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FINAL REPORT

UniverCity Year

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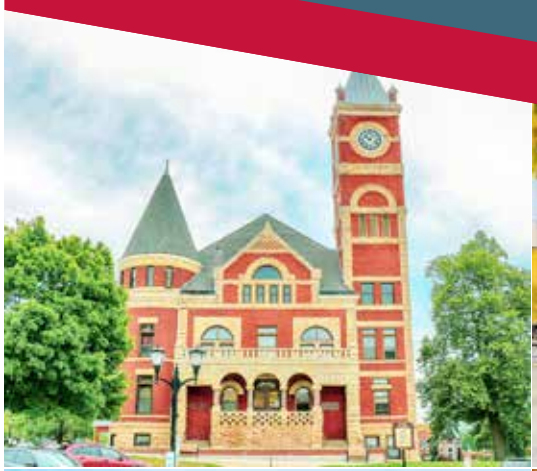
Identifying opportunities for outpatient opioid detoxification in Green County

POPULATION HEALTH SCIENCES 780: PUBLIC HEALTH: PRINCIPLES AND PRACTICE






UniverCity Alliance

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Summary Statement

Opioid addiction and management of addiction is an emerging issue in the United States, as well as in Green County, WI. Inpatient treatment facilities are traditionally the favored approach to opioid addiction management, partially due to the ability to directly supervise treatment. However, inpatient treatment can be expensive, due to staffing, operations, and facility maintenance costs. Green County has been able to utilize inpatient facilities located in other counties throughout the state due to grant funding. Since this funding is expected to be discontinued, it is imperative that a lower cost alternative to treatment be made available to the community. An ambulatory detoxification program or other outpatient treatment program may allow the community to provide addiction management services without the expense of transporting patients to other counties and paying for their inpatient programs. In this report, we describe a potential approach to building an outpatient opioid addiction management program using primarily existing community resources, with the goal of providing lower-cost, evidence-based opioid addiction management in Green County.

Public Health Issue

In the last several decades, medical technology and drug development have improved in both emergency services as well as in primary care provisions. Unfortunately, along with these advances, health professionals are seeing a rise in unintended consequences from overprescribed patient medications. Specifically, opioid addiction has recently become a crisis in the health care system, and communities around the nation are forced to combat the effects of this rising crisis on a reactive level.

Opioids are a class of drug, usually prescribed by a physician with intent to relieve acute or chronic pain in a patient (U.S. National Library of Medicine, 2018). Examples of common formulations include oxycodone, hydrocodone, fentanyl, and tramadol (U.S. National Library of Medicine, 2018). Opioid addiction refers to the development of physical and psychological dependence resulting from misuse of opioids either prescribed to individuals or retrieved illegally through an outlet other than a health care provider (U.S. National Library of Medicine, 2018). The initial rise in opioid overdose in 1999 was attributed to prescription opioid overdose deaths, most notably due to opioid prescriptions provided to those suffering from chronic pain or recovering from emergency surgeries (Centers for Disease Control and Prevention, 2017). Over the last twenty years, the proportion of individuals who died from an opioid overdose from prescribed treatments has risen steadily from just one per 100,000 to more than five people per 100,000 (Centers for Disease Control and Prevention, 2017). The true opioid crisis, however, lies in the exponential increase in death rates over the last ten years, specifically for those misusing synthetic opioids and heroin, presently leading to more than 13 deaths for every 100,000 for synthetic opioid and heroin overdoses combined (Centers for Disease Control and Prevention, 2017). In 2017, more residents of Wisconsin died from opioid overdoses than from car crashes (Wisconsin Department of Health Services, 2018).

Usually involving illicitly manufactured fentanyl, synthetic opioid production and distribution has made it simple for susceptible members of the community to illegally acquire and develop addictions to opioids without the necessity of relying on physicians' periodic prescriptions (Centers for Disease Control and Prevention, 2017). Such ease in access has led to excessive emergency services visits involving inpatient opioid addiction treatments, as well as the continuing exponential increase in deaths from opioid overdoses. In an effort to gain solid footing in proactively combating the opioid crisis, new resource-optimizing outpatient treatment protocols should be established for those presenting with opioid addictions in health care

settings, and financially efficient preventative measures should be taken to ensure that those treated for opioid addiction have the support necessary to avoid experiencing recurrent relapses.

Present and potential barriers, specific to that of Green County, that the new outpatient treatment program seeks to overcome include formal practice, funding limitations, and follow-up care. Often, those presenting with opioid addiction in Green County are treated using detox practices that are outdated and less effective than newly introduced, evidence-based options. Although altering a traditional treatment plan is potentially formidable for physicians, the proven benefits of implementing a more modern medical approach to outpatient treatments for opioid addiction will result in a more comfortable, efficient experience for the patient as well as for the health care staff involved. This resistence to change could be overcome by way of including physicians and other care providers in the organization's or program's coalition, allowing those members of the community to voice their concerns and feel more involved in the program and policy creation process. Transitioning from previous practices to evidence-based treatments could help improve the perceived quality of care for patients experiencing withdrawal, as well as help provide health care professionals with the knowledge and experience necessary to efficiently execute advanced modern medical approaches to combating opioid addictions.

Moreover, in Green County, much of the funding made available for opioid addiction treatments are provided by way of grants. Unfortunately, those grants are limited, and the financial obligations of opioid addiction treatment facilities are not. The newly proposed approach to opioid overdose patient care seeks to make the most of resources already available within the health care system, minimizing the long term financial impact that the rising opioid crisis would have on hospitals and rehabilitation facilities. In addition, moving from inpatient care to outpatient care will help minimize financial costs and resource usage for patients and hospitals alike. The ability for an opioid-addicted patient to receive appropriate life-saving care should not be dependent on the availability of a grant, but rather on the efficiency and skills of well trained health care professionals.

One of the most common obstacles in outpatient opioid addiction treatment is follow-up care. Not only in regards to the health care providers getting in touch with the recently treated patient, but also in ensuring that the patient receives the resources and support needed to refrain from experiencing a relapse. New, innovative options presented in this program offer the ability for patients and health professionals to extend communication beyond hospital walls, allowing ease in patient-centered post-treatment care. The health care system will function more efficiently if patient care did not cease with the signing of discharge papers. This program attempts to alleviate such follow-up barriers.

Another potential issue with any intervention would be the possibility that the program is unable to reach the targeted treatment beneficiaries. Such scenarios may be due to health care systems' reluctance to implement new programs, as well as a lack of community access to treatment facilities. Fortunately, intervention evaluations following program implementation would help address this issue, if present, allow the evaluators to pinpoint the source of the outreach gap, and resolve the problem accordingly. The resolution may require a change in the intervention or an execution of a new policy, but such actions would certainly be worthwhile if it ensures long term efficacy for this program.

According to the Green County Community Health Coalition, the current Community Health Needs Assessment consists of several ecological layers of assessment and community involvement (2016). The plan begins with assessing needs and resources, focusing on what is deemed important by the community, progressing to choosing effective policies and programs, acting on what is important, and evaluating those actions (Green County Healthy Community Coalition, 2016). Furthermore, the plan emphasizes the essential aspects of working together and

communicating in order to create change, as well as involving various community resources, including nonprofits, healthcare facilities, government agencies, educational institutions, and many others (Green County Healthy Community Coalition, 2016). Finally, and perhaps most importantly, the center of the Green County community assessment plan consists of the members of the community, without whom any intervention would be baseless (Green County Healthy Community Coalition, 2016). The program proposed for this project would certainly follow suit with this assessment plan, as Green County representatives have already made clear the opioid crisis must be addressed, and community partnerships must be elevated and extended in order to render this program effective and efficient in the long term. Moreover, by ensuring each step of implementation and evaluation of this program involves members of the Green County community as well as those who work within opioid addiction and intervention facilities, any presenting obstacles can be overcome, and any adjustments necessary to the program can be made accordingly over time.

Community and Partnerships

The target audience for implementing this proposed program includes emergency care health professionals, opioid treatment center professionals, and primary care professionals. In order for the proposed medical care treatment changes to work effectively, opioid addiction would need to be addressed from all potential treatment angles within the Green County community. Moreover, the audience who will be impacted by this intervention includes those susceptible to opioid addiction, those presently struggling with opioid addiction, those recovering from opioid addiction, the loved ones of those with opioid addiction, and each of the community members hoping to eliminate the opioid crisis from Green County. If this program is able to help prevent opioid addiction, prevent relapses, promote recovery, and promote community involvement in addressing the opioid crisis, then perhaps the present exponential increase trend in opioid overdose deaths within the nation will finally begin to decline.

In accordance with the local assessment plan for Green County, the proposed program to combat the current opioid crisis is centered on community members' needs and the aspect that they deemed most important to address. In 2016, a survey was conducted to gather health needs information directly from members of the Green County community (Green County Healthy Community Coalition, 2016). The survey reached the target audience by way of mail, online communications, through local clinics and hospitals, as well as through food pantries, health departments, and various resource centers (Green County Healthy Community Coalition, 2016). As determined by the 697 individual responses, Alcohol and Drug Abuse was deemed one of the top three most critical issues in need of intervention (Green County Healthy Community Coalition, 2016). This survey demonstrates the interest that the Green County community has in addressing the opioid crisis, and also represents the potential commitment towards utilizing a newly proposed program in the hopes of lowering the rates of opioid addiction and overdose.

Presently, the Alcohol and Other Drug Abuse unit of the Green County Human Services Department offers a variety of outpatient resources and services that could aid in the efficacy and implementation of a new program, ensuring that the opioid crisis will be addressed. These resources and services include primary treatment programs, aftercare, recovery, counseling, inpatient care, detoxification, prevention, emergency care, intervention, information and referral centers, and intoxicated driver assessments (Green County Human Services, 2018). Moreover, women who are pregnant and seeking treatment for opioid addiction would have first priority for admission to the available resources and services (Green County Human Services, 2018). Such policies and available care geared towards substance abuse demonstrates that Green County is emphatic to individual situations and needs of individual community members, as they are ready

and willing to expand their services and outreach if needed. Green County already offers resources to those looking to receive help with opioid addiction, but the proposed program would update those policies and interventions with the most recent evidence-based outpatient treatments and services available for health care providers.

The partnerships most crucial to the success of the newly proposed programs for addressing the opioid crisis within Green County include health care systems, clinics and local service centers, as well as investors who play a role in potential addiction prevention and financial assistance. If forming a coalition for the organization and proposed program implementation is possible, such group partnerships would allow for various members of the community from multiple backgrounds to have an input in how the program is enacted, evaluated, and supported through the future. Fortunately, Green County Human Services Department has access to a variety of local businesses and centers that would are partnered with other health crisis-centered services, such as Green County Healthy Community Coalition, and would likely be open to a partnership with the Green County Human Services Department as well. Such hospitals and health care systems include Mercy Health System, Monroe Clinic, UW Health Systems, and many more located in both Wisconsin as well as Illinois (Green County Healthy Community Coalition, 2016). Moreover, resources like the Access Community Health Centers, Neighborhood Health Partners, and several others have also served as partners and available resources for those reaching out for treatment help in Green County (Green County Healthy Community Coalition, 2016). Furthermore, the Green County Health Department, Green County YMCA, and Southwestern Wisconsin Community Action Program could each help in prevention of opioid addiction and misuse within the Green County community (Green County Healthy Community Coalition, 2016). In all, Green County has a variety of community-based organizations and resource centers that might serve as optimal partners in ensuring that the opioid crisis is adequately assessed, addressed, and prevented within future generations.

The Green County Human Services Department currently has outpatient services available to those seeking treatment for opioid addiction. To implement the proposed programs, the majority of the required infrastructure would likely already be available to Green County. The proposed programs would utilize existing staff members in select units of outpatient care, requiring that strategies used for treating those with opioid addiction and preventing relapses be slightly altered. Moreover, new staff members may need to be hired onto the health care team part, or full-time in order to promote resource availability, enforce prevention programs, and carry out other crucial care duties. While many prevention programs might be able to utilize volunteers, the distribution of information would still require a fair amount of funding to implement. Nonetheless, one of the primary goals of the proposed programs is to ensure fiscal efficiency, so optimizing readily available resources is necessary to ensure that this goal is met.

Health Equity Focus

Since opioids are still commonly prescribed by emergency and primary care physicians, one of the most at-risk populations for opioid abuse and addiction consists of those suffering from chronic, painful conditions, including liver or kidney problems, breathing problems, and those who are HIV positive (Wisconsin Department of Health Services, 2018). Unfortunately, this means that many victims of opioid misuse and overdoses are seniors who have unintentionally become addicted to opioids. In recent years, however, the opioid overdose rate in Wisconsinites aged 10-24 has increased by over 238% (Wisconsin Department of Health Services, 2018). This significant rise in opioid overdose rate for this age group could potentially be attributed to the increase in production of synthetic opioids and the ease in access that community members have to such drugs (Centers for Disease Control and Prevention, 2017). In

2013, more residents of Wisconsin died from drug poisoning than from cancer, firearms, HIV, suicide, or influenza (Green County Healthy Community Coalition, 2016). In Green County, opiates and heroin are the third most popularly used drugs behind alcohol and THC (Green County Healthy Community Coalition, 2016). As demonstrated, opioid addiction and overdose affects those of all backgrounds. The variety of residents potentially susceptible to opioid addiction presents a challenge, as it can be difficult to find a standard program that would successfully provide outreach to each population. The proposed programs in this project intend to adequately provide treatment resources to those affected by opioid overdoses and addiction, regardless of mental or physical health status, age, race, economic status, or gender.

The treatment and outreach techniques discussed in this project will implement a multi-focal program, effectively utilizing cell phones applications, social networking, and community resource programs already in existence or readily available within Green County. By ensuring widespread, cost-effective outreach methods for opioid addiction prevention, treatment, and follow-up, the hope is that each of the many populations susceptible and currently affected by the opioid crisis will be provided with the support necessary to alleviate the associated impacts. Over time, frequent evaluations of the programs will utilize community feedback, data collected via health systems, and coalition collaboration to ensure long-term efficacy of these interventions. As technology progresses and social networking methods of society improve, the approaches of intervention for the opioid crisis will advance as well. With the help of community members and coalitions, the ripples of successful small-scale actions will soon grow to become powerful waves of prosperity and enduring health within all Green County populations.

Evidence-based Strategy

Local funding and infrastructure constraints make an outpatient approach to opioid detoxification the most reasonable approach for addressing addiction and dependence in Green County. Because detoxification alone has been shown to be ineffective for treating opioid dependency long term, in order to make this outpatient program most effective, a combination of several evidence supported programs should be used (Day & Strang, 2011). In conjunction with standard primary physician care, medication assisted treatment options, integrated mental health treatment, and cell phone accessible follow-up would all help to both improve retention in treatment as well as increasing positive outcomes, while reducing the high cost and significant staffing requirements of an inpatient treatment option. These three program aspects could improve program success, while requiring only a few additional resources.

Medication assisted treatment (MAT) has been an available treatment for opioid dependent individuals for more than 20 years (Chou et al., 2016). MAT is the use of an opioid agonist or antagonist medication to assist with the wholistic treatment of an individual with opioid dependency. Three medications are generally used for this kind of treatment: methadone, buprenorphine, and naltrexone. Current research suggests that all three of these medications are safe options to help reduce the impact of withdrawal symptoms (Timko, Schultz, Cucciare, Vittorio, & Garrison-Diehn, 2015). While methadone is currently only available for use in specific certified treatment centers in the United States, buprenorphine – generally given with naloxone – and naltrexone are both MAT drugs that can be prescribed at a general clinic or medical office by a certified provider (Chou et al., 2016). One meta-analysis found that MAT increases retention in treatment compared to placebos or no medication assistance at all (Timko et al., 2015). Methadone and buprenorphine specifically have also been shown to reduce overdose mortality risks following treatment (Sordo et al., 2017). Despite these benefits, MAT has been largely underused for many years, mostly because of stigma and lack of MAT specific education that causes hesitancy among providers (Chou et al., 2016). For this reason, it will be

important to utilize resources and encourage providers to seek out more information about how and why MAT works. A meta-analysis of 12 representative MAT methods, utilized in different areas around the U.S., found that while programs differ in the details of their implementation, most of the key informants agreed that integration of care, and proper provider education were essential to success of the programs (Chou et al., 2016). This suggests that while MAT does benefit treatment of those who are opioid dependent, medication replacement alone is not enough for a complete program plan.

Integrated care is one suggestion, made in the meta-analysis by Chou et al., that can be used to improve treatment (2016). The term "integrated care" is used to describe the coordination of care administered by several different providers for a single patient to help address multiple morbidities and provide patients with collective treatment goal. In the case of patients with substance abuse, inpatient treatment usually involves both medical and mental health intervention. Integrated care has been associated with a decrease in symptom severity and an increase in response to treatment (Minnesota Evidence-based Practice Center, Minneapolis, Minnesota, 2008). To make an outpatient setting most successful, integrating a mental health therapy treatment plan with MAT would be most likely to improve retention as well as positive outcomes long term (Haibach, Beehler, Dollar, & Finnell, 2014). There are a few different approaches on how to integrate care. Some options encourage communication between providers directly, while others assign a third party individual to manage the cases and facilitate communication between providers (Chou et al., 2016). To decrease the burden on providers, it is recommended by Chou et al (2016) that a nurse practitioner, physician's assistant, or RN case manager fill this role as an intermediary care coordinator. This individual could also further reduce the load on providers by being a primary contact for the patients to help them find resources or address other minor needs during treatment. By integrating care, patients are able to receive cohesive and comprehensive treatment for the multiple facets of their addiction, while the burden on providers is reduced by the role of the care coordinator.

Utilizing the care coordinator as a point of contact for individuals in treatment would improve the patient's access to a care professional while also reducing the time commitment each patient places on the mental health or primary care provider. Because outpatient detoxification programs lack the continuous access to care that an inpatient program has, studies have found that mobile devices can be used to bridge the gap between provider visits (Tofighi, Nicholson, McNeely, Muench, & Lee, 2017). Texting is also a good way to increase access to interventions and educational materials, as well as to perform community outreach focused on preventing substance abuse disorders (Mason, Ola, Zaharakis, & Zhang, 2015). Utilizing text messaging to extend therapeutic interactions beyond appointments has been shown to improve clinical outcomes, medication adherence, engagement in support groups, appointment attendance, motivation, self-efficacy, and prevent relapse (Tofighi et al., 2017). This could be used as a means of checking in with patients, giving them more resources and education, or simply for appointment reminders. Some studies have also used text messaging as a way for patients to track and address their cravings with the help of their provider or care coordinator (Tofighi et al., 2017). Because outpatient treatment programs by their nature lack a certain element of provider access, cell phones can help reduce the impact that leaving the care environment has on the patient and their behaviors.

There are currently two physicians in Monroe who are certified to prescribe buprenorphine, and it would be important to involve them, or obtain waivers for other providers prior to implementing the program ("Buprenorphine Treatment Practitioner Locator," n.d.). Green County also has existing outpatient mental health services in Monroe as well ("GCL-Mental-Health-Guide-3.pdf," 2015). If these existing clinical facilities could be integrated

through a newly installed coordinator position, it would be possible to maximize the effects of existing programs and new additions to those treatment options within Green County. Transportation considerations will need to be a part of program planning as well, since both clinical resources are located in Monroe. It will be important to get providers involved and help them to become more well educated in the use of MAT to address opioid dependency, which can be done by utilizing established provider education materials from the Substance Abuse and Mental Health Services Administration (SAMHSA) website (Baylor, 2015). Once the providers are established and involved, hiring for the position of care coordinator and establishing a coalition to build the details of the rest of the program and any other individual patient variations will be essential to mapping the various aspects of this program onto the communities of Green County.

In order to establish such a program in the community, it will be important to set and evaluate the goals involved with both building and running an outpatient detoxification program. While these three programs have not been tested in combination in any single community to date, the evidence supporting their individual use suggests that they would integrate well. A few goals to consider in the short term are: the establishment of a coalition, establishing a formal program plan, and finding sources of funding for the program. After the program plan is solidified, mid-program goals include: hiring a care coordinator, community outreach and promotion of the program, and maximizing efficiency of the care coordination aspect of the program. The greatest cost involved with an outpatient treatment option designed in this way will be the position or care coordinator, because this is a new position and will require the hiring an payment of a newly staffed individual. Finally, long-term goals of an outpatient treatment program are to: reduce the number of individuals being sent to programs outside of Green County, reduce the risk of opioid addiction, and to reduce opioid use and dependency overall within Green County. These goals can be used to determine the establishment and success of the program over time.

Evaluation

While preliminary analysis of the literature provides some evidence that an ambulatory detoxification intervention with a combination of medication assistance, primary and mental health integration, and text-message follow-up with patients could be an effective management tool for opioid addiction in Green County, this data alone cannot predict program success. Evaluation programs are necessary pre-implementation, to ensure the maximum likelihood of intervention success, and will also need to capture post-intervention results, which should indicate whether the intervention is a viable alternative to inpatient treatment and provide data for potential program expansion (Brownson, Baker, Deshpande & Gillespie, 2018). Evaluation recommendations hereafter will be made with a focus on the Triple Aim of improvement of health care: improving the patient experience, reducing the cost of care, and improving population health (Berwick, Nolan, & Whittington, 2008). Recently, a fourth aim has been added to address provider well-being. We address this aim during implementation by creating a program coordinator position to facilitate communication between providers and assist providers in implementing the program.

Formative evaluation will be critical for establishing the partnerships necessary to carry out the intervention. Primary care and mental health service integration will require a network of providers to participate to be effective. To gauge willingness to participate in this component of the intervention, a formal survey of general practitioners and mental health service providers would be valuable. Method of survey should be carefully considered: evidence indicates that medical specialists, particularly psychiatrists have low response rates to web-based surveys

(Cunningham et al., 2015). In this case, mailed surveys may result in a higher response rate (Pit, Vo, & Pyakurel, 2014). Additionally, findings in this study indicate that a telephone call from a colleague before sending surveys may result in increased response rate to surveys. This is one of many areas where a coalition containing physician colleagues could be beneficial. A similar survey could be used to evaluate physician attitudes toward the proposed medication-assisted treatment portion of the intervention. Feasibility of the text-message component of the intervention will require a preliminary demographic analysis of Green County residents most likely to require opioid addiction management services, which is partially addressed in our health equity analysis: this would likely be acquired as internal data on opioid overdoses. This information would assist with assessment on likelihood of the at-risk population owning a cell phone. To predict patient interest in participation, a survey of the general population indicating interest in text-message follow-up for general medical or mental health care may be beneficial. For all three components, an upfront cost-analysis should be considered, particularly for the proposed nurse coordinator to facilitate communication and follow-up.

Process evaluation will also be important for implementing this intervention, since all components will require communication between providers and other individuals who may not be used to such coordination. The proposed nurse coordinator should be given the opportunity to provide formal feedback periodically on systems efficiency: specifically, how feasible and effective the coordination of communication between providers is, and any materials or systems that could be applied mid-implementation to improve the coordination process. The nurse coordinator should also be encouraged to provide similar feedback on the text-message follow-up program, including any inefficiency with technology or difficulty coordinating messages with all program participants. In addition to the nurse coordinator, participating providers should be recruited to a follow-up focus group to assess the primary care integration component (focusing on perceived gaps in communication) and the medication assistance component (with the opportunity to discuss standards of practice, including medication and dosage of choice, as well as evaluation of patient medication adherence).

Impact and outcome evaluation will assist in assessing whether the intervention meets the Triple Aim. To assess patient satisfaction, voluntary surveys should be sent to all participants during program participation and after intervention completion. Given the nature of the text-message follow-up component of the intervention, it may increase response rates if a choice in survey administration is provided in a text message (providing the patient with the option to complete a mailed survey or a phone survey). This survey can be used to assess satisfaction with all three components of the intervention: whether patients find text message follow-up to be helpful, how they assess treatment from their providers, and whether they find outpatient medication assistance to be effective for them. Another way to assess patient satisfaction for the text-message follow-up component would be to track average response rate to messages, or to track how often messages are read by patients. This would not rely on responding to a survey and would capture non-responders. A similar method could also be used to assess primary care integration: tracking average number of provider communications or visits related to opioid addiction management while in the intervention program. For all three methods, simply tracking the proportion of patients to agree to participate in each component of the program and tracking whether they remain in each component of the program after specified time intervals, can give information on intervention use and satisfaction. These methods are indirect, and interpretation of data would be less clear than with patient surveys.

To assess improvement in population health, population mortality data from opioid overdose in Green County collected before the intervention and during regular intervals after the intervention can be used to create a baseline to compare mortality data from intervention

participants. This data can be used to assess the overall trend of opioid addiction-related deaths in Green County, serving as a valuable indicator to specifically evaluate the outcomes of intervention participants. For the medication-assistance component of the intervention, retention time is an important indicator for both inpatient and outpatient programs (Simpson, Brown & Joe, 1997). Intervention retention could be monitored at 3, 6 and 12 months, to maintain consistency with available literature. The voluntary patient surveys mentioned above can also provide information about a patient's subjective evaluation of their own health improvement, with questions targeting both physical health (for example, an evaluation of withdrawal symptoms, or pain) and emotional health (signs of depression or thoughts of drug use).

To assess reduction in cost of care, a preliminary assessment of current inpatient programs will be necessary. Internal data will likely be necessary for this, although there is some literature available to estimate this. For instance, the substance abuse services cost analysis program provided methodology to estimate cost of services at methadone clinics, estimating a cost of $8 per patient per week for ongoing medical services and $106 for an initial treatment planning session (Zarkin, Dunlap, & Homsi, 2004). This estimate data may be helpful if internal data is not available. Inpatient program data can then be compared to cost per capita for the proposed outpatient program, which can be estimated by budgeting necessary line items for the intervention. Examples of items that would need to be considered include staff salaries, particularly if the proposed nurse coordinator is utilized and materials necessary to implement and evaluate the program (postage for surveys and acquiring any necessary information technology for the nurse coordinator to facilitate communication are examples). This data can also be used to quantify the need for external funding sources, since searching and applying for grants alone can be a time (and cost) investment.

These evaluation tools should provide parameters to assess whether this intervention strategy is feasible and, if used, whether improvement in outcomes is sufficient for sustenance or expansion.

Funding Sources

There are a few options available for funding the medication and staffing needs of this program. Medicaid in Wisconsin covers prescriptions for all three major medication assistance drugs (methadone, buprenorphine, and naltrexone), as well as covering some aspects of outpatient treatment if the program becomes accredited ("Medicaid's Role in Addressing the Opioid Epidemic | The Henry J. Kaiser Family Foundation," 2018). Grants for substance abuse prevention and treatment programs are available through grants.gov as well as the Substance Abuse and Mental Health Services Administration (SAMHSA) website. A few specific to consider from grants.gov are: HRSA-19-081, PA-18-074, PAR-18-222, PAR-18-223, and HRSA-19-086. The Wisconsin Substance Abuse Prevention and Treatment Block Grant (SABG) is also available if the program were also to add a portion of prevention prior to implementation. A final resource would be to use the Center for Substance Abuse Treatment, which offers grants as well as additional resources to substance abuse treatment programs.

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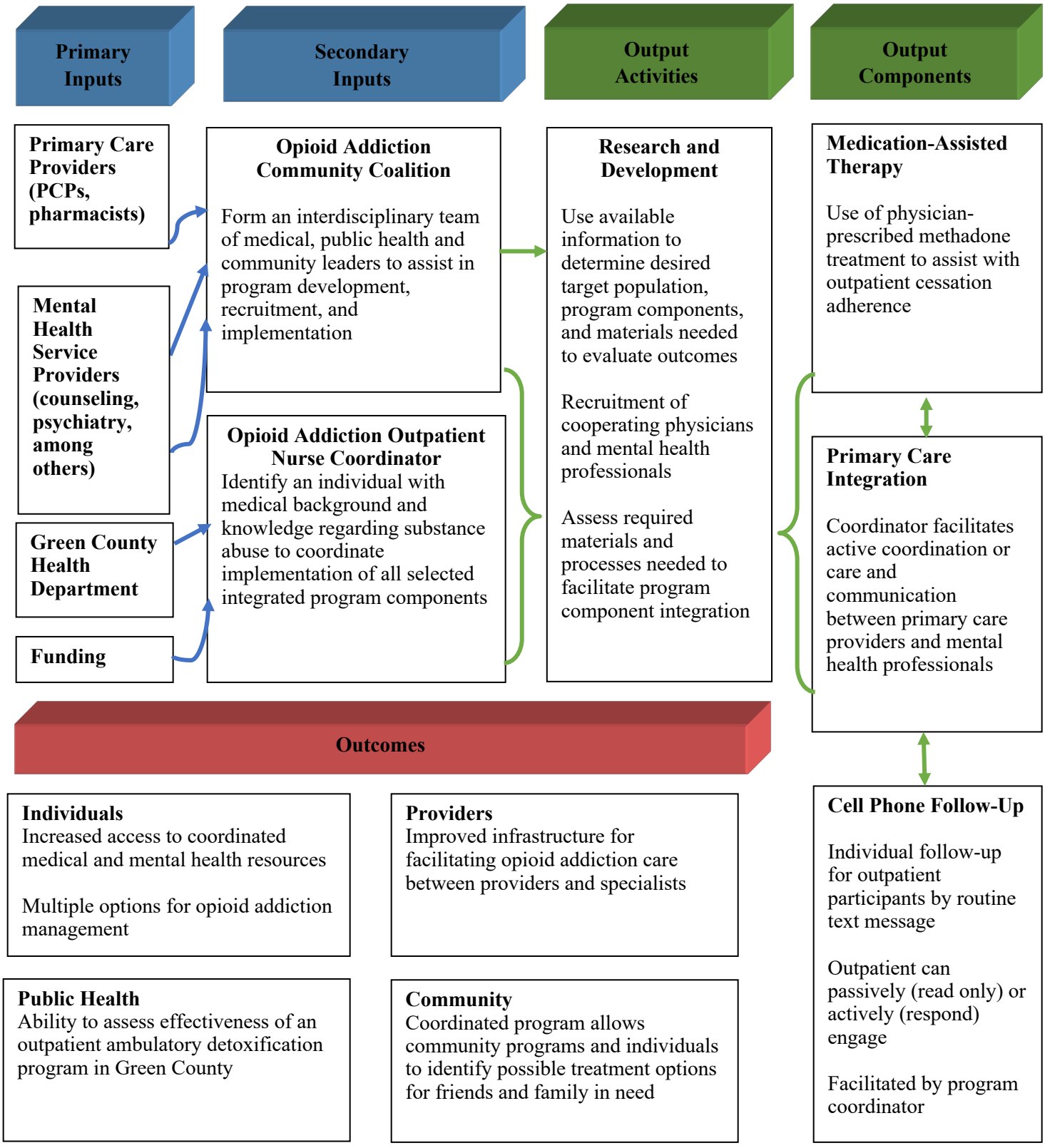
Logic Model



Assumptions and External Factors

- Community support and willingness to participate in program components (individuals and providers)
- Required infrastructure to facilitate communications is available in the community
- Patient population will generally have access to mobile phones and are able to make outpatient clinic visits.

References

Buprenorphine Treatment Practitioner Locator. (n.d.). [Text]. Retrieved November 19, 2018, from https://www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator

Baylor, C. (2015, June 16). MAT Training Materials and Resources [Text]. Retrieved November 20, 2018, from https://www.samhsa.gov/programs-campaigns/medication-assisted-treatment/training-materials-resources

Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The Triple Aim: Care, Health, And Cost. *Health Affairs*, *27*(3), 759–769. https://doi.org/10.1377/hlthaff.27.3.759

Brownson, R. C., Baker, E. A., Deshpande, A. D., & Gillespie, K. N. (2018). *Evidence-based public health* (3rd ed.). Oxford: Oxford University Press.

Centers for Disease Control and Prevention (August 30, 2017). Understanding the Epidemic. Retrieved from https://www.cdc.gov/drugoverdose/epidemic/index.html

Chou, R., Korthuis, P. T., Weimer, M., Bougatsos, C., Blazina, I., Zakher, B., … McCarty, D. (2016). *Medication-Assisted Treatment Models of Care for Opioid Use Disorder in Primary Care Settings*. Rockville (MD): Agency for Healthcare Research and Quality (US). Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK402352/

Cunningham, C. T., Quan, H., Hemmelgarn, B., Noseworthy, T., Beck, C. A., Dixon, E., … Jetté, N. (2015). Exploring physician specialist response rates to web-based surveys. *BMC Medical Research Methodology*, *15*(1), 32. https://doi.org/10.1186/s12874-015-0016-z

Day, E., & Strang, J. (2011). Outpatient versus inpatient opioid detoxification: A randomized controlled trial. *Journal of Substance Abuse Treatment*, *40*(1), 56–66. https://doi.org/10.1016/j.jsat.2010.08.007

GCL-Mental-Health-Guide-3.pdf. (n.d.). Retrieved from http://greencountyhealth.org/wp-content/uploads/2015/10/GCL-Mental-Health-Guide-3.pdf

Green County Healthy Community Coalition (2016). 2016 Community Health Needs Assessment. Retrieved from http://greencountyhealth.org/wp-content/uploads/2012/03/2016-Community-Health-Needs-Assessment.pdf

Green County Human Services (2018). Alcohol & Other Drug Abuse (AODA). Retrieved from https://www.gchsd.org/alcohol-other-drug-abuse-aoda

Haibach, J. P., Beehler, G. P., Dollar, K. M., & Finnell, D. S. (2014). Moving Toward Integrated Behavioral Intervention for Treating Multimorbidity Among Chronic Pain, Depression, and Substance-use Disorders in Primary Care: *Medical Care*, *52*(4), 322–327. https://doi.org/10.1097/MLR.0000000000000098

Mason, M., Ola, B., Zaharakis, N., & Zhang, J. (2015). Text Messaging Interventions for Adolescent and Young Adult Substance Use: a Meta-Analysis. *Prevention Science*, *16*(2), 181–188. https://doi.org/10.1007/s11121-014-0498-7

Medicaid's Role in Addressing the Opioid Epidemic | The Henry J. Kaiser Family Foundation. (2018, February). Retrieved November 19, 2018, from https://www.kff.org/infographic/medicaids-role-in-addressing-opioid-epidemic/

Minnesota Evidence-based Practice Center, Minneapolis, Minnesota. (2008). *Integration of mental health/substance abuse and primary care* [Data set]. American Psychological Association. https://doi.org/10.1037/e508052009-001

Pit, S. W., Vo, T., & Pyakurel, S. (2014). The effectiveness of recruitment strategies on general practitioner's survey response rates – a systematic review. *BMC Medical Research Methodology*, *14*(1), 76. https://doi.org/10.1186/1471-2288-14-76

Simpson, D. D., Brown, B.S., & Joe, G.W. (1997). Treatment Retention and Follow-Up Outcomes in the Drug Abuse Treatment Outcome Study (DATOS). Psychology of Addictive Behaviors, 11(4), 294-307. https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=172397

Sordo, L., Barrio, G., Bravo, M. J., Indave, B. I., Degenhardt, L., Wiessing, L., … Pastor-Barriuso, R. (2017). Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *BMJ*, j1550. https://doi.org/10.1136/bmj.j1550

Timko, C., Schultz, N.R., Cucciare, M.A., Vittorio, L., & Garrison-Diehn. C. (2015, December 17). Retention in medication-assisted treatment for opiate dependence: A systematic review. *Journal of Addictive Diseases, 35*(1). Retrieved November 19, 2018, from https://www-tandfonline-com.ezproxy.library.wisc.edu/doi/full/10.1080/10550887.2016.1100960?scroll=top&needAccess=true

Tofighi, B., Nicholson, J. M., McNeely, J., Muench, F., & Lee, J. D. (2017). Mobile phone messaging for illicit drug and alcohol dependence: A systematic review of the literature: A systematic review of the literature. *Drug and Alcohol Review*, *36*(4), 477–491. https://doi.org/10.1111/dar.12535

U.S. National Library of Medicine (October 1, 2018). Opioid Abuse and Addiction Treatment. Retrieved from https://medlineplus.gov/opioidabuseandaddictiontreatment.html

Wisconsin Department of Health Services (2018). Opioids. Retrieved from https://www.dhs.wisconsin.gov/opioids/index.htm

Zarkin, G. A., Dunlap, L. J., & Homsi, G. (2004). The substance abuse services cost analysis program (SASCAP): a new method for estimating drug treatment services costs. *Evaluation and Program Planning*, *27*(1), 35–43. https://doi.org/10.1016/j.evalprogplan.2003.09.002

About UniverCity Year

UniverCity Year is a three-phase partnership between UW-Madison and one community in Wisconsin. The concept is simple. The community partner identifies projects that would benefit from UW-Madison expertise. Faculty from across the university incorporate these projects into their courses, and UniverCity Year staff provide administrative support to ensure the collaboration's success. The results are powerful. Partners receive big ideas and feasible recommendations that spark momentum towards a more sustainable, livable, and resilient future. Join us as we create better places together.

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