneous changes of morphine include dilation of blood vessels. This causes the skin of the face, neck, and upper chest to become flush and warm due to the release of histamine. These may be misinterpreted as an allergic reaction.

The difference between tolerance and dependence were also discussed. Tolerance is a state of adaptation in which exposure to a drug induces changes that result in diminution of one or more of the drug's effects over time. Tolerance usually takes 2-3 weeks to develop with analgesic doses of morphine. Physical dependence is a specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood levels of the drug, and/or administration of an antagonist. Physical dependence with morphine usually takes 25 days, however, some degree can occur after 48 hours of continuous medication.

When physical dependence is established, discontinuation of the opioid agonist produces a typical withdrawal abstinence syndrome within 15-20 hours, with a peak in 2-3 days. Initial symptoms of withdrawal are yawning, diaphoresis, lacrimation, or coryza, insomnia and restlessness are prominent. Abdominal cramps, nausea, vomiting and diarrhea reach their peak in 72 hours and decline over the next 7-10 days. During withdrawal,

FEATURE ARTICLE

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tolerance to morphine is rapidly lost, and the syndrome can be terminated by modest doses of opioid angonists. Symptoms of opioid withdrawal resemble a denervation of hypersensitivity that reflect an increase (up-regulation) in the number of responding opioid receptors in the brain.

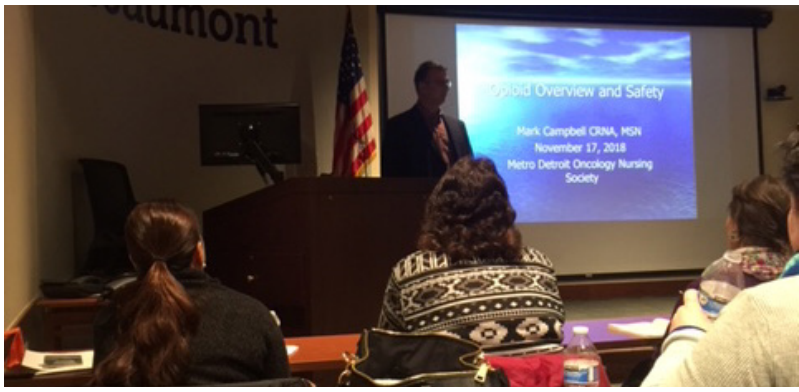
Opioid overdose manifests with depression of ventilation with slow breathing frequency which may progress to apnea. Pupils are symmetric and miotic unless severe arterial hypotension is present which results in mydriasis. Skeletal muscles are flaccid and upper airway obstruction may occur. Pulmonary edema can also occur, but the mechanism is not known. The triad of miosis, hypoventilation, and coma should suggest opioid overdose. Treatment includes mechanical ventilation, and administration of an opioid antagonist such as naloxone.

Naloxone is used to treat opioid induced respiratory depression in the postoperative period, treat respiratory depression in neonates, facilitate treatment of opioid overdose, and detect suspected physical dependence. Naloxone 1-4 mcg/kg, IV/IM/SM/IL promptly reverses opioid induced analgesia and depression of ventilation. The short duration of action, 35 – 45 minutes, is presumed to be due to its rapid removal from the brain. This emphasizes that supplemental doses of naloxone will likely be necessary. Sometimes a continuous infusion is required at a dose of 5 mcg/kg/hr. Oral naloxone is only 1 / 5 as potent as IV due to first pass effect of the liver.

Administration of naloxone over 2 – 3 minutes seems to decrease nausea and vomiting. Other side effects include increased sympathetic nervous system activity. This causes tachycardia, hypertension, pulmonary edema, and cardiac dysrhythmias. The abrupt reversal of analgesia causes the sudden perception of pain. It also crosses the placenta and care must be taken when given to an opioid dependent mother as to not produce acute withdrawal in the neonate. Also, the use of naloxone with the AMA recommendations were also discussed.

CDC recommendations for prescribing opioids were reviewed. They include using immediate release opioids when starting; use the lowest effective dose; prescribe short durations for acute pain; and evaluate benefits and harms frequently. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors increase risk for overdose. Clinicians should also review the patient's history of controlled substances using state prescription drug monitoring program (PDMP) data. This determines if they are receiving opioid dosages or dangerous combinations that put them at high-risk for overdose.

Clinicians should use urine drug testing before starting opioid therapy. Then urine testing should be done at least annually to check for prescribed medications as well as other controlled prescription drug and illicit drugs. Concurrent use of opioids and benzodiazepine prescribing should be avoided. Treatment should also be offered for opioid use disorder with methadone or benzodiazepine in combination with behavioral therapy.



Beginning March 31, 2019 in Michigan, a licensed prescriber shall not prescribe a controlled substance listed in schedule 2-5 unless there is a prescriber-patient relationship. This will deter "doctor shopping" when a patient obtains controlled substances from multiple healthcare practitioners. Also, tamper-resistant prescription forms are required in an attempt with prevention of fraudulent prescriptions for controlled substances. Michigan and twenty-five other states have a law either mandating or allowing pharmacists to request ID before dispensing prescription drugs.

Opioid shortages are due to manufacturing setbacks and a government effort to reduce addition by restricting drug production. The Drug Enforcement Administration called for a 25 percent reduction of all opioid manufacturing last year, and an additional 20 percent this year. This has led to finding alternative medications or alternative medication strength which has caused an increase in drug errors.

LETTER FROM THE EDITOR

DENISE WEISS PhD, FNP, BC

Recently I had to care for a patient that I was not very familiar with. Mr. M was followed by my colleague, Stephanie, who was off for the day. Mrs. M called the clinic to report her husbands' elevated temperature and was advised to come in for an evaluation. When I walked in the exam room to see Mr. M, the room was dark, he was lying down and covered with blankets. Mrs. M sat in the corner while her husband slept. I started the interview with Mrs. M and would proceed to the patient letting him rest for now. Mrs. M reviewed current symptoms that included worsening fatigue and mobility. She proceeded to provide examples of how functional Mr. M was a few weeks ago compared to the past several days. One poignant example was his, and therefore hers, missing church services. This was the golden opportunity to ask Mrs. M how she is taking time for herself.

Research has underscored the importance of family caregivers of oncology patients to care for themselves. We know family caregivers experience mental fatigue, psychological distress and increased burden, along with other symptoms, while functioning in the caregiver role (Weiss, 2016; Northouse, 2012; Jensen & Givens, 1993). Oncology nurses are in a prime position to assess the caregivers' coping and available resources. I took this occasion to ask Mrs. M how she is caring for herself. She was quiet at first, the pause was long enough for me to give examples of caregivers using vacation time to take patients to the hospital or clinics, foregoing their own doctors' appointments to keep the appointments for the patients. She said she did keep her mammogram appointment as her daughter was able to watch Mr. M for a few hours. The conversation was easy and flowed to evolve in a discussion rich in discovery of the demands associated with caregiving.

What impressed me most was the ingenuity this couple had for resource management. Mr. and Mrs. M lived on a few acres mostly covered with field grass. As a means to keep the grass in check, they bought a goat. The goat worked all summer to keep the estate trim but as summer was ending, so was the need for the goat. Her plans were to put the goat up for sale on Craig's List. Ms. M shared with me that having goats around was not new for her. The couple had raised goats at one time. She recalled one particular litter of kids (baby goats are called kids) that had ousted one of their members. Mrs. M noticed the litter not allowing one certain kid to feed or be involved in play. Therefore she opened her home to the animal and allowed it to eat, sleep and live in the house. When the kid grew into a goat and learned to jump over from the kitchen to the carpeted family room, it was time to say goodbye. The goat was born lucky. Mrs. M found a family interested in a goat to raise for the 4H fair. He went on to live a very good life.

Mrs. M's story provided a very nice relief in my day. We laughed together and for a moment were transported to a happier time. I hope telling the story and enjoying brief comic relief provided a much needed break for Mrs. M. Mr. M soon after was enrolled in hospice.

THE MDONS NEWSLETTER IS ALWAYS LOOKING FOR WRITERS, ARTICLES OF INTEREST AND YOUR OPINION.

PLEASE SEND ME A SCENARIO THAT IMPACTED YOU AND YOUR PATIENT-CAREGIVER TO WEISSD@KARMANOS.ORG

NOTES FROM THREE SCHOLARSHIP WINNERS

ONS CONGRESS WASHINGTON D.C., MAY 2018

MICHELLE MANDERS BSN RN-BC

What an honor it was to have been chosen to attend the 43rd Annual ONS Congress in Washington D.C. in May. Having never been before, I wasn't sure what to expect. I have been an oncology nurse for 15 years and quite honestly had been feeling burnt out, disillusioned and was somewhat bitter with my work environment. I had been contemplating changing work areas as I feared my tank was empty and my patience running thin. Attending ONS Congress was what I needed to rethink my options and begin the journey to find joy again in my work. It wasn't just the time away from work and everyday life, although that helped, it was the exposure to other nurses who were in the trenches like myself. It was the opportunity to share like experiences, learn new approaches and advancements in treatment and formulate a plan for self-care. I knew that I made a difference in my practice and felt a kinship with my patients and their families. Listening to the keynote speaker Mr. Lee Tomlinson, talk about his experience as a patient and what his needs were, brought to light for me that I had the insight, intuition and the compassion needed for oncologic patients. In fact, I feel it is a calling to be able to care for this subset of patients.

This experience gave me time to discern that it wasn't the patient population that I was struggling with it, but my work situation that was causing me to feel stressed and on edge. I came back from Congress with the decision made to look for new work in the oncologic area. It gave me the courage to make the necessary change and to follow through with my decision. Since Congress I have made good on my promise. I am delighted to be working in a new area, learning new skills, meeting new people and again feeling invigorated with my work.

Thank you MDONS Board for allowing me this opportunity. I got so much more then what I bargained for.

EVA VERA CRUZ , RN BSN ,OCN

Attending the ONS 43rd Annual Congress in Washington D.C. was a great experience. It really helped me to know the new practices in patient care. The booths of the different drug companies were very helpful in introducing their products for symptom management.

I visited the booths whose products help our patient's with radiation dermatitis, mucositis, pain management, and nausea.

The sessions had very interesting topics; but lots of good topics were in the same time slot; it would have helped to have them at different times. E-posters were interesting EBP.

I enjoyed very much meeting lots of nurses from different countries. We were invited to networking breakfast and I met nurses from Korea, Australia, Iceland, Netherland, Brazil, and Germany.

It was a very hectic schedule because it started very early in the morning and was done in the evening. It was a little tiresome but very rewarding. Thank you very much for giving me the ONS scholarship to attend the ONS congress.

LINSDAY CLEAVLAND

2018 marked my third adventure to the annual ONS Congress! The atmosphere was amazing! So many oncology nurses coming together to share ideas, network, and learn about new and innovative approaches to patient care and treatment. Washington D. C. was a wonderful backdrop for the event, even though the rain decided to make an appearance every day. Believe me, it didn't seem to slow any of us down! My favorite topics covered at the conference included: Cancer Treatment and the Impact on Fertility/ Sexuality, various Multiple Myeloma talks, and Nurses as the "Second Victim". The opening ceremony was an inspiring, heartfelt account of a man walking us through his oncology experience/treatment/survivorship process and the impact that his nurses had on his journey and eventual positive outcomes. Hearing this man speak gave me a much needed boost and a reminder of how so many of us give and wonder if we are making enough of a difference. The answer is YES! Keep giving, keep listening, and keep caring for those who are battling cancer. Every bit makes a difference!

Thank you MDONS for allowing me this wonderful experience, I am truly grateful! And thank you for your continued efforts to help oncology nurses pursue their professional goals with scholarships such as these!

ONS® Oncology Nursing Society

LETTER FROM THE PRESIDENT

FROM THE PRESIDENT

MELISSA JAMES, BSN, RN, BMTCN, OCN

Hello everyone and Happy New Year!

I wanted to take this time to say thank you to all the nurses that had to work during the holiday this year. We all work in a variety of setting, clinical and non-clinical, but one common denominator is that the holidays have an impact on all of us. Sadly, healthcare is an around the clock field, and we are needed front and center 365 days a year. Your patients are in a similar situation, being hospitalized over the holidays. So thank you for your dedication, compassion, care, and selflessness as you worked and took care of your patients over the holidays.

2018 was a busy year for the MDONS board. The year was filled with events and activities for members. The year started with our 28th Annual Updates in Oncology Conference on February 7, 2018. We moved the conference to a new venue in Troy, the San Marino Club, which was a big success. Topics included Cancer Genomics, Caregiver Fatigue, Immune Checkpoint Inhibitors, Multiple Myeloma, Pain Management, and Proton Therapy education.

March 2018 brought our Spring Mini Conference at Karmanos Cancer Institute. Topics included Safe Handling of Hazardous Drugs and Human Trafficking. The big hit of the conference was the BACON that was served for breakfast that day, which received numerous positive comments on our evaluations!

In May 2018 we hosted our President's Dinner at Andiamo in Dearborn. The guest speaker was Dr. Michael Stellini who talked on Medical Marijuana. This was a great event, as we were able to see members that live or work in the area that are not able to attend some of our other events. May 2018 was also ONS 43rd Annual Congress in Washington, DC. Our chapter was able to provide 3 scholarships to our members Lynn Cleveland, Eva Vera Cruz, and Michelle Manders. Congratulations!

Our Programs Committee met in June to plan our events and activities for 2019. This committee meets yearly, and is a great way to become more active within our chapter. If you are interested in becoming a Programs Committee member, please reach out to a board member listed at the end of the newsletter. We would love to have your input and ideas.

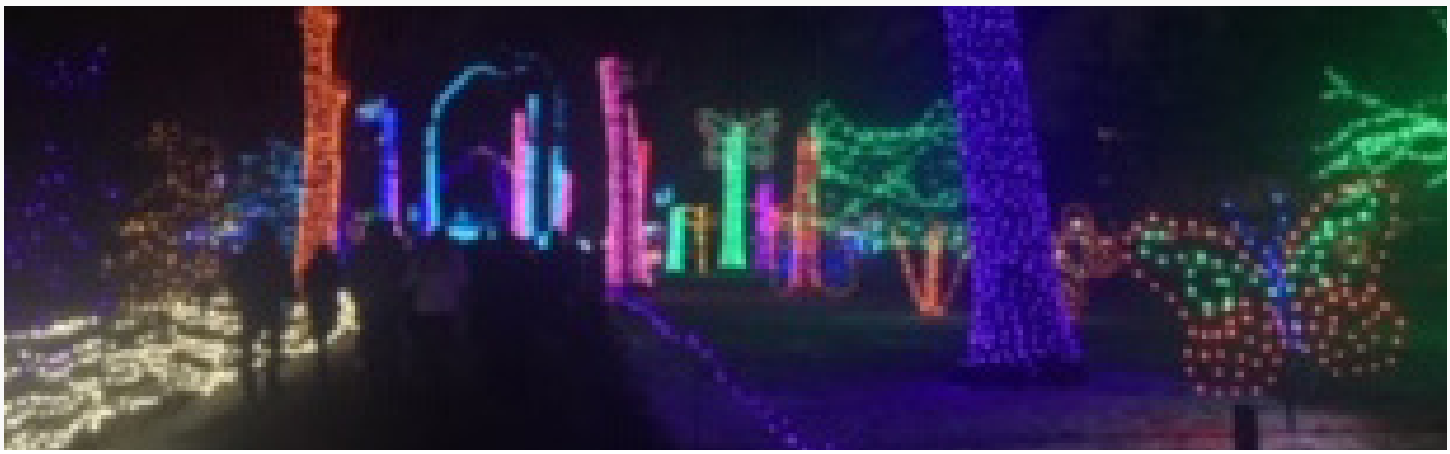
November 2018 brought our Fall Mini Conference at Beaumont Grosse Pointe. Topics included Oncology Emergencies, Certification Tips and Tricks, and Opioid Updates. Thank you to all members that were in attendance. This was our largest Mini Conference yet, with 55 members attending. Also in November, MDONS was a host for a CNE activity at Maggiano's in Troy. The sponsored event brought MDONS and Research to Practice together to bring Grand Rounds Breast Cancer for Nurses Series to Michigan. Participants enjoyed a dinner while listening to the topic of Breast Cancer and also received CNE for participating. We hope to have more of these events in the future.

We took December 2018 to celebrate all the hard, dedicated work that our board and chapter members have done this year. Our Holiday Party was spent at the Detroit Zoo Wild Lights. Members enjoyed a night under the stars and lights as we toured and explored the Detroit Zoo. We enjoyed a catered dinner, dessert, and a hot chocolate bar. It was magical, and very cold! Thank you to members that braved the cold with us.

As you can see, 2018 was filled with our annual events and activities. Thank you to everyone that volunteered their time to assist with the planning and implementing of these programs.

The end of 2018 brings the end of my term as MDONS President. It has been an honor to serve as your President for the past 2 years. I have learned so much during my term and have met so many wonderful nurses. Please continue to support and participate in this extraordinary chapter. MDONS is one of the larger chapters within ONS. We currently have almost 700 members. We have the resources and ability to provide our chapter members with incredible events throughout the year. We are very lucky to have such a successful chapter. As we look to 2019, Pam Laszewski, President Elect has some great events in the making, including a Wellness Retreat in the fall up in Shanty Creek. We wouldn't be able to have such events without the support of all our members. Please continue to check our new website for latest and greatest of what is happening within our chapter. I wish you all a Happy New Year, and look forward to seeing you in 2019.

WILD LIGHTS AT THE DETROIT ZOO



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LASZEWSK@KARMANOS.ORG

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BEAUMONT HEALTH
TAMMY.DIMEGLIO@BEAUMONT.ORG

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KARMANOS CANCER INSTITUTE
LASZEWSK@KARMANOS.ORG

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DENISE WEIS, PhD, FNP, BC
KARMANOS CANCER INSTITUTE
WEISSD@KARMANOS.ORG

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KARMANOS CANCER INSTITUTE
CAMPBELL@KARMANOS.ORG

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GAYLE GROSHKO, RN, BSN, OCN®
BEAUMONT HEALTH
GAYLE.GROSHKO@BEAUMONT.ORG

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KARMANOS CANCER INSTITUTE
DEB2OLSZ@YAHOO.COM

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CONFERENCE
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MARY.MANDZIARA@ASCENSION.ORG

CONFERENCE
MARY ANN DUCHARME RN, BSN
MARYANNDUCHARME@YAHOO.COM

CONFERENCE
CLARA BEAVER, MSN, RN AOCN®, ACNS, BC
KARMANOS CANCER INSTITUTE
BEAVERC@KARMANOS.ORG

TAR WARS PROGRAM COORDINATOR TOBACCO-FREE EDUCATION – OUTREACH
SUSAN WOZNIAK RN, MS, OCN®
SUSAN.WOZNIAK55@GMAIL.COM
HTTP://WWW.AAFP.ORG/PATIENT-CARE/PUBLIC-HEALTH/TOBACCO-NICOTINE/TAR-WARS.HTML

VIRTUAL COMMUNITY
ALICIA DECARIA, RN BSN NE-BC
BEAUMONT HEALTH
ALICIA.DECARIA@BEAUMONT.ORG

VIRTUAL COMMUNITY
SUSAN WOZNIAK, RN, MS, OCN
SUSAN.WOZNIAK55@GMAIL.COM