Evaluating Graduate Medical Education on Opioid Use Disorder in America’s Heroin Overdose Capital

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Abstract

Background

Due to the safety net nature of graduate medical education programs, resident physicians are the care providers for patients with addiction. The opioid epidemic has escalated and multiple studies have demonstrated a need to improve graduate medical education. We sought to understand the current training for opioid use disorder across all specialties of Graduate Medical Education to better understand the needs of our programs as a whole.

Objective

This is a cross-sectional, descriptive survey study to clarify current educational impact for our residents on opioid use disorder, current faculty experience in teaching and the plans of residents to meet community need by prescribing medication assisted therapy.

Methods

Forty-one residents and faculty participated in a cross-sectional, descriptive design regarding opioid use disorder education and knowledge. The survey developed utilized the Wakeman survey and was adjusted to include 2 further areas: faculty comfort in teaching skills related to opioid use disorder and resident intent to prescribe buprenorphine.

Results

The overall response rate for the survey was 29% (41/ 139) for possible resident and faculty associated with the Kettering Network residency programs. Residents were most comfortable with diagnosis and SBIRT and this aligned with faculty comfort in teaching. Residents and faculty both demonstrated areas of opportunity in MAT, harm reduction and naloxone prescribing. Despite the areas of learning opportunities, 70% of the resident respondents intend to provide medication assisted therapy in their future practices.

Conclusions
We uncovered inconsistencies in our training and significant gaps in faculty development. We recognize a need to engage both faculty and residents in further modalities of education and faculty development.

**Keywords:** Medical Education; Buprenorphine; Primary Care

**Introduction**

In Dayton, Ohio and in many communities nationally we are being stuck by an opioid epidemic. Nationally, in 2016, 11.8 million patients were treated for opioid use disorder (SAMHSA, 2018). Since 2010 in Greene County, one of two counties encompassing the Dayton area, the number of clients seeking treatment for opioids has increased nearly 5 fold (Greene County Combined Health District, 2015). Montgomery County, where Dayton proper is located, per capita has the highest rates of opioid overdose in the nation. The unintentional overdose with opioids death rate tripled since 2010 to now a 57.7 per 100,000 (Carlson, 2017).

Due to the growing opioid epidemic, the medical community has a significant unmet need. A national survey of patients receiving treatment for substance use disorders noted, with respect to their primary physician; 50% reported their physician did not address the substance use, 40% missed the diagnosis and only 25% participated in the decision to seek treatment (Altman, 2012). Deficits in knowledge and clinical skills in resident physicians and faculty compounds; lack of an adequate curriculum, exposure to end stage addiction solely, and lack of faculty experience lead to continued negative attitudes (Geller, 1989). Risks to not addressing the issue for hospitalized patients include increased leaving against medical advice rates, increased risk of readmission, increased total cost of care and increased risk of death (Liebshutz, 2014). National geographic studies of areas offering treatment show low rates and significant inconsistencies, particularly among primary care. Annals of Family Medicine in 2015 published an article of geographic and specialty distribution of physicians treating opioid use disorder that found only 3% of primary care physicians offer medication assisted therapy and very few of those are in rural areas. (Rosenblatt 2015).

Due to the safety net nature of many graduate medical education programs, resident physicians are the direct care providers for patients with addiction (Wakeman, 2013). The opioid epidemic has escalated quickly and multiple small studies have demonstrated gaps in current Graduate Medical Education. Specifically, low numbers of young physicians providing substance use disorder care may reflect insufficient training during residency (Rosenblatt, 2015). Society of Teachers in Family Medicine administer a survey to all program directors in family medicine training annually. In 2015, the survey included questions around curriculum for substance use disorder training. Only 26% of programs had a curriculum addressing substance use disorder, merely 8% of programs had one graduate treating substance use in their practices and the greatest barrier to implementation was faculty training and engagement (Tong, 2015). In addition, Isaacson et al surveyed emergency medicine, internal medicine, family medicine, obstetrics and gynecology, pediatrics and psychiatry residency programs in Cleveland, Ohio and found that consistent training in the initial diagnosis and management of substance use disorders had not yet been achieved in that area (Isaacson, 2015). Similarly, Wakeman et al. (2013) surveyed the internal medicine residents at Harvard University in 2012 and found that 55% felt training in addiction was fair to poor. Seventy two percent found the training insufficient in the ambulatory setting and 56% found training in the inpatient setting insufficient. In addition, Wakeman evaluated the residents on knowledge and noted gaps in knowledge particularly in medication assisted therapy (50% correct answers) and naltrexone (6% correct answers).

At Kettering Health Network, we sought to better understand the current curriculum and training for opioid use disorder across Graduate Medical Education. This survey-based study allowed us to better understand the needs of our programs as a whole as well as at each practice site. We will use this as a starting point to develop
implementation plans for improvement via the best practices being developed nationally.

Methods

Forty-one residents and faculty of the Kettering Health Network participated in a cross-sectional, descriptive design regarding opioid use disorder education and knowledge via an online anonymous survey. Inclusion criteria were current resident physicians in Kettering Health Network or current employed faculty for Kettering Health Network Graduate Medical Education, willingness to participate in the study, and the ability to read and write English. Local IRB approval was obtained via expedited review prior to initiation of the study.

The survey in this study utilized the Wakeman et al survey for resident physicians and was adjusted to include 2 further areas: 1.) Addition of faculty comfort in teaching: screening, diagnosis, brief intervention, behavioral therapy, and medication assisted treatment and 2.) Resident intent to prescribe medication assisted treatment in their future practice. Approval to utilize the survey was obtained via email prior to initiation of the study. See Appendix A for a full copy of the survey.

The survey was formatted with survey monkey and was a Likert scale based study. It was distributed to program directors and program coordinators in the graduate educational programs. It was then distributed electronically to faculty and residents in each program. Participation was on a voluntary basis. The survey was available for completion for 14 days. Survey monkey is a secure, password protected software program that uses SSL (Secure Sockets Layer) protocol for transmitting private information via the internet. The data was screened for obvious errors by reviewing minimum/maximum ranges in all of the data cells. Descriptive statistics were completed, including mean, median, mode standard deviation, and normal distribution assessments for continuous variables.

Results/Analysis

The overall response rate for the survey was 29% (41/ 139) for possible resident and faculty associated with the Kettering Network residency programs. Of those who participated, 49% (20/41) were faculty and 51% (21/41) were resident physicians. Participants were distributed among the fields of internal medicine (20/41), family medicine (13/41), emergency medicine (1/41), obstetrics and gynecology (1/41), radiology (1/41), general surgery (1/41) and transitional year (4/41) (Figure 1 & 2).

Figure 1: Training Level of Participants
Figure 2: Specialty Distribution of Survey Participants

Most resident physician respondents self-report they are comfortable screening and diagnosing substance use.
disorder (83% and 85% respectively). The comfort level in referring for treatment and behavioral therapy is less so at 56% and 68% respectively. The least self reported comfortable areas clinically are medication assisted treatment 39%, overdose prevention and naloxone treatment 46% and harm reduction strategies 48% (Figure 3). Of the resident physician respondents, 70% (14/20) somewhat or strongly agree that they will provide medication assisted therapy in the future (Figure 4).

Figure 3: Self Perceived Preparedness in Resident Physicians

![Figure 3: Self Perceived Preparedness in Resident Physicians](image)

Figure 4: Resident Physician Intent to Prescribe MAT in future practice
To evaluate for bias in the treatment of alcohol use versus substance use disorders, we compared multiple questions around alcohol use disorder directly to substance use disorders. In comparing whether or not respondents regularly take a substance use history for all new patients, the comparison of alcohol use and illicit drug use was not significantly different (p<0.01). In comparing respondents use of formal screening tools (p=0.03), comfort in treating alcohol use and illicit substance use (p<0.01), and referral for treatment (p<0.01) there were no significant differences between alcohol use and substance use disorders.

Faculty self-reported data related to comfort teaching topics in substance use disorders showed greater comfort in teaching screening and diagnosing (58% and 54% respectively) compared to teaching brief intervention (41%). Faculty felt least prepared teaching behavioral and medication interventions (33%) (Figure 5).

Figure 5: Self perceived comfort of faculty physician teaching skills
Discussion

From our local site data compared to the site of the original survey by Dr. Wakeman and her associates, we found we also have gaps in our self-reported comfort levels and similar to Tong et al in 2015 significant barriers with faculty education. We recognize a need to engage both faculty and residents in further modalities of education and faculty development. Our faculty and resident physicians are self-reportedly competent in diagnosis and referral to treatment. Our areas of opportunity lay in brief intervention and behavioral counseling, role of medication assisted therapy (MAT), role of naltrexone in overdose prevention and other community-based hard reduction strategies. This was juxtaposed, however, in that a majority of our resident physicians feel they will provide MAT in the future. As clearly discussed by Dr. Jennifer Middleton in her editorial regarding primary care role in opioid use, addressing the discrepancy of education is important as we move toward a future where our patients need all providers to treat opioid use disorder (Middleton, 2017).

There is, unfortunately, a lack of a best practice for training and education within graduate medical education programs and practicing physicians in opioid use disorder. It is nationally recognized that the opioid epidemic has increased faster than our medical school training and graduate medical education programs could manage effectively. However, multiple programs of implementation have been successful in similar clinical challenges. Training for alcohol use disorder in 1988 with medical students and resident physicians was successful in improving the quality of care and outcomes for this major chronic disease (Geller, 1989). There are programs looking to develop best practices by utilizing sequential implementation across residency programs (O'Sullivan et al., 2017), Project ECHO (University of New Mexico, 2018), clinical site champions (Pringle, 2017) and OSCE (objective structured clinical examination) training (UMass Med 2018, Brown 2017 and Polydorough, 2008).

With this data, we intend to adjust our educational curriculum around opioid use disorder. This will include local site champions, opioid-conscious OSCE sessions modeled after those utilized in University of Massachusetts, and
focused Medical Grand Rounds and didactic sessions. Additionally, in our family medicine program, we are facilitating early buprenorphine waiver training and are adding two required 4 week rotations in addiction medicine as well as a rotation in community medicine with a focus on resources for mental health and substance use. We intend to reevaluate the GME programs in 24 months to evaluate the educational impact. Atul Gawande eloquently states "Better is possible. It does not take genius. It takes diligence. It takes moral clarity. It takes ingenuity. And above all, it takes a willingness to try" (Gawande, 2008). We strive to do better (Gawande, 2008): to improve the quality of life of the people in the communities we serve through health care and education (Kettering Medical Center, 2017).

Conclusion

There is, unfortunately, a lack of a best practice for training and education within graduate medical education programs and practicing physicians in opioid use disorder. It is nationally recognized that the opioid epidemic has increased faster than our medical school training and graduate medical education programs could manage effectively. However, multiple programs of implementation have been successful in similar clinical challenges. Training for alcohol use disorder in 1988 with medical students and resident physicians was successful in improving the quality of care and outcomes for this major chronic disease (Geller, 1989). There are programs looking to develop best practices by utilizing sequential implementation across residency programs (O'Sullivan et al., 2017), clinical site champions (Pringle, 2017) and OSCE (objective structured clinical examination) training (Brown, 2017 and Polydorough, 2008).

Take Home Messages

Educational improvements to training in addiction management for primary care providers are imperative. Collaboration across graduate medical education to determine a standardized and integrated best practice to meet student and patient needs are the next appropriate steps.

Notes On Contributors

Anna Murley Squibb MD is the inaugural Associate Program Director for Soin Family Medicine Residency in Dayton, Ohio.

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None.

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### Appendices

#### Appendix A - Substance Use Disorder Survey

**Demographic Data**

I am a:

- Resident Physician / Year of training:
- Faculty Physician

Specialty:

1: Please rate your level of agreement with the following statements:
   
   (1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree)

   A: A substance use disorder is different from other chronic diseases (e.g. diabetes, hypertension) because people who use drugs or alcohol are making a choice.

   B: A substance use disorder is a treatable disease.

   C: Using medications like methadone and buprenorphine (Suboxone) for opioid use disorder is simply replacing one addiction with another.

   D: I find caring for patients with a substance use disorder as satisfying as my other clinical activities.

   E: Treating substance use disorders reduces associated health and social costs by far more than the cost of the treatment itself.

   E: Patients with a substance use disorder are more challenging than the average patient to take care of.

   F: Someone who uses drugs is committing a crime and deserves to be punished.

2: How often do you ask the following types of patients about quantity and frequency of alcohol use?

   (1=Never, 2=Rarely, 3=Often, 4=Always N/A to my practice)

   A: All new inpatients at time of admission or consult
B: Selected new inpatients based on clinical or laboratory findings

3: How often do you ask the following types of patients about quantity and frequency of illicit drug use or prescription drug use for a nonmedical reason? (1=Never, 2=Rarely, 3=Often, 4=Always N/A to my practice)

A: All new inpatients at time of admission or consult
B: Selected new inpatients based on clinical or laboratory findings

4: Please describe how prepared you feel to: (1=very unprepared, 2=somewhat unprepared, 3= somewhat prepared, 4=very prepared)

A: Screen for a substance use disorder
B: Diagnose a substance use disorder
C: Provide a brief intervention to a patient with a substance use disorder
D: Refer a patient to treatment for a substance use disorder
E: Discuss behavioral therapy treatment options for substance use disorders with a patient
F: Discuss medication treatment options for substance use disorders with a patient
G: Discuss opioid overdose prevention and naloxone administration with a patient at risk of overdose
H: Discuss harm reduction with a patient with a substance use disorder
I: Faculty Only: Teach screening in substance use disorder to resident physicians
J: Faculty Only: Teach diagnosing substance use disorder to resident physicians
K: Faculty Only: Teach Brief Intervention to resident physicians
L: Faculty Only: Teach Behavioral therapy to resident physicians
M: Faculty Only: Teach Medication treatment options for substance use disorders to resident physicians

5. How often do you...
(1=Never, 2=Rarely, 3=Often, 4=Always N/A to my practice)

A: Use a formal screening tool when asking patients about alcohol use?
B: Use a formal screening tool when asking patients about illicit drug use or prescription drug use for a nonmedical reason?

C: Advise patients with unhealthy alcohol use by providing medical advice related to his/her alcohol use?

D: Advise patients with unhealthy drug use by providing medical advice related to his/her drug use?

E: Determine readiness to change in a patient with unhealthy alcohol use?

F: Determine readiness to change in a patient with unhealthy drug use?

G: Offer help based on readiness level in a patient with unhealthy alcohol use?

H: Offer help based on readiness level in a patient with unhealthy drug use?

I: Refer patients with an alcohol use disorder for treatment?

J: Refer patients with a drug use disorder for treatment?

6: Please indicate your usual practice when caring for patients with a substance use disorder:
[] I provide treatment myself
[] I provide initial assessment and then refer
[] I refer immediately to another caregiver
[] I do not provide care to patients with a substance use disorder
[] Don’t know

7: During a typical month of practice, how often do you do the following?
Provide clinical care (% total time)
See a patient in clinical practice who has a substance use disorder (# of patients)
Have a patient ask you for help with a substance use disorder (# of patients)
Receive a request for help from a patient’s family member related to a substance use disorder (# of requests)
Refer a patient to treatment for a substance use disorder (# of referrals)
Prescribe naloxone to a patient at risk for overdose (or to family/friends of patient)
Prescribe a medication to treat a substance use disorder (e.g. buprenorphine, naltrexone)

8: Resident Only: I intend to prescribe medication assisted therapy in my future practice.
(1=strongly disagree, 2=somewhat disagree, 3=somewhat agree, 4=strongly agree)

Declarations

The author has declared that there are no conflicts of interest.

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Ethics Statement

IRB approval prior to initiation was obtained at Kettering Health Network, Exemption Category, IRB Reference #: 17-104. Approval 20/12/2017.

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