



**DURHAM**  
**Health**  
**INNOVATIONS**

# THE DURHAM HEALTH INNOVATIONS PROJECT

---

## **RETHINKING PAIN: COLLABORATIVE APPROACHES FOR PAIN, SUBSTANCE ABUSE, & PSYCHIATRIC ILLNESS**

**COMMUNITY CO-LEAD:** Cathleen Melton, MD  
*Lincoln Community Health Center,  
Adult Medicine*

**DUHS CO-LEAD:** Fred Johnson, MBA  
*Duke University Medical Center,  
Division of Community Health*

**PROJECT MANAGERS:** Aaron Stoertz & Sarah Weaver

### **TEAM MEMBERS**

**Amy Abernethy**, Duke Pain and  
Palliative Care

**Gail Aiken**, Bridges Pointe  
Foundation

**Peggy Anglin**, Duke Physical  
Therapy

**Jennifer Asbell**, Duke Pain,  
Palliative Care and Neurology

**Kim Beverley**, Durham  
Department of Social Services

**Lynn Bowlby**, Duke Outpatient  
Clinic

**David Boyd**, Duke Global Health Institute

**Paul R. Chelminski**, UNC Division of General Medicine

**Rachel Clark**, Easterseals UCP NC

**Remy Coeytaux**, Duke Community and Family Medicine

**Jessica Colquhoun**, Duke Outpatient Clinic

**Beverly Council**, Durham Police Department

**Lauren Durant**, B & D Behavioral Health Services

**Christopher Edwards**, Duke Biofeedback Lab and Pediatric Neuropsychology Service

**Holly Eggert**, Duke Physical Therapy

**Teresa Fleming**, BAART Community Health Care

**Anne Marie Fras**, Pain, Palliative Care and Neurology

**Julia Gamble**, Lincoln Community Health Center Health care for the Homeless

**Tuwana Garrett**, Duke Division of Community Health

**Celine Goue-Sai**, Durham Academy

**Tina Howard**, The Durham Center LME

**Melania Layton**, BAART Community Health Care

**Jennifer Meade**, The Durham Center

**Jane Moritz**, Just For Us Program

**Anne Oshel**, Adult System of Care / The Durham Center LME

**Michael Pignone**, UNC Division of General Medicine & Clinical Epidemiology

**Philip Rodgers**, Duke University Medical Center

**Carol Saur**, Duke Primary Care Pickett Road

**Evelyn Schmidt**, Lincoln Community Health Center

**Charles Sheets**, Duke Physical Therapy

**Kathy Shipp**, Duke Physical Therapy

**Justine Strand**, Duke Medicine Physician Assistant Division

**Marvin Swartz**, Duke Social & Community Psychiatry

**Ashley Thomas**, Bridge II Sports/US Paralympic Sport Club

**Gloria Trujillo**, Duke Family Medicine

**Carey Unger**, Duke Pain, Palliative Care and Neurology

**Tonya VanDeinse**, The Durham Center LME

**Karen Verhaeghe**, Alternative Care Treatment Systems, Inc.

**Sandra Waters**, NCCU Dept. of Psychology

**Wendy Webster**, Duke Clinical Psychiatric Services

**Elaine Whitworth**, Bridges Pointe Foundation

**Sally Wilson**, Project Access of Durham County

# TABLE OF CONTENTS

---

<b>EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>BUILDING THE TEAM &amp; COMMUNITY ENGAGEMENT.....</b>	<b>8</b>
<b>PROPOSED MODEL OF CARE .....</b>	<b>11</b>
<b>KEY ELEMENTS OF A CONNECTED CARE MODEL .....</b>	<b>18</b>
<b>REFERENCES.....</b>	<b>20</b>
<b>APPENDICES.....</b>	<b>25</b>



## RETHINKING PAIN

### EXECUTIVE SUMMARY

*"I just want to turn and run away."*

–local medical resident, on seeing that a patient with 'chronic low back pain' had been added to his morning panel.

The biomedical model, which focuses on pharmacological interventions and pain metrics, fails the chronic pain patient and primary care provider. Chronic pain, like other chronic illnesses treated in primary care, frequently coincides with mental illnesses such as depression and substance abuse— coexisting conditions that are difficult to treat without appropriate support.

While chronic pain is a significant burden to the Duke University Health System, Lincoln Community Health Center and the Durham community, a number of factors prevent compliance with guidelines for chronic pain treatment. Many other chronic conditions (i.e. diabetes, heart disease, hypertension, HIV, obesity, some cancers) share this paradigm of untreated coexisting depression, anxiety and substance abuse.

#### Conclusions

Following a community-based participatory research process focused primarily on the provision of care, we conclude that the mental health field (including substance abuse treatment) is an under-utilized resource in all types of chronic disease but especially chronic pain. We focus on provider-level and clinic-level strategies to recognize and provide mental health support in the treatment of chronic pain and chronic disease within the primary care office. Our recommendations represent changes that could redesign primary care to take a first-line role in mental health and substance abuse treatment. We predict our model will improve clinical outcomes across the chronic disease spectrum, improve coordination of care and reduce stigma associated with mental health treatment.

#### Key short-term (12 months) recommendations:

1. *Support primary care clinics with mental health service providers:* pilot integrated models of primary care in which mental health service providers are integrated into each of the three largest primary care clinics in Durham (DOC, Lincoln and DFM). Minimally, this pilot might include rotating 1.0 FTE between clinics while giving phone support as needed.
2. *Change the clinical conversation:* provide training for health care providers to learn motivational interviewing techniques for to shift the chronic pain conversation from pain to function.
3. *Reform referral expectations:* create templates and expectations for structured communications between primary care providers and specialists to improve information exchange about chronic pain treatment.
4. *Produce an opioid education campaign and countywide standards:* the Durham community requests public information about the risks and benefits of opioids to promote open conversations with providers, family and the community about substance misuse. Durham providers request tools to risk-stratify prior to prescribing opioids as well as improved consistency between Durham County providers.

#### Key medium-term (2-5 years) recommendations:

1. *Support mental health and substance use programs with primary care providers:* pilot integrated model of care in which a primary care provider is integrated into facilities treating patients with severe mental health or substance use issues, such as the methadone clinic. This pilot might minimally include sharing 1.0 FTE between such facilities.
2. *Stop the revolving door on the emergency room:* create a specialized Durham Regional Emergency Department track for generalized pain complaints not associated with obvious injury. This track would include a visit with



a substance abuse specialist as well as screening for possible aberrant behaviors.

3. *Create an updated information and referral system:* to give providers lists of resources for non-pharmaceutical treatment options for chronic pain and to clarify the consultation request and response. Mental health and county health system must be included.
4. *Create community-wide virtual plan of care:* Create a community-wide virtual plan of care or virtual meeting place for shared responsibility of clinical care.
5. *Implement policy changes:* a) rewrite Duke's consent form using language developed by the Substance Abuse and Mental Health Services Administration to include sharing of notes between medical and mental health providers; b) allow non-MDs to practice acupuncture in Duke-affiliated clinics.

## HEALTH NEEDS & METRICS

### Chronic pain

While pain is the oldest patient complaint, it has historically been viewed as simply that: a *complaint* or symptom to be wiped away to uncover underlying disease. Traditional medical paradigms focus on finding anatomic causes and “curing” pain with medications and surgical interventions. When the pain in question is *chronic* pain (broadly defined as pain which has persisted beyond normal tissue healing time) this approach all too often proves to be both expensive and ineffective. The mainstays of the traditional approach – including radiologic testing, surgical procedures and opioid prescriptions - are contributing to soaring health care costs with unclear clinical benefit. Patients with chronic pain use the medical system five times more, and cost two to five times more, than the general population (Elliott, Smith et al. 1999; Chelminski, Ives et al. 2005). This makes efficacy of chronic pain treatment a significant cost-containment strategy for national, state and regional health systems.

### Opioids

Researchers have identified a lack of literature to support the long-term efficacy and safety of opioids as a treatment for non-malignant chronic pain, (Arner and Meyerson 1988; Eriksen, Sjogren et al. 2006; van Tulder, Koes et al. 2006). Nevertheless, opioids are commonly prescribed to treat non-cancer chronic pain (Jamison and Ross 2002). The US has seen an increase in the treatment of all types of pain with opioids, starting in the late 19080’s and moving through the 1990’s (Eriksen, Sjogren et al. 2006). The increasing use of opioids has had unexpected consequences for communities. A sequential cohort study conducted by the National Institute on Drug Abuse since 1975 has shown more than a two-fold increase in the prevalence of nonmedical use of prescription opioids among US 12<sup>th</sup> graders in the last two decades. At the same time opioid-related ED visits for all groups have shown a more than two-fold increase from 1995 to 2002 (Gilson and Kreis 2009). Durham-specific data displayed in Table 1 may indicate a frightening trend in accidental death due to overdose of prescription narcotics.

### Patient-provider challenges

Although the practice of *pain medicine* was established in 1973 as an interdisciplinary field, the majority of chronic pain continues to be treated by generalists. Patients and providers alike are frustrated by the difficulty of effectively treating chronic pain. This frustration can be compounded by differences in provider and patient beliefs about pain and courses of treatment (Brown 2004).

Treatment is frequently complicated by concurrent obesity, depression, substance abuse, and a variety of health behaviors that may subvert traditional treatment paradigms. In such cases, it is difficult to determine whether pain results from comorbidity and/or whether the comorbidity results from pain. When opioids are prescribed, it is also difficult to distinguish whether the

*“If I had known from the beginning [of opioid therapy] what I know now about myself, I never, ever, ever would have started that stuff.”*

– Durham resident with chronic pain reflecting on the problems she has faced with substance misuse.

	Deaths	Hospital	ED
1999	7	-	-
2000	11	-	-
2001	9	-	-
2002	15	-	-
2003	14	-	-
2004	15	76	-
2005	12	89	-
2006	19	104	156
2007	22	111	174
2008	24	-	329
Total	148	380	659

Table 1: Deaths, hospitalizations and emergency department admissions due to accidental poisonings in Durham County. The majority of the poisoning deaths are narcotic related. Dash in cells indicates no data available for this year. (Source: NC Division of Public Health, Injury Epidemiology)

primary benefit to the patient is temporary relief from a co-occurring mental health condition that could be effectively treated by non-pharmacological interventions.

### **New paradigm**

Recent research attempts to address the complexities identified above by re-characterizing chronic pain as a combination of mental and physical distress with social, spiritual and emotional factors. The Institute for Clinical Systems Improvement released a guideline in 2008 that deemphasizes the role of opioids in chronic pain therapy and calls for setting personal goals, improving sleep, increasing physical activity and managing stress and, lastly, decreasing pain in every treatment plan for chronic pain. The guidelines also recommend a wider range of therapy including acupuncture and Mindfulness Based Stress Reduction, as part of a large variety of evidenced-based current best practices that are included in their treatment algorithm (Ezzo, Berman et al. 2000; ICSI 2008). These guidelines reflect a new biophysical modality, aimed at client self-management with multimodal medical support (Leyshon 2009). Psychological interventions for chronic pain, used as part of this treatment strategy, are well documented to be effective (Vlaeyen and Linton 2000; Habib, Morrissey et al. 2003).

### **Rethinking pain project overview**

In this project we focus on Durham County, North Carolina. We are interested in how chronic pain is currently treated, what resources are used to treat chronic pain and how we might redesign primary care to more appropriately treat chronic pain. We have employed an active community-engagement process that includes case studies, key informant interviews, community-based advisory meetings, a large community dialogue and a 5-year retrospective study on chronic pain in the Duke University Health System. Our target population is comprised of Durham County residents over the age of 18 who suffer from non-malignant chronic pain. Our discussion of chronic pain overlaps with but does not implicitly include physiologically immature adolescents, children, or those that suffer cancer pain or need palliative care or end-of-life management. We note significant overlap with these populations and will discuss how our recommendations will reach a much broader audience than those that suffer from chronic pain according to this limited definition.

### **Chronic pain and opioids in Durham County**

Based on a combination of qualitative and quantitative data from various sources, we attempted to quantify the burden of chronic pain in Durham. Unfortunately, it seems to be poorly coded and thus prevalence rates are very hard to approximate. Many providers were not sure that they had *ever* coded chronic pain correctly. The data from Duke University Health System is also limited by reporting and capture issues and should be taken as approximate rather than exact measurements of the current community health status.

In the five years from 2004 to 2008, the Duke University Health System saw an average of 13,336 Durham residents with some form of chronic pain per year (See Appendix A for the ICD-9 codes used to identify our patient cohort). These patients with chronic pain are predominately female (59.6 %). Blacks and whites comprise the most common racial groups (41.5 % and 52.5% respectively). The median age of patient between 18 and 116 years old with chronic pain over the past five years is 45 years old.

While these numbers represent actual chronic pain diagnoses, we can also use a number of other measures to approximate the current impact of chronic pain treatment on our community. From July 2007 to October 2008, providers in Durham County wrote over 143,228 narcotics prescriptions for 7,848,348 pills. This is approximately 113,000 narcotic pills added to Durham

County per week going to roughly 2,000 individuals (data purchased from Health Information Designs and the NCPDM Program). Death due to accidental overdose and poisoning is consistently the 2<sup>nd</sup> or 3<sup>rd</sup> leading cause of injury death in Durham since 1999 (behind automobile accidents). The majority of these (83% in 2008) are narcotic-related. In 2008 accidental overdose was tied with firearm assaults for the 2<sup>nd</sup> leading cause of injury death (see Table 1).

## Measures

One difficulty in establishing metrics has been the lack of consistent and accurate coding for chronic pain. As a result, we felt that incidence and prevalence rates of chronic pain would provide an inherently unreliable baseline against which to measure the success of our model. While we hope that one effect of our intervention could be improved coding for chronic pain, for the purposes of this project we defined our metrics in a way that we felt would incentivize more appropriate treatment of chronic pain with outcomes we could measure. See Table 2, below, for a list of eight key metrics.

Table 2. Key metrics for tracking progress on chronic pain in Durham County.

Metric	Source	Per	Goal
1. Opioid prescriptions filled in Durham County	CSRD	month	lower
2. Number of accidental deaths due to overdose of prescription drugs in Durham County	NCDPH, IESU	year	lower
3. Durham County hospital admissions for accidental poisonings involving prescription drugs	DDSR	year	lower
4. Number of documented repeated functional scores of adult patients with chronic pain	EMR tracking/registry	year	higher
5. Number of providers trained in motivational interviewing techniques for adult patients with chronic pain	EMR tracking/registry	year	higher
6. Number of Emergency Department visits by patients who comprise the top 10% of ED utilizers with chronic pain diagnoses	EMR tracking	year	higher
7. Number of residents trained with a chronic pain curriculum	Tracking tool	year	higher
8. Number of behavioral health specialists trained in chronic pain issues	Tracking tool	year	higher

\*CSRD = Controlled Substance Reporting Database; NCDPH, IESU = North Carolina Division of Public Health, Injury Epidemiology & Surveillance Unity; DDSR = Duke Data Support Repository; EMR = electronic medical record (i.e. Duke's eBrowser or Lincoln's Practice Partner)

## BUILDING THE TEAM & COMMUNITY ENGAGEMENT

### Community Based Participatory Research

#### Team formation

In early 2007, several clinicians involved in the Durham Community Health Network met in the basement of Duke Family Medicine to discuss issues related to patients with pain and substance abuse. They represented the three largest primary care adult practices in Durham caring for 90% of Durham's adult Medicaid population: Lincoln Community Health Center, Duke Family Medicine, and the Duke Outpatient Clinic. In the meeting were representatives from the Emergency Department, Duke Pain Clinic, The Durham Center and the Methadone clinic. Together they shared two major organizational concerns: (1) primary care clinicians do not have supportive services or diagnostic tools to keep patients who suffered from chronic non-cancer pain who are risk of substance abuse engaged long enough to treat them; (2) many clinicians, and particularly residents, are ill-prepared to recognize and appropriately react to the persuasive acumen of the drug-seeking patient; and (3)



pain and suffering often unmask the substance abuse issues that either already existed or were promoted by use of prescription narcotics.

These clinicians formed the core group of what would become the DHI Rethinking Pain Steering Committee. Additional members were recruited via the professional networks and referrals of these original members. Members of the public began to join the team in April 2008, when the team was given the opportunity to recruit interested members of the public via attendees of the group's breakout session at the Duke-Durham Health Summit. This infusion of public support added patient and caregiver perspective to the team. Throughout the subsequent seven months of the planning process, new members were recruited to the Steering Committee via referrals from the professional and personal networks of established members. Additional members of the committee were recruited from organizations which the team had identified as playing key roles in the care of chronic pain patients in Durham County. The full complement of resources available for patients with chronic pain can be seen in the resource map in Appendix B.

### **Community Engagement**

Throughout this planning process, we sought to apply the overarching set of integrating principles of Community Based Participatory Research (CBPR) in our partnership with the Durham community. The Steering Committee became the driving force of our CBPR process, in which Committee members acted as representatives for the community of providers concerned with improving the care of chronic pain patients. Throughout the course of this CBPR process, the Steering Committee met monthly to guide the project and suggest possible new directions and committee members. Team members supplemented this perspective via a series of site visits and key informant interviews with providers who wished to share their expertise but were unable to participate in the more extended planning process.

In addition to the monthly whole group meetings, interested members of the Steering Committee also participated in two specialized work groups to more directly address specific aspects of our project. The *Pain and Solutions Work Group* guided the development of the *Patient Passport*, a new tool in which patients and providers collaboratively record the providers, medications and other processes involved in that patient's particular course of treatment (see Appendix C). This group also guided the team's exploration of the possible roles of physical therapy, behavioral psychology, and complementary and alternative medicine in our developing model. The *Substance Use, Misuse and Abuse* work group developed a glossary of proper terminology to address Substance Misuse (see Appendix D) and the creation of the *Opioid Education Flyer* (see Appendix E), a health education tool designed to provide patients and providers with a basic understanding of the risks of, and alternatives to, opioid therapies.

The community engagement process culminated in our Durham Community Dialogue on Chronic Pain, which was held at the Durham Marriott and attended by 136 community members who were involved in the treatment of chronic pain in Durham County or in similar initiatives at the state or regional level. The primary goals of the Dialogue were to gather feedback and additional community perspective for our project and to provide a capacity-building opportunity in which community members could work together to strengthen collaboration among organizations and improve patient care. We solicited participation via the electronic dissemination of our flyer to the professional networks of our Steering Committee members and via direct email to relevant organizations. Signs for the event were also posted in Duke University Hospital and in Durham Regional Hospital. Hard copies of the flyer were distributed to several cohorts of health care students in the Duke and UNC systems.

In keeping with CBPR practice, the Dialogue was structured around key issues which had

arisen in the course of our earlier community engagement work. Accordingly, the event featured a key note speech regarding shifting from pain to function in chronic pain patient care, followed by workshops on Pain and Palliative Care, Physical Therapy, Moving Chronic Care into the Community, Integration of Mental Health and Primary Care, Opiate Management, and Communicating with Patients with Substance Use Issues. Speakers and facilitators for the workshops were drawn from both the Steering Committee and from members of the larger community whom Steering Committee members suggested. Discussion topics for each workshop were developed via a collaborative process involving the Steering Committee and the participants in each session. The Dialogue concluded with a working lunch in which attendees provided suggestions for additions and improvements to our proposed model of care.

### **Assistance from the DHI Oversight Committee and Technical Assistance Core**

The insight gleaned from our community engagement process was supplemented by input and assistance from the DHI Oversight Committee and Technical Assistance Core. At the urging of the Oversight Committee, we determined key metrics which would measure the impact of our model on the health of the Durham Community. The Technical Assistance team provided the quantitative data and analysis which helped us determine the extent of the current problem and identify possible points for intervention in the community. This data was provided to the team in the form of maps reflecting patient population density in relation to resources and to relevant crime rates (see Appendix F), and via statistical analysis of the specific characteristics of chronic pain patients and their treatment, as available in medical records in the Decision Support Repository of the Duke University Health System.

### **Lessons learned**

The planning process taught the team many lessons, the most central of which is the importance of personal communication. We found that simply getting the right people in a room together was often the key to resolving both systems issues and interpersonal conflict. We also found significant gaps in the resources available for patients with chronic pain and substance abuse/mental health issues as well as gaps in provider understanding of other services. For example, we found that medical providers were often unaware of mental health techniques and resources, while mental health providers were often unaware of medical information and resources that could benefit their clients. This re-emphasizes the need for environments in which providers of various services can meet face to face. Finally, we were pleased to find that certain techniques from the mental health profession (including motivational interviewing, case management, and frequent follow up) were applicable across a wide variety of settings including the primary care clinic.

### **Successes so far**

One of the most successful components of our CBPR process has been the community activation triggered by our research process. We count several new initiatives around chronic pain that have begun as a result of connections formed through this project. For example, policy changes are currently in place to improve chronic pain patient care at Lincoln. Lincoln providers also now share a listserv with practitioners from Triangle Orthopedics to improve the flow of information and referrals between the organizations. The Duke Outpatient Clinic has developed an Opiate Management Clinic to care for patients with opioid prescriptions. Physical therapists in the Duke School of Physical Therapy are planning to establish a special program for chronic pain patients at the Lennox-Baker facility. Acupuncturists from Traditional Acupuncture are now working to set up a community acupuncture program at CAARE Inc. Finally, a group of board members and

practitioners working on chronic pain issues for Project Access of Durham County has asked to merge with the Rethinking Pain Steering Committee, lending an increased possibility for sustainability of our future efforts.

## **PROPOSED MODEL OF CARE**

Based on this iterative community engagement process of more than eighteen months of learning about chronic pain in our local community, we propose a new model of care that aims to remove current silos around primary care, mental health care and other evidence-based interventions for chronic pain. Unlike other proposed models, our proposal focuses on clinic-level and provider-specific interventions. We divided these recommendations into shovel-ready high impact changes for implementation within the next twelve months (short-term) and community-wide interventions that need more planning and could be implemented over the next two to five years (medium-term).

We start with short-term recommendations to: (1) redesign the delivery of care for chronic pain and other chronic illnesses; (2) recommend training and assessment tools for primary care providers to shift the exam room conversation away from pain and toward function; (3) promote effective structured referral processes supported by resource databases; and (4) conduct a social marketing campaign for opioid awareness targeted at providers and patients.

Our medium-term goals focus on changing the way providers communicate and share information to create a new connected care system for the Durham community.

### **New model of primary care for Durham**

We start by discarding many elements of *one-size-fits-all medicine* with an ever-increasing burden on the primary care provider (PCP). A central flaw in this model of primary care is that it is highly vulnerable to unpredictably complex presentations in clinical appointments - those that require careful attention and expert intuition to resolve. A complex case, such as one with chronic pain combined with mental health or substance abuse (MH/SA) diagnoses, effectively derails the scheduled flow of appointments later in the day. Thus the health care team is forced to spend just as little time on the complex patient as would be spent on a routine exam. While this may seem like an efficient daily model of clinical care, it creates an inefficient and ineffective long-term model of care. Our proposal seeks to correct this issue.

Rather than one-size-fits-all, we believe that a tiered model of care is a more appropriate design for primary care. This tiered model could be set up in many different ways, depending on the mixture of patients, clinical expertise, diseases and payors. Specifically, we recommend a three-tiered model of clinical care divided by complexity of disease state. This model separates primary care clinical visits by type into tiers based on the complexity of the job that needs to be performed by the clinical team.

At the base of this tiered model is Tier A, we find the non-chronic disease visit for routine screening, routine illness or minor complaint. Most clinical visits are in this precision-medicine category and so accurate routine tools can be used for diagnosis and treatment. Our current medical paradigm is very successful at this type of medical care. Though we might consider ways to innovate within this tier to decrease costs and steer the clinical interaction toward prevention, this is not the focus of our new model.

In the middle tier, Tier B, we include individuals with various types of chronic disease (including chronic pain) that require more refined diagnostic and intuitive clinical processes as well as more in-depth screening processes. This patient population requires a novel approach to primary care that integrates an ancillary clinical team member with mental health training into the

primary care clinic. A professional trained to use techniques common in the mental health profession (more on these techniques and who this person might be in *Low Risk Delivery Model* below) is the most appropriate person to have in this role due to the high rates of moderate depression, anxiety, addictive disease and other coexisting mental health diseases among those with any many types of chronic disease.

As we will demonstrate, this integrated care model is efficient and cost-effective and has been shown to improve disease-outcomes for chronic pain as well as other chronic illnesses. This model, which we will describe in greater detail below as a low-risk model for chronic pain treatment, represents a strategy to embrace the future of primary care as the front line mental health provider.

The third tier, Tier C, includes moderate-to-severe mental health diagnoses that co-occur with chronic pain or other complex chronic disease. Careful risk stratification in Tier A and especially Tier B identifies this smaller group of patients. They require referral into the mental health system and the involvement of one or more specialists, with clear ownership of the patient within the medical home backed up by a strong virtual plan of care that follows the patient through the full spectrum of their providers including mental health. We suggest that ownership of this patient is passed to the mental health system with primary care support for prescribing and treating non-mental health illnesses. Tier C depends on strong connected care elements with smooth transitions and good communication between service providers. We will further describe this model below as a high-risk model for chronic pain treatment. Figure 1 shows the generic model of three tiered care.

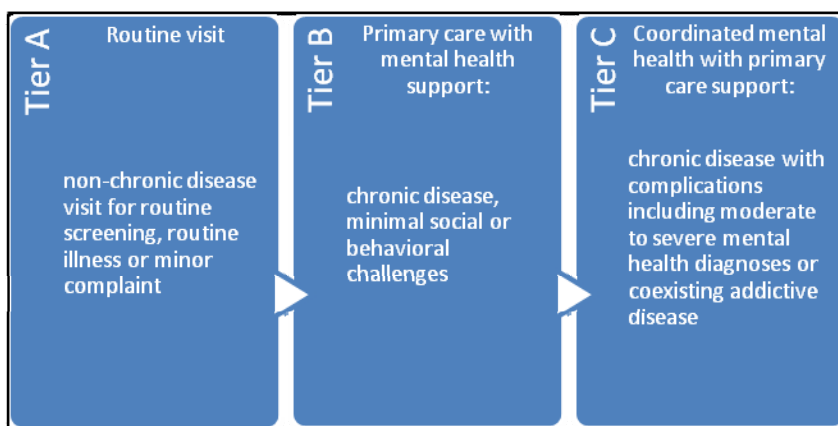


Figure 1: A 3-tiered model of care with brief descriptions of the type of clinical care that might be given in each.

We have briefly described a wide-reaching primary care clinical redesign that could be applied beyond chronic pain treatment. We present this based on our research and interaction with primary care and the mental health system in Durham County which has revealed difficulties in achieving coordinated guideline-driven health care without full cooperation between the mental health system and the primary care system. This reflects the larger failure of the traditional biomedical models which focus on curative measures through pharmacological intervention rather than the goal-driven behavioral interventions familiar to mental health profession. This paradigm in care - the focus on pharmacology to the detriment of guideline-recommended care options - is particularly evident in, but by no means unique to, chronic pain.

### Applying model to chronic pain

When we apply this tiered model to more specifically to chronic pain, we find that the Tier A includes those with intermittent or initial pain complaints—those patients not (yet) considered to have chronic pain and who are generally not treated with opioid therapy. Acute pain intervention has a clear set of guidelines for treatment and referral and is not the focus of this proposal however we would advise the implementation of these techniques as a preventive measure against chronic pain.

Tier B includes patients that have non-disabling chronic pain and are at relatively low-risk

for MH/SA illnesses based on a detailed clinical assessment. These patients may have mild depression, but may still be an active community member. They may also have a mild history of substance abuse or display mildly errant behavior but have not raised any yellow flags that warrant more intensive mental health intervention.

Tier C includes those patients that either already have, or at risk for developing, illnesses that require a specialist's attention. The individuals in this group have shown evidence of coexisting addictive disease, substance abuse or repeated misuse and/or may have a criminal history of illicit drug use. The individuals in this group may also have indications of domestic violence or sexual abuse, or may have severe anxiety or depression. These patients must be treated with care and are the most challenging for our system of connected care: they are easily lost to follow-up and represent the highest risk group in pharmacological treatment modalities.

For the sake of clarity, we have presented this tiered system as a categorical assessment for clarity alone. In reality, this model would play out as a continuum or risk stratification. Thus the ability of the health care team to effectively communicate and understand the patient's social and behavioral challenges is a key component of this model. Below we propose ways to support this communication through risk-stratification. Focusing on the practical applications of this model, we have reviewed current national and state clinical guidelines and propose methods for how to assess MH/SA risk in patients in a typical primary care setting.

## **Treatment Strategies**

### **Risk stratification**

The goal of risk stratification is to identify patients who may be at higher risk for treatment failure, may not be good candidates for opioid therapy and may require a different approach. A thorough history and physical examination, including an assessment of psychosocial factors and family history, is essential for adequate risk stratification. Implicit in the recommendation to conduct a comprehensive benefit-to-harm analysis is the recognition that an opioid trial may not be appropriate. Clinicians should obtain appropriate diagnostic tests to evaluate the underlying pain condition, and should consider whether the pain condition may be treated more effectively with non-opioid therapy rather than with opioid therapy.

Based on a review of literature and the key elements of the various tools, the following characteristics point to high risk and potential poor treatment outcomes: (1) history of substance abuse, (2) legal problems, (3) high risk aberrant behaviors, (4) family history of substance abuse, (5) age (16-45), (6) history of preadolescent sexual abuse, (7) psychological disease (ADHD, obsessive compulsive disorder, bipolar, schizophrenia, anxiety, depression), (8) deficits in the following: impulse control, assertiveness, memory, (9) those in an occupation demanding high mental acuity, and (10) patients with an unstable or dysfunctional social environment.

Screening tools that examine patient characteristics to assess the potential risks associated with chronic opioid treatment are likely to be helpful for risk stratification, though more validation and prospective outcome studies are needed to understand how their use predicts and affects clinical outcomes. Tools that appear to have good content, face, and construct validity include the Screener and Opioid Assessment for Patients with Pain (SOAPP) (see Appendix G), the revised SOAPP (SOAPP-R) (see Appendix H), the Opioid Risk Tool (ORT) (see Appendix I), and the Diagnosis, Intractability, Risk, Efficacy (DIRE) instrument (see Appendix J). DIRE is clinician-administered and is designed to assess potential efficacy as well as harms. The SOAPP, SOAPP-R and ORT are patient self-report questionnaires that assess risk of aberrant drug-related behaviors. No single instrument or assessment method has universal evaluative or predictive utility. Thus,



multiple techniques and tools should be used. Our recommendations for screening prior to initiation of opioid therapy in Durham include as many of the following as are relevant: (1) query the online North Carolina Controlled Substance Database, (2) query the online criminal records database for drug and alcohol use or abuse, (3) review past medical records, (4) administer the ORT and DIRE tools, (5) speak with family members and get their view of situation and level of involvement and (6) have a conversation with other treating providers (such as mental health provider).

### **Cross-disciplinary learning**

As our community engagement process has evolved, we have learned about the difficulties that primary care providers share when communicating with patients about the decision to start or continue opioid therapy. Trust, fears about over- and under-treatment of pain, threat of legal action and personal beliefs about pain all crowd together to make the exam room conversation about opioids a particularly thorny one for clinicians and patients alike. This conversation though is essentially the latch-pin of appropriate treatment for chronic pain. The moment when patient and provider feel most vulnerable is the most important moment for proactive prevention and honest discussion. This can be achieved by shifting the conversation from pain to function.

As a response to this challenge to our model, we recommend training opportunities for health care providers to learn Motivational Interviewing techniques for diseases they feel they are under-prepared to treat. These techniques have been championed in our local community by James Talky, MD and Paul Nagy, MD and Kat Pollock, clinical psychologist. These techniques help the provider to understand the underlying belief-systems of the patient in order to more effectively collaborate to set health goals that can be sustained by these beliefs. These techniques are can be used by many different providers at many different professional levels.

We also recommend additional training in chronic pain recognition, etiology and treatment for mental health professionals in Durham. They need to better understand the client with chronic pain whom they are treating for substance addiction or severe mental health illness. This will promote coordinated, effective treatment for the many patients that are seen by both systems.

### **Population management**

The capability to identify, categorize and target major patient cohorts enable the health system to better strategize and utilize its resources for population management. Today, data mining is a shot in the dark with a shotgun. For a health system to determine effective care quality metrics and objectives, in any population, it needs the ability to mine accurate encounter data. This is particularly significant when it involves a large cohort of complex patients, such as chronic pain patients. We recommend the medical community should come together and reach agreement on common definitions and utilization of patient ICD codes.

Primary and secondary codes should be based upon presenting condition and treatment program. We recommend third, fourth or fifth codes should be added, not for billing purposes, instead for population management. The additional code would be driven by an agreed upon community algorithm that would define patients into major domains, such as chronic pain syndrome or long term chronic pain. The algorithm can be defined using a combination of ICD 9 codes, HEDIS definitions, national chronic pain guidelines, and patient pharmaceutical therapy. This reflects recommendation #9 of the Institute for Clinical Systems Improvement (ICSI 2008).

### **Structured referral**

Primary care providers, specialists and mental health providers have requested more structured referral processes to help guide their communication processes. We recommend a

rudimentary template for referral (see Appendix K) that could then be built into an information and referral module in a virtual plan of care over the next several years.

**Social marketing**

Our model and supporting components are not enough to create a widespread public health benefit in Durham. This training and clinic redesign should be paired with a strategic marketing campaign. This campaign would have two principle target markets—the general public and health care providers. Both arms would be educational and informative with positive messages offering alternatives to opioid therapy such as physical, behavioral and self-management modalities. This campaign would encourage people to think about other healthy alternatives before started opioids.

**Complementary & Alternative Medicine (CAM)**

All current national guidelines for chronic pain include the use of Complementary and Alternative Medicine as an integral treatment strategy for chronic pain. Modalities with a strong and growing evidence-base include both acupuncture and herbal products. With expert advice from trained practitioners, these modalities could serve a major role in cost-effective chronic pain treatment. They also serve to decompress the primary care clinic by allowing people to seek non-pharmacologic health care interventions outside the clinic walls.

**Mechanism of delivery for low-risk care delivery (Tier B)**

The low-risk care delivery model hinges around the unique integration of a Mental Health Service Provider (MHSP) within the primary care practice. The MHSP’s primary role is to support

**Table 3. Major treatment plan modalities in integrated clinic setting:**

Behavioral	Motivational interviewing Cognitive behavioral therapy Dialectical behavior therapy Substance Abuse Counseling
Physical	Active and passive range of motion Tone and strengthening Physical therapy
Pharmacologic	Non-steroidal anti-inflammatory (NSAIDs) Antidepressants A-adrenergic antagonist Membrane stabilizing drugs Opioids
Interventional	Neural blockade Neuroaugmentation Biofeedback-relaxation technique
Complementary & Alternative	Acupuncture Mindfulness training
Self Management	Disease and Health (exercise, pacing, restorative sleep, pain diary, distraction) Emotions (stress management, relaxation exercises, meditation, guided imagery) Role (adapt roles, learn to communicate boundaries, address self discrepancies)

the prescribing physician with assessment and treatment for the person with chronic pain. The MHSP works within the medical exam room areas as a core team member and would ideally take an immediate handoff following the medical visit. This component is crucial to reducing stigma normally associated with mental health visits. These visits with the patient are short (15-25 minutes) and are consultatively oriented.

The primary care physician retains ownership of the health care plan. In assessment, the MHSP performs risk stratification, using the methods outlined above, a learning needs assessment to determine what education might be appropriate, as well as other screening and preventive education activities. With input from their previous goal setting, medical assessment, diagnosis and health risk assessment the primary

care provider would set up a treatment plan including elements found in Table 3.

The MHSP is then responsible for helping to carry out elements of the treatment plan with the patient. These treatment activities are in Table 4. Based on these tasks a clinic might choose a clinician with a different training framework depending on their patient population and needs. Certain levels of training could carry out all of these functions, others might only be able to work on some subset of these activities. The MHSP also has the important responsibility to conduct the Screening, Brief Intervention, and Referral to Treatment recommended by the Substance Abuse and Mental Health Services Administration that has now become the reimbursable gold standard for mental health and substance abuse screening. This screening, which includes the risk-stratification described above in *Risk Stratification*, must happen early when chronic disease is suspected, before the initiation of opioid therapy.

Mental health support	Motivation interviewing to promote realistic goal setting Cognitive behavioral therapy Dialectical behavior therapy Monitor substance abuse indicators Check database for pharmacy utilization Count pills
Social support	Involve family Case management Link to community resources Link to community resources
Communication	Patient advocacy Frequent contact with primary providers Consultation with mental health providers when necessary
General clinical support	Carry out the SBIRT Maintain the focus on function Reinforce primary care provider education
Teaching	Establish self-management goals Classes on self-management

The exact colocated position could be dependent on the clinical expertise and the population that the clinic serves. Several examples of possible colocated personnel are shown in Table 5.

Crucial elements to this low-risk model include daily face-to-face communication between the mental health provider and primary care provider as needed. Communication can also be supported with a strong virtual plan of care imbedded in an electronic medical record. Regular meetings should take place to discuss challenging cases. The team should set up a chronic pain registry for goal setting and outcomes tracking and a pain management contract must be in place for every patient treated with opioids. The mental health support person should take the leadership role in initiating and administering the pain contract that should be signed by the prescriber, the mental health professional and the patient. Regular monitoring of medication safety and compliance is better accomplished by this team approach.

**Table 5: Potential Behavioral Health Clinical persons for integrated models of primary care in Durham County.**

Clinical Role	Training	Ideal population	Sustainability	Durham Clinic	Triangle Education Program?
Physician's Assistant trained in Psychiatry	PA-C	Insured, Medicaid/Medicare	Easily sustained with moderate patient load	DMOC, DFM,	Duke
Psychiatric-Mental Health Nurse	PMHN	High mental health insurance coverage	Depends on payor reimbursement policy	DMOC, DFM	NCCU, UNC
Psychologist	PhD	High mental health insurance coverage or colocated model	Difficult to sustain if not colocated with separate panel to offset costs	Lincoln CHC	Duke, UNC
Social Worker	LCSW	Low-income; significant social determinants present	Difficult for small clinic to sustain, very cost effective for larger clinic due to improved outcomes and reduced hospitalizations	EI Clinic	NCCU, UNC
Pharmacist with MBSR training	PharmD	Narcotic management	Must be supported by auxiliary activities	DOC	UNC

### Variations on the low risk model

A number of variations on the low-risk model of chronic pain care have come to our



attention. All have been piloted in other communities with success and many are replicas of proven interventions for other chronic diseases. A group medical visit with a psychologist, physician and social workers has proven very successful for opioid management at a clinic in San Diego, CA. A number of sources has suggested regular mandatory education sessions (2 times per year) for those on long-term opioid therapy. Lincoln’s Homeless Shelter Clinic may be starting a video link for psychiatry visits with their clientele with chronic pain. Other potential models include social support groups or peer support networks for those in chronic pain. Offering CAM in innovative, low-cost settings has also been a recurrent topic throughout our planning process and may be piloted at CAARE in the coming months. These and other variations are show in Table 6 below.

Table 6: Other possible aspects of the model of low-risk care delivery.

Possible aspects
“Clinic within a clinic” (with classes to augment self-management modalities)
Colocation of substance abuse counselor or behaviorist
Shared substance abuse counselor among several sites with phone assistance available augment with classes or group visits
Physical therapist with chronic pain interest is part of the team
Health coach with experience and training in mental health coaching, certified in CBT or DBT

### High-Risk Delivery Model

Once a patient has been identified as being at higher risk for substance misuse, abuse or addiction, the primary care provider and collocated mental health professional can no longer treat the person under one roof in primary care. This person needs regular consultation with a fully trained substance abuse counselor or Licensed Clinical Addiction Specialist (LCAS). In fact, the treatment of this person is best housed in a reverse colocation scenario where a primary care provider is housed within a mental health outpatient treatment facility. In the same way that the low-risk model enables routine care by the primary care provider with mental health support, this enables routine frequent mental health checks with physical health support. This maintains ownership of chronic pain in the clinical setting where the patient is most likely to succeed. Depending on the level of severity, this approach may require a highly coordinated and careful consultation with a team of specialists. This model requires good provider-provider communication with a clear information and referral protocol and system, a virtual plan of care that helps to coordinate frequent contact with patient (phone calls, check in), case management, and explicit and flexible ownership of the patient by a specific provider. Our connected care model below outlines some crucial elements to facilitate this process.

### Care management

The care management role within the high-risk model should be carefully considered. One temptation and common mistake made in redesigning primary care is to use a care manager to solve complex communication problems. The communication element of the high-risk model is very important to get right, both in the medium and the message. We need to develop adequate tools to frame the conversation between providers. The care manager cannot serve as a band-aid for broken lines of communication within the health care system. This is an ineffective, unsustainable and expensive fix to a common problem. The appropriate use of a care manager includes coordination and interpretation of complex care that involves unique social challenges. Too often, the care manager is left with ownership of the patient while struggling to complete referral and facilitate medical record sharing.

### Financial Imperative

Pain represents a significant number of encounters in the emergency room. In a 5-year review of cost and revenues at the Duke Ed there has been a substantial decrease in the variable

contribution margin (amount remaining to cover fixed costs) related to all chronic pain Emergency Department encounters. This includes ED observation and ED overnight encounters. Over the same time, the ED has had a doubling of encounters from 6,747 to 12,357. If we knew the per unit fixed cost for cost benefit of enhancing primary care (assuming Duke hospitals' fixed cost are higher than the fixed cost of a Duke primary care clinic).

Patients with a mental health and/or substance abuse diagnosis represent substantial difference in cost/revenue than patients that do not have a mental health substance abuse issue. Here is a one year review of claims data of Medicaid patients whose PCP is Duke Medical Outpatient clinic.

Total of 394 Unique Enrollees with MH/SA dx	EMERGENCY DEPARTMENT	INPATIENT ADMISSIONS	INPATIENT COST	EMERGENCY DEPARTMENT COST
Unique pts	283	122	\$ 1,584,569	\$413,937
Total of 1084 Non - MH &SA enrollees over a 1 year period				
Unique pts	250	78	\$520,308	\$120,179

These scenarios highlights the need for colocation or reverse colocation models so that on-going treatment can occur within a primary care setting to avoid unnecessary costly ED visits and hospitalizations.

## KEY ELEMENTS OF A CONNECTED CARE MODEL

The tiered approach that we have described is also a good way to examine levels of “connectedness” that are needed to other parts of the health care system and community. In fact, many elements that we have described are part of an inherently connected model - this is a cornerstone of our innovation. The low-risk delivery model connects the mental health care system with primary care by putting them under one roof. This has been described above.

The following elements are what we consider to be the most important elements of a connected care model that could reach across clinical systems and chronic disease states:

1. Standardization of coding for chronic disease states, including chronic pain. This facilitates the data collection necessary for adequate assessment and evaluation.
2. One standardized form regarding the release of protected health information. The form should use language developed by the Substance Abuse and Mental Health Services Administration to include sharing of notes between medical and mental health service providers (see Appendix L).
3. A structured referral process reflecting established best practices and clinical guidelines for treatment and facilitates provider-provider and provider-patient communication. This process should include clear language regarding which provider should obtains primary responsibility for patient care under which circumstances.
4. A centralized website showing local resources for chronic disease management and an advocate representative in each organization tasked with maintaining a current understanding of available resources and assisting in referrals.
5. An Electronic Health Record (EHR) which is available across systems, including mental health systems.
6. A virtual plan of care or virtual meeting place to foster asynchronous provider-provider communication and shared responsibility for patient care.
7. A chronic pain track in the ED to more closely integrate ED providers with other service providers and facilitate the treatment of chronic pain during and after ED visits.

8. A new policy allowing licensed acupuncturists to provide treatment to patients regardless of whether the acupuncturist has a medical degree. This is currently prohibited in the Duke system but could greatly enhance patient care while carrying a relatively low cost for liability coverage.
9. Coordinated education efforts for Durham County providers that treat chronic pain. Key stakeholders that have expressed interest in sponsorship might include NC Medical Board, BCBSNC, Medicaid Task Force on Opioids.

## **Conclusion**

As of December 2009, chronic pain presents a clear obstacle to any efforts to improve the physical and mental health of Durham County residents. Fortunately, there is a new paradigm emerging which promises more effective treatments of this chronic disease. In this report, we have sought to detail specific interventions which would improve the health of Durham residents as well as position the Durham community at the forefront of this national movement. The new model of care detailed above also holds the potential to affect other chronic diseases in our community, especially those diseases in which mental health and physical activity play any role at all. We are confident that, with the implementation of these changes, December 2010 could easily present a much brighter picture for chronic pain patients and our community as a whole.

## REFERENCES

---

Visit our team's website for a wealth of resources, articles and reports on chronic pain:  
<http://sites.google.com/site/chronicpaincollaborative/>

- Abernethy, A. P., J. L. Wheeler, et al. (2008). "A health economic model of breakthrough pain." *Am J Manag Care* **14**(5 Suppl 1): S129-40.
- Adams N, P. H., Richardson C (2006 ). "Psychological Approaches to Chronic Pain Management: Part 1." *J Clin Nur.* **15**(3): 290-300.
- Arner, S. and B. A. Meyerson (1988). "Lack of analgesic effect of opioids on neuropathic and idiopathic forms of pain." *Pain* **33**(1): 11-23.
- Arnow, B. A., E. M. Hunkeler, et al. (2006). "Comorbid depression, chronic pain, and disability in primary care." *Psychosom Med* **68**(2): 262-8.
- American Psychiatric Association (Ed.), (2004). *Diagnostic and Statistical Manual of Mental Disorders*, 4th Ed. A. P. Assoc. Washington, DC.
- Ballentine, J. and J. Mao (2003 ). "Opioid Therapy for Chronic Pain." *N Engl J Med* **349**(20): 1943-53.
- Becker, W. C., D. A. Fiellin, et al. (2009). "The Association Between Chronic Pain and Prescription Drug Abuse in Veterans." *Pain Medicine* **10**(3): 531-536.
- Beissner, K., C. R. Henderson, Jr., et al. (2009). "Physical therapists' use of cognitive-behavioral therapy for older adults with chronic pain: a nationwide survey." *Phys Ther* **89**(5): 456-69.
- Brennan, F., D. B. Carr, et al. (2007). "Pain Management: A Fundamental Human Right." *Anesth Analg* **105**(1): 205-221.
- Brown, C. A. (2004). "The beliefs of people with chronic pain in relation to 'important' treatment components." *Eu J Pain* **8**(4): 325-333.
- Chelminski, P. R., T. J. Ives, et al. (2005). "A primary care, multi-disciplinary disease management program for opioid-treated patients with chronic non-cancer pain and a high burden of psychiatric comorbidity." *BMC Health Serv Res* **5**(1): 3.
- Clark, D. (1999). "'Total pain', disciplinary power and the body in the work of Cicely Saunders, 1958-1967." *Social Science & Medicine* **49**(6): 727-736.
- Clark, M. R., K. B. Stoller, et al. (2008). "Assessment and management of chronic pain in individuals seeking treatment for opioid dependence disorder." *Can J Psychiatry-Revue* **53**(8): 496-508.
- Collett, B. J. (1998). "Opioid tolerance: the clinical perspective." *Br J Anaesth* **81**(1): 58-68.

- Craig, D. S. (2006). "Is the word "narcotic" appropriate in patient care?" J Pain Palliat Care Pharmacother **20**(1): 33-5.
- Denisco, R. A., R. K. Chandler, et al. (2008). "Addressing the intersecting problems of opioid misuse and chronic pain treatment." Exp Clin Psychopharm **16**(5): 417-428.
- Dobscha, S. K., K. Corson, et al. (2008). "Rationale, design, and baseline findings from a randomized trial of collaborative care for chronic musculoskeletal pain in primary care." Pain Med **9**(8): 1050-64.
- Dobscha, S. K., K. Corson, et al. (2009). "Collaborative care for chronic pain in primary care: a cluster randomized trial." JAMA **301**(12): 1242-52.
- Edwards CL, F. R., Keefe F (2001). "Race, ethnicity and pain." Pain **94**: 133-7.
- Elliott, A. M., B. H. Smith, et al. (1999). "The epidemiology of chronic pain in the community." Lancet **354**(9186): 1248-1252.
- Eriksen, J., P. Sjogren, et al. (2006). "Critical issues on opioids in chronic non-cancer pain:: An epidemiological study." Pain **125**(1-2): 172-179.
- Ezzo, J., B. Berman, et al. (2000). "Is acupuncture effective for the treatment of chronic pain? A systematic review." Pain **86**(3): 217-225.
- Gavin DR, R. H., Skinner HA (1989). "Diagnostic validity of the Drug Abuse Screening Test in the assessment of DSM-III drug disorders." BJA **84**(3): 301-307.
- Gilson, A. M. and P. G. Kreis (2009). "The Burden of the Nonmedical Use of Prescription Opioid Analgesics." Pain Med **10**: S89-S100.
- Green CR, A. K., Baker TA, Campbell LC, Decker S, Fillingim RB, Kaloukalani DA, Lasch KE, Myers C, Tait RC, Todd KH, Vallerand AH (2003). "The unequal burden of pain: confronting racial and ethnic disparities in pain." Pain Med(4): 277-84.
- Habib, S., S. A. Morrissey, et al. (2003). "Readiness to adopt a self-management approach to pain: evaluation of the pain stages of change model in a non-pain-clinic sample." Pain **104**(1-2): 283-90.
- Hadley, G., S. Derry, et al. (2009). "Can observational studies provide a realistic alternative to randomized controlled trials in palliative care?" J Pain Palliat Care Pharm **23**(2): 106-113.
- Hunt, L. M., N.H. Arar. (2001). "An analytical framework for contrasting patient and provider views of the process of chronic disease management. ." MAQ **15**(3): 1-21.
- ICSI (2008). *Assessment and Management of Chronic Pain by the Institute for Clinical Systems Improvement*, 3rd ed. I. F. C. S. Improvement.

- J.F.X. Carroll, P. D., and John J. McGinley, Ph.D (2000). Mental Health Screening Form-III (MHSF-III) I. Project Return Foundation.
- Jamison, R. N. and E. Ross (2002). "Show us the evidence: a reply to Bartleson's article." Pain **3**(3): 272-273.
- Joranson, D. E., K. M. Ryan, et al. (2000). "Trends in medical use and abuse of opioid analgesics." JAMA **283**(13): 1710-1714.
- Kalso, E., L. Allan, et al. (2003). "Recommendations for using opioids in chronic non-cancer pain." Eu J Pain **7**(5): 381-386.
- Kalso, E., J. E. Edwards, et al. (2004). "Opioids in chronic non-cancer pain: systematic review of efficacy and safety." Pain **112**(3): 372-380.
- Keyes, C. (1998). "Accidental drug dosage error." Int J Qual Health Care **10**(4): 357.
- Kroenke, K., M. J. Bair, et al. (2009). "Optimized antidepressant therapy and pain self-management in primary care patients with depression and musculoskeletal pain: a randomized controlled trial." JAMA **301**(20): 2099-2110.
- Kuehn, B. M. (2007). "Scientists Probe Ways to Curb Opioid Abuse Without Hindering Pain Treatment." JAMA **297**(18): 1965-1967.
- Kuehn, B. M. (2009). "Efforts Aim to Curb Opioid Deaths, Injuries." JAMA **301**(12): 1213-1215.
- Lacerte, M. and R. V. Shah (2003). "Interventions in chronic pain management. 1. Pain concepts, assessment, and medicolegal issues." Archives of Physical Medicine and Rehabilitation **84**(3): S35-S38.
- Lansbury, G. (2000). "Chronic pain management: a qualitative study of elderly people's preferred coping strategies and barriers to management." Disability & Rehabilitation **22**(1/2): 2-14.
- Leyshon, R. T. (2009). "Coping with chronic pain: Current advances and practical information for clinicians." Work **33**(3): 369-72.
- Linton, S. J., A.-L. Hellsing, et al. (1993). "A controlled study of the effects of an early intervention on acute musculoskeletal pain problems." Pain **54**(3): 353-359.
- Manchikanti, L. (2008). "Therapeutic opioids: a ten-year perspective on the complexities and complications of the escalating use, abuse, and nonmedical use of opioids." Pain Physician(Opioid Special Issue).
- Meldrum, M. L. (2003). "A capsule history of pain management." JAMA **290**(18): 2470-2475.
- Ng, B., J. E. Dimsdale, et al. (1996). "The effect of ethnicity on prescriptions for patient-controlled analgesia for post-operative pain." Pain **66**(1): 9-12.

- Patterson, C. (2008). "Six myths about opioid use." Nursing **38**(11): 60-1.
- Payne, R. (2000). "Chronic pain: Challenges in the assessment and management of cancer pain." Journal of Pain and Symptom Management **19**(1): S12-S15.
- Perkins, E. M. (2002). "Less morphine, or more?" RN **65**(11): 51-4.
- Portenoy, R. K. and K. M. Foley (1986). "Chronic use of opioid analgesics in non-malignant pain: Report of 38 cases." Pain **25**(2): 171-186.
- Potter, M., S. Schafer, et al. (2001). "Opioids for chronic nonmalignant pain: Attitudes and practices of primary care physicians in the UCSF/Stanford Collaborative Research Network, University of California, San Francisco." J Fam Pract **50**(2): 145-51.
- Roger, C., J. F. Gilbert, et al. (2009). "Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain." The journal of pain: official journal of the American Pain Society **10**(2): 113-130.e22.
- Rosenberg, D. (2001). "Profits vs. pain relief." Newsweek **138**(1): 49.
- Rosenblum, A. J., H. Fong, C. Kipnis, S. Cleland, C. Portenoy, R. K. (2003). "Prevalence and characteristics of chronic pain among chemically dependent patients in methadone maintenance and residential treatment facilities." JAMA **289**(18): 2370-2378.
- Strassels, S. A. (2009). "Economic burden of prescription opioid misuse and abuse." Journal of Managed Care Pharmacy **15**(7): 556-562.
- Torrance, N., A. M. Elliott, et al. "Severe chronic pain is associated with increased 10 year mortality. A cohort record linkage study." Eu J Pain In Press, Corrected Proof.
- Unutzer, J., M. Schoenbaum, et al. (2006). "Transforming mental health care at the interface with general medicine: report for the presidents commission." Psychiatr Serv **57**(1): 37-47.
- van Tulder, M., B. Koes, et al. (2006). "Outcome of non-invasive treatment modalities on back pain: an evidence-based review." Eu Spine J **15**: 64-81.
- Varkly, A. and e. al. (2009). "Separate but unequal: clinics where minority and nonminority patients receive primary care." Arch Intern Med **169**(3): 243-250.
- Vetter, T. R. (2007). "The application of economic evaluation methods in the chronic pain medicine literature." Anesth Analg **105**(1): 114-118.
- Vlaeyen, J. W. S. and S. J. Linton (2000). "Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art." Pain **85**(3): 317-332.

Wells K, K. R., Koike A, Sherbourne C (2001). "Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care." Am J Psychiatry (158): 2027-2032.

White, P. and H. Kehlet (2007). "Improving pain management: are we jumping from the frying pan into the fire?" Anesth Analg **105**(1): 10.



## APPENDICES

---

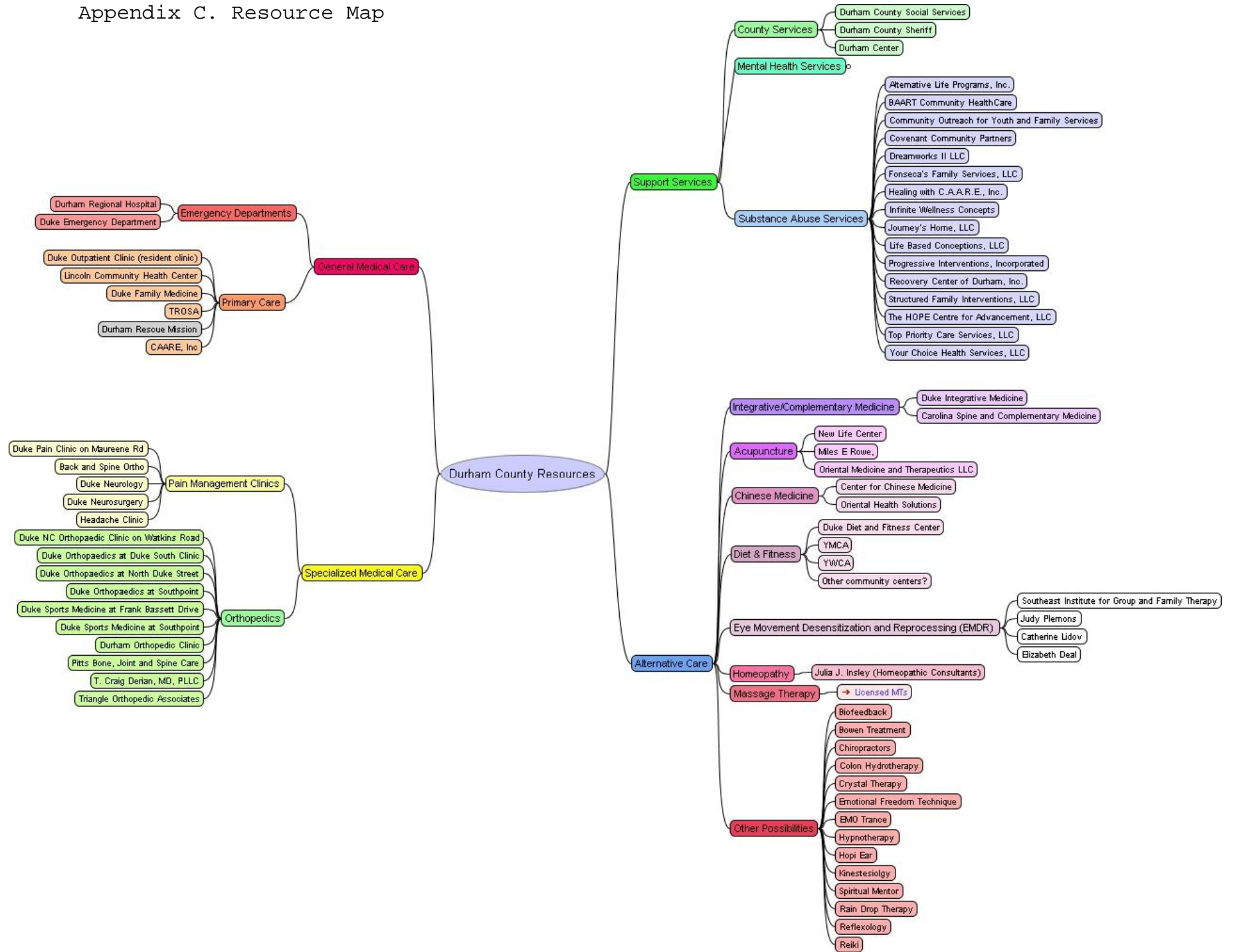
- A. ICD-9 Codes
- B. Resource Map\*
- C. Patient Passport\*
- D. Substance Use, Misuse and Abuse Terminology\*
- E. Opioid Education Flyer\*
- F. Geo-spatial Maps
- G. SOAPP: Screener and Opioid Assessment for Patients with Pain
- H. SOAPP-R: Screener and Opioid Assessment for Patients with Pain – Revised
- I. ORT: Opioid Risk Tool
- J. DIRE: Diagnosis, Intractability, Risk, Efficacy
- K. Structured Template for Provider-Provider Communication\*
- L. Release of Information Template\*

\*These documents were developed by the Rethinking Pain Team

## ICD-9 Codes

307.8 Chronic pain due to trauma  
307.81 Pain w psychosocial factors  
307.89 Pain disorder exclusively attributed to psychological factors  
334.4 Pain w psychosocial dysfunction  
335.4 Causalgia of upper limb  
335.71 Causalgia of lower limb  
335.9 Causalgia  
338.2 Chronic pain  
338.3 Neoplasm related chronic pain (338.3)  
338.4 Chronic pain syndrome  
346 Headaches - migraines  
346.7 Headaches - migraines  
346.9 Headaches - migraines  
528.9 Other and unspecified diseases of the oral soft tissues  
714 Rheumatoid arthritis  
715 Osteoarthritis  
717 Internal derangement of knee  
719.4 Pain in joint  
723.1 Cervicalgia. Pain in neck.  
723.4 Cervical radiculitis. Radicular syndrome of upper limbs  
724 Other and unspecified disorders of back  
729.1 Myalgia and myositis, unspecified fibromyositis NOS, fibromyalgia  
729.5 Pain in Limb  
733 Osteoporosis  
733.09 Osteoporosis in neck  
784 Headaches  
339.00 - 339.89 Headaches - syndromes  
339.1-339.12 Headaches - tension  
719.0 - 719.9 Joint pain  
V13.4 Arthritis  
V17.7 Arthritis  
V72.2 Dental pain

# Appendix C. Resource Map



## Chronic Pain Patient Passport

### Intro

*"Improving function is the key to long-term pain relief..."* - Dr. DC Liebenstein

### **Mission Statement:**

The mission of Rethinking Pain is to facilitate the improvement of health care and quality of life for individuals who have chronic pain.

**Passport Purpose:** This Chronic Pain Patient Passport is meant to summarize all of the details necessary for you and your health care team to attain and maintain a healthy, functional lifestyle with the best possible treatment for your particular chronic pain condition.

### Pain Management Tips/Resources

If you are experiencing severe pain...

Tips for self-management:

When to contact doctor:

Who to contact:

When to go to ED:

Patient Info:

**Name:**

**Address:**

**Telephone:**

**Primary Diagnosis:**

**Patient ID #:** LCHN#                      LAT#

DRH#                      DUH#                      ???#

Other:

**Primary Care Provider:**

**Care Coordinator:**

**Allergies:**

**Other Providers:**

Name:

Place:

Phone:

Name:

Place:

Phone:

Name:

Place:

Phone:

Name:

Place:

Phone:

Name:

Place:

Phone:

Name:

Place:

Phone:

Medication List

**PLEASE LIST ALL YOUR MEDICATIONS (please bring all your meds for every appointment):**

Medications	Used for Dose	Schedule	Prescribed By

Medication List

**PLEASE LIST ALL YOUR MEDICATIONS (please bring all your meds for every appointment):**

Medications	Used for Dose	Schedule	Prescribed By

For each appointment –

**Date:**

**Place:**

**Provider:**

**Reason:**

**Notes:**

**Prescriptions\*:**

Other Possible content:

Functionality Questions

Goals of Care: Specific recommendations from providers

Exercise Info – recommended exercises?

Diagrams?

## **Substance Use, Misuse and Abuse Terminology**

### **1. Misuse, Abuse and Dependency**

**Substance Misuse and Abuse Continuum:** A continuum which begins with Substance Misuse, and ends in Substance Abuse. There may not be clear lines dividing these conditions.

**Substance Misuse:** Use of any drug (legal or illegal) for a medical or recreational purpose when other alternatives are available, practical, or warranted, or when drug use endangers either the user or others with whom he or she may interact, or use that is not medically sanctioned. Also defined as the use of a substance for unintended purposes, or for intended purposes but in improper amounts or doses.

**Substance Abuse:** Use of any substances for non-therapeutic purposes or use of medication for purposes other than those for which it is prescribed. Also defined as the deliberate, persistent, excessive use of a substance without regard to health concerns or accepted medical. Physical dependence is one characteristic of substance abuse.

**Dependency:** The physical or psychological need to continually use a substance. A person with substance dependency will have developed tolerance to the substance and/or will suffer withdrawal after discontinuing use.

### **2. Additional Terms**

**Addiction:** The compulsive need to use a substance. Stopping would cause the user to suffer mental, physical and emotional distress. Addiction is generally believed to alter the brain in such a way that recovery becomes a life-long process.

**Medication:** A drug given therapeutically to prevent or treat the effects of a disease or condition or to enhance mental and physical well-being.

**Overdose:** An excess use of a drug resulting in adverse reactions.

**Recovery:** a chronic condition which follows withdrawal, may be life-long, and involves an ongoing fight to suppress cravings - which can be daily - and to live life on life's terms.

**Tolerance:** a condition in which the effects of a substance on the body decrease as a result of continued use.

**Withdrawal:** the physical and mental distress or crisis produced when a person stops using a substance to which he/she is addicted. Withdrawal can be life-threatening.



# Are you in pain?

Medication you are taking for pain could be dangerous.

**Opioids or narcotics** are dangerous to take differently than your doctor has told you to take them.

Ask your doctor: Is this prescription for my pain an opiate? Am I at risk for misusing this medication?

There may be better solutions for your pain than simply taking medications.

Examples of opioids are:

- Codeine (Tylenol #2, #3, #4)
- Hydrocodone (Vicodin)
- Meperidine ([Demerol](#))
- Methadone ([Dolophinse](#))
- Morphine ([MS-Contin](#))
- Oxycodone ([OxyContin](#), Percocet, Percodan, Combunox)

Alternatives may be:

- Exercising at your local YMCA
- Walking several times per week
- Visiting your behavioral health or mental health provider
- Meditation

# ***Opioids are for short term use.***

## Risks of Opioids

- Dependence on the medicine
- Increased tolerance of the medicine
- Possible addiction to the medicine
- Sleepiness or lack of energy
- Confusion
- Tiredness— do not drive after taking these medications
- Constipation
- Depression

## Possible Benefits of Opioids— this is why your doctor might prescribe them for you

- Relief from pain in the short term
- Possibly able to do more (increase function)

## For medical providers:

Don't go MAAD! Know the difference between

Misuse, Abuse, Addiction and Dependence when prescribing opiates.

**Misuse:** use of a substance for unintended purposes, or for intended purposes but in improper amounts or doses. This could include selling/giving the drug to someone else.

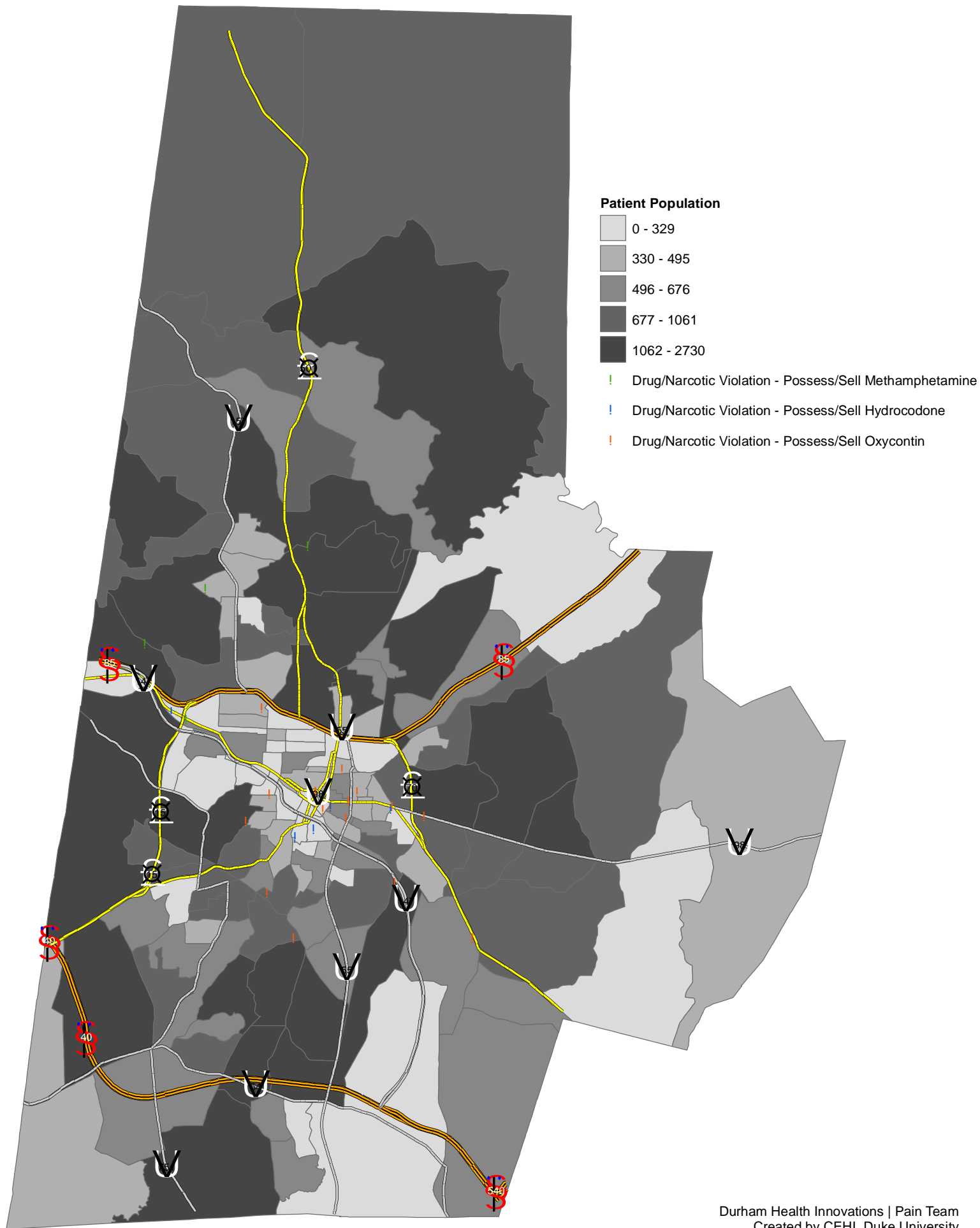
**Abuse:** deliberate, persistent, excessive use of a substance use of a substance without regard to health concerns or accepted medical. Physical dependence is one characteristic of substance abuse.

**Addiction:** The compulsive need to use a substance; addiction is generally believed to alter the brain in such a way that **recovery becomes a life-long process.**

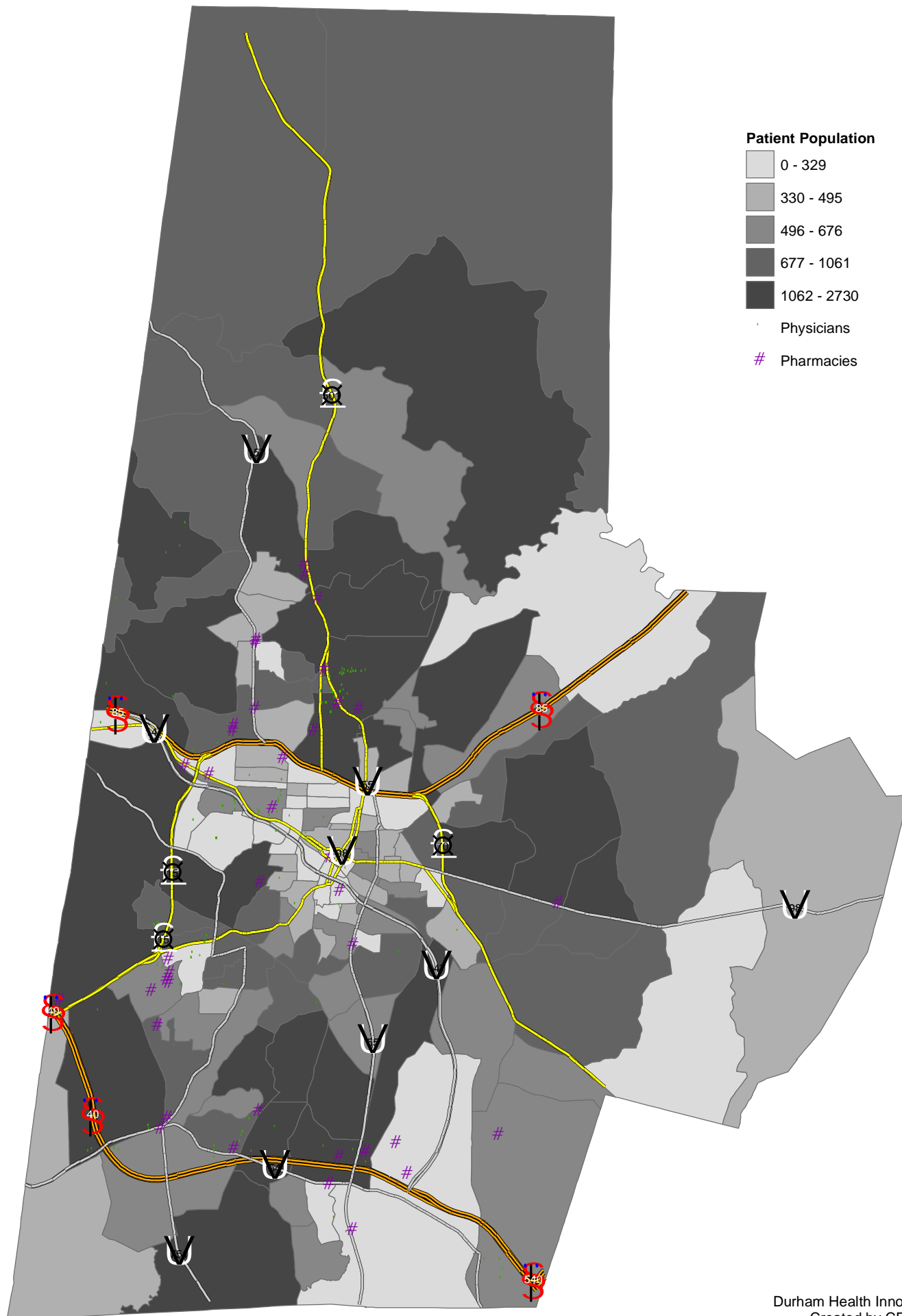
---

**Dependency:** The need to continually use a substance. A person with substance dependency will have developed **tolerance** to the substance and may suffer withdrawal after discontinuing use.

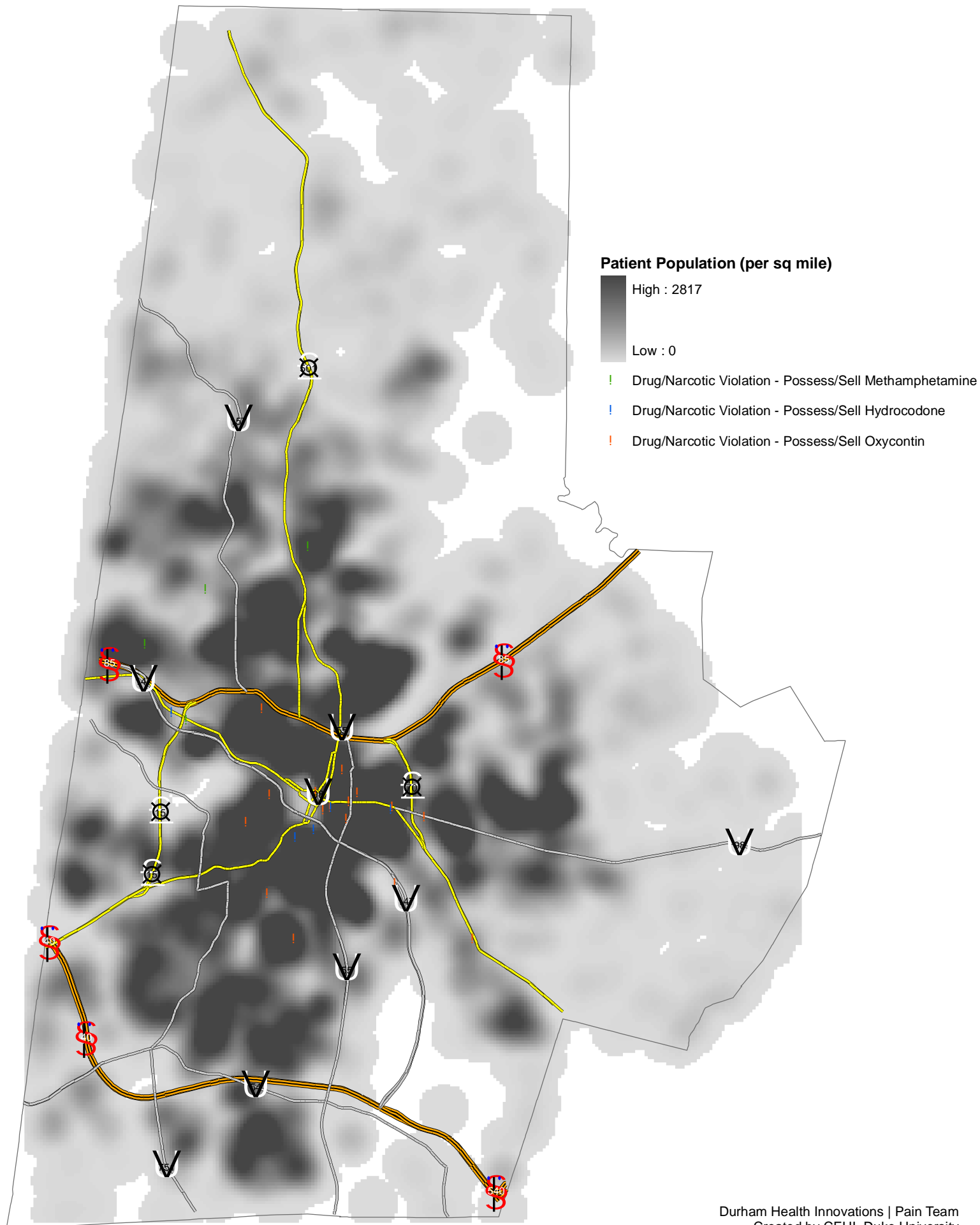
Total Count of Patient Population by Durham County Census Block Groups and Drug/Narcotic Incidents



Total Count of Patient Population by Durham County Census Block Groups, Physicians, and Pharmacies



### Density of Patient Population and Drug/Narcotic Incidents, Durham County



Density of Patient Population, Pharmacies, and Physicians | Durham County

