



# **SWEET HOME, OR**

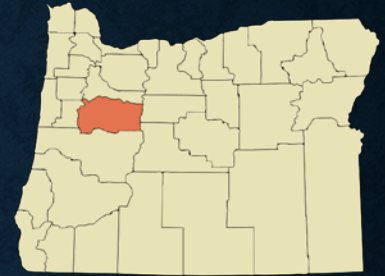
Unmet Healthcare Needs: A Qualitative  
and Quantitative Approach





# SWEET HOME STATISTICS

- Population: 9800 people
- Schools:
  - 4 Elementary Schools
  - 1 Junior High School
  - 1 High School



- \$34k median income vs \$46k in surrounding cities
- 15 miles from Sweet Home to Lebanon Community Hospital, a critical access hospital





## Mean (Average) Score by Geographic Area

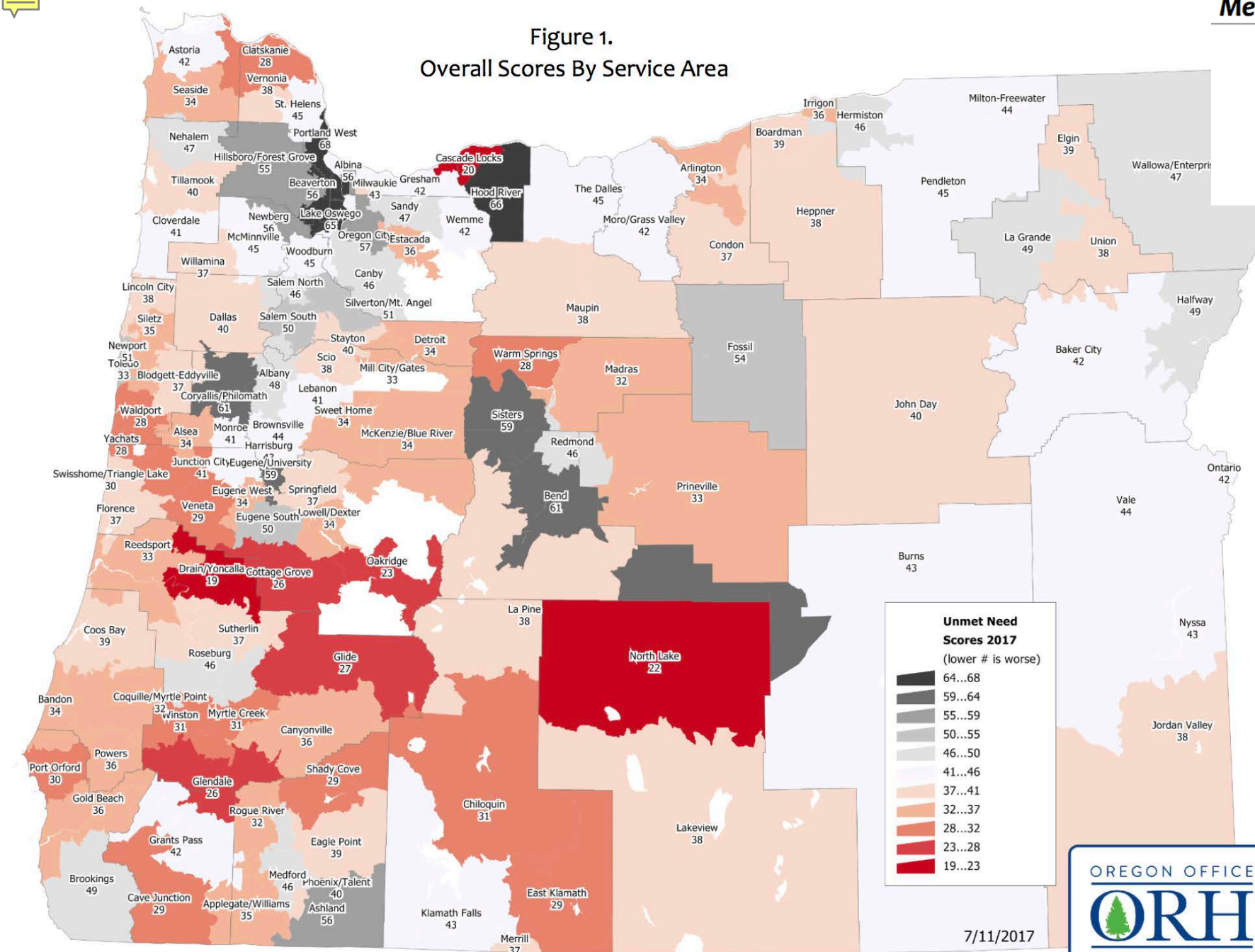
Figure 1.  
Overall Scores By Service Area

Oregon	41.1
Urban	52
Rural (without Frontier)	37.9
Rural (including Frontier)	38.3
Frontier	40.4

Sweet Home	Rural	34
Scio	Rural	38
Lebanon	Rural	41
Brownsville	Rural	44
Albany	Urban	48
Corvallis/Philomath	Urban	61

**Sweet Home Key Variables:**

1. Primary Care Capacity Ratio
2. Mental Health Providers
3. Dentists
4. Preventable Hospitalizations



7/11/2017





# TWO TEAMS - ONE MISSION

Background Research  
IRB Approval

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graph TD; A[Background Research<br/>IRB Approval] --> B[Qualitative team<br/>Focus Groups:<br/>• 5 focus groups/interviews<br/>• Stratified population<br/>• Ask open-ended questions<br/>• Look for common themes]; A --> C[Quantitative team<br/>Dx simplification/organization<br/>Chart review<br/>• ER visits<br/>• Admissions<br/>• Family Medicine Clinic]; B --> D[Compare Data<br/>Look for<br/>Solutions!]; C --> D;
```

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Compare Data  
Look for  
Solutions!



# **QUALITATIVE TEAM**





# RESEARCH QUESTIONS

- What do you think prevents Sweet Home residents from accessing health care?
- What do you think is the biggest health concern for Sweet Home residents?





# RESEARCH QUESTIONS

- What local health resources are you aware of?
  - Do you think Sweet Home residents use these resources?
  - What do you think Sweet Home residents use them for?
- What additional resources do you think would be most beneficial to improve the health of Sweet Home residents?





# COMMUNITY IDENTIFIED RESOURCES

## Medical

- Family Practice
  - Sweet Home Family Medicine (SHFM)
    - Primary care
    - Weekday walk-in care
  - Sweet Home Health Center
    - 1 physician
- Dental
  - 2 private practices

## Other

- Boys and Girls Club
- Fire Department
- Public Transportation
- Community Pride
- Community Health Fair
- Food Bank
- Meals On Wheels





# CONCERNS: PRIMARY CARE TURNOVER

- High turnover
- Difficulty getting established
- No more private practitioners
- “most of the folks that I talk to about it have gone outside of Sweet Home even for their primary care.”
- “I can’t keep a doctor. I’ve had 10 or 12, or 15 or 20 of them in the last however many years. They are here and then they are gone...it’s frustrating as the dickens..”





# CONCERNS: AFTER HOURS CARE

- No medical care available in evenings or on weekends
- Fire station used as a resource
- “..after 6 (weekdays) there's nothing here....the fire department I think they're very good but like I said they're very busy.”
- :“My biggest thing is is I’m really glad that we now have the walk in clinic but I would like to see it open longer than 5 o’clock.”





# CONCERNS: TRANSPORTATION

- Linn Benton Bus - Weekdays only
- Ride Share program
- “We’ve got a lot of shut-ins that just can’t get out and get their food, get their, get the things they need.”
- “There’s a lot of people that don’t have the transportation to go to Lebanon. And but I am glad that we finally did get (a walk-in clinic) here but I wish it was open a little longer hours.”



# CONCERN: AGING POPULATION

- 38% of residents are between the ages of 45-74
- Fewer local jobs – more commuters
- “(Elder care) is going and is continuing to become a larger and larger issue everywhere but *we’re really starting to see it on the curbside* here in Sweet Home.”
- “We used to have a very thriving timber industry in town, and that’s pretty much gone away.... So most people in this community I believe commute.... there has been a very noticeable increase.”





# CONCERNS: HOMELESSNESS

- Affordable Housing shortage
- 237 students or 10% of the Sweet Home student population are without permanent housing.
- “it goes with affordability and those with the least are going to go where it's least expensive, and well that pushes them further up the canyon-which is Sweet Home.”
- “Homeless numbers in the school district go up every year....I don't know what the number is now but its way over 200.”





# CONCERNS: MENTAL HEALTH CARE

- Little treatment available.
  - 1 clinical psychologist, 4 days a week, not currently accepting new patients
- “I think when you see mental health counselling or any type of counselling the hub is Albany and then Lebanon gets some service and then by the time you come out to Sweet Home its 1 day a week.”
- “And to even get in to the mental health services here in town you first have to go to an intake service in Albany and they don’t make appointments for it. You just go over there and sit and wait and hope they get to you.”





# CONCERNS: HEALTH EDUCATION, DISEASE PREVENTION & NUTRITION

- Identified poor nutrition as a source of chronic disease
- 71% of Sweet Home students on free and reduced lunch.
- Boys and Girls Club meal program
- Drug, Alcohol, and Tobacco education
- “But diet is definitely something that can head off a lot of those problems, like diabetes and cardiovascular problems for sure. I personally have been educated by my daughter....”
- “I think a big part of what we need what probably everyone needs, is education. Education not only for health but also for diabetes and even just eating properly and stuff like that.”





# CONCERN: MENTORSHIP

- Lack of professional role models for youth
- "The community is tired of what it is and the community is ready to move forward and embrace some changes"
- "(In the past), it didn't take a lot of Education to make a lot of money. So when you graduated from high school- or you didn't - you should go make a family wage job. People didn't really push for you to go get a college education."
- "Kids here are just looking for Heroes"



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Compare Data  
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# QUANTITATIVE TEAM



# SWEET HOME HEALTH DATA

- Oregon.gov reports higher than average rates of preventable disease-causing behaviors such as smoking, little physical activity, soda consumption, and obesity.
- We sought to find the most prevalent reasons residents of Sweet Home were being seen at their local PCMH and also seeking care at the Lebanon Hospital.
- Our dataset from 2017 contained over 12k PCP encounters, 3.8k ED visits, and 700 LCH Admissions.
- Our painstaking contribution was categorizing and organizing these entries broadly by organ system and more specifically by diagnosis.



# DATASET EXAMPLE

_LCH Admissions - Excel										
Tell me what you want to do										
File Home Insert Page Layout Formulas Data Review View Help										
Clipboard Font Alignment Number Styles Cells Editing										
A2 139										
ID	Age	Sex	Insurance	Admit Date/Time	Disch Date/Time	Admission Diagnosis	Primary Dx	Category	Subcategory	
139	83	F	PROVIDENCE MCR	04/14/2017 1056	04/23/2017 1341	Hypoxia	Acute congestive heart failure, unspecified congestive heart	Cardiac	CHF	
220	85	M	MEDICARE	04/17/2017 1331	04/25/2017 1151	Elevated troponin	Acute congestive heart failure, unspecified congestive heart	Cardiac	CHF	
352	63	M	UNITED HEALTH CA	01/18/2017 1155	01/24/2017 1210	Atrial fibrillation with RVR (HCC)	Acute congestive heart failure, unspecified congestive heart	Cardiac	CHF	
354	49	M	IHN	05/20/2017 1304	05/26/2017 1752	Atrial flutter with rapid ventricular response (HCC)	Acute congestive heart failure, unspecified congestive heart	Cardiac	CHF	
378	103	F	SAMARITAN ADVAN	08/04/2017 2222	08/09/2017 1431	Acute congestive heart failure, unspecified congestive	Acute congestive heart failure, unspecified congestive heart	Cardiac	CHF	
88	83	M	SAMARITAN ADVAN	09/04/2017 2238	09/07/2017 0435	Shortness of breath	Acute coronary syndrome (HCC)	Cardiac	Acute Coronary Synd	
138	65	M	MEDICARE	03/25/2017 1113	04/08/2017 1730	Hypoxia	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
166	59	M	SAMARITAN ADVAN	08/15/2017 2332	08/16/2017 1836	Hypoxia	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
176	68	F	FARMERS NW MED	07/14/2017 1613	07/18/2017 1539	Acute diastolic heart failure (HCC)	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
351	58	F	REGENCE BCBS	05/16/2017 1203	05/18/2017 1440	Atrial flutter with rapid ventricular response (HCC)	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
363	49	M	IHN	10/08/2017 1140	10/11/2017 1920	Acute on chronic congestive heart failure, unspecified	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
310	73	M	REGENCE BCBS	10/02/2017 1845	10/09/2017 2016	Acute on chronic congestive heart failure, unspecified	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
88	83	M	SAMARITAN ADVAN	06/28/2017 0042	06/28/2017 1937	Acute on chronic congestive heart failure, unspecified	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
310	73	M	REGENCE BCBS	07/28/2017 0834	08/02/2017 1606	Acute on chronic congestive heart failure, unspecified	Acute on chronic congestive heart failure, unspecified	Cardiac	CHF	
215	75	F	MEDICARE	12/10/2017 0104	12/17/2017 1524	Polycythemia	Acute on chronic diastolic CHF (congestive heart failure) (HCC)	Cardiac	CHF	
370	68	F	SAMARITAN ADVAN	09/04/2017 2105	09/08/2017 1458	Acute on chronic diastolic heart failure (HCC)	Acute on chronic diastolic heart failure (HCC)	Cardiac	CHF	
372	63	M	IHN	06/20/2017 1705	06/22/2017 1420	Acute on chronic heart failure, unspecified heart failure	Acute on chronic heart failure, unspecified heart failure type	Cardiac	CHF	
232	58	M	HUMANA CHOICE M	12/21/2017 1552	12/31/2017 1812	Pleural effusion	Acute on chronic systolic congestive heart failure (HCC)	Cardiac	CHF	
164	65	F	MEDICARE	10/22/2017 1800	10/26/2017 1344	Hypoxia	Acute systolic congestive heart failure (HCC)	Cardiac	CHF	
100	73	F	MEDICARE	10/19/2017 2252	10/20/2017 1745	SOB (shortness of breath)	Atrial fibrillation with rapid ventricular response (HCC)	Cardiac	Atrial Fibrillation	
341	62	F	DISABILITY DETERM	05/26/2017 0159	05/27/2017 1524	Atrial fibrillation with rapid ventricular response (HCC)	Atrial fibrillation with rapid ventricular response (HCC)	Cardiac	Atrial Fibrillation	
172	76	F	MEDICARE	07/25/2017 1306	07/27/2017 0938	Hypokalemia	Atrial fibrillation with RVR (HCC)	Cardiac	Atrial Fibrillation	
76	81	M	UNITED HEALTH CA	11/19/2017 1230	11/27/2017 1532	Hyponatremia	Atrial fibrillation with RVR (HCC)	Cardiac	Atrial Fibrillation	
188	45	F		08/23/2017 1618	08/26/2017 1205	Methamphetamine use	Atrial fibrillation with RVR (HCC)	Cardiac	Atrial Fibrillation	
234	78	M	VETERANS CHOICE	11/10/2017 0319	11/20/2017 1640	Phimosis	Atrial flutter with rapid ventricular response (HCC)	Cardiac	Atrial Flutter	
355	78	F	MEDICARE	03/09/2017 0827	03/13/2017 1231	Atrial flutter with rapid ventricular response (HCC)	Atrial flutter with rapid ventricular response (HCC)	Cardiac	Atrial Flutter	
353	94	F	REGENCE BCBS MCI	04/14/2017 1507	04/15/2017 1346	Atypical chest pain	Atypical chest pain	Cardiac	Chest Pain	



# DIAGNOSES BREAKDOWN AND ORGANIZATION

## Cardiac

- Hypertension
- Congestive heart failure
- Chest pain, not pulmonary in origin
- Arrhythmia
- Atrial fibrillation
- Pedal edema
- Palpitations
- Pre-excitation syndrome
- Deep vein thrombosis
- Abdominal aortic aneurysm

## Complex

- Hypertension with weakness, COPD, and GI issues
- Multiple major organ diagnoses
- Combinations of other main categories

## Dental

- Caries
- Dental pain
- Dental abscess

## Dermatological

- Cellulitis
- Abscess
- Ingrown toenails
- Paronychia
- Frostbite
- Burns
- Zoster
- Lymphadenitis

## Diabetic

### Complication

- Hypo/hyperglycemia with prior diagnosis of diabetes
- Diabetic neuropathy
- Diabetic ulcers

## Infection

- Sepsis
- Bacteremia
- Septicemia

## Intoxication

- Alcohol abuse
- Methamphetamine abuse
- Heroin withdrawal
- Intentional overdose

## Gastrointestinal

- Diverticulitis
- Abdominal pain
- Nausea/vomiting/diarrhea
- Hepatitis
- Ascites

## General

- Annual physical exam
- Preventative health screening
- Encounter to establish care
- Pre/Post-Op Exam
- Abnormal weight change
- General fatigue
- Vaccinations

## General Surgery

- Appendicitis
- Pancreatitis
- Cholecystitis
- Inguinal hernia
- Hemorrhoids
- Perianal venous thrombosis

## HEENT

- Ear/Eye/Sinus infection
- Acute pharyngitis
- Strep throat
- Corneal abrasion
- Epistaxis
- Esophagitis

## Heme/Onc

- Anemia
- Leukemia
- Carcinomas
- Hyperlipidemia

## Laceration

- Any type of laceration, stab wound, etc
- Bite wound

## Musculoskeletal

- Low back pain
- Arthralgia
- Arthritis
- Fractures
- Bursitis
- Osteomyelitis
- Contusion of abdominal wall/extremities
- Dislocations/subluxations
- Muscle spasms
- Gout
- Chronic Pain

## Neurological

- Stroke/Suspected Stroke
- Neuralgia
- Myopathy
- Migraine
- Cauda equina
- Vertigo

## OB/GYN

- Pelvic pain
- Yeast infection
- Menorrhagia
- Any form of delivery
- Contractions
- Pre-eclampsia
- Post-partum complications
- Complications related to pregnancy

## Psychiatric

- Psychotic episode
- Generalized anxiety disorder
- Major depressive disorder
- Post-traumatic stress disorder
- Insomnia
- Bipolar disorder
- Adjustment disorder

## Pulmonary

- Pneumonia
- Pulmonary embolism
- Chronic obstructive pulmonary disease
- Pneumonitis
- Upper respiratory infection
- Viral URI
- Influenza
- Bronchitis

## Renal

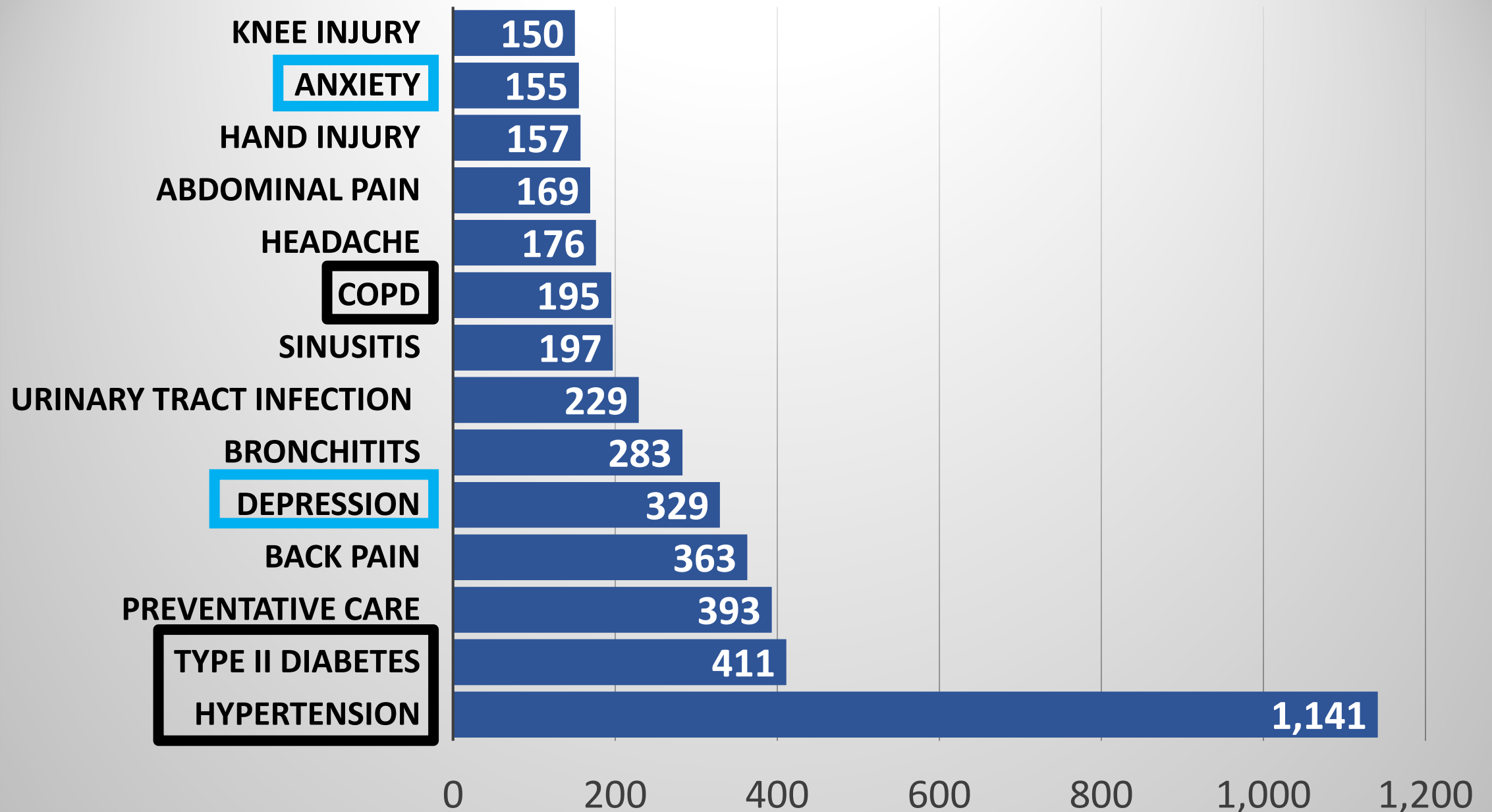
- Pyelonephritis
- Kidney stones
- Chronic kidney disease
- Urinary retention
- Bladder calculus

## Reproductive

- Urinary tract infection
- Sexually-transmitted diseases/infections
- Vaginal bleeding
- Testicular torsion
- Epididymitis
- Hematometra
- History of fetal loss
- Mastodynia
- Dysprosum

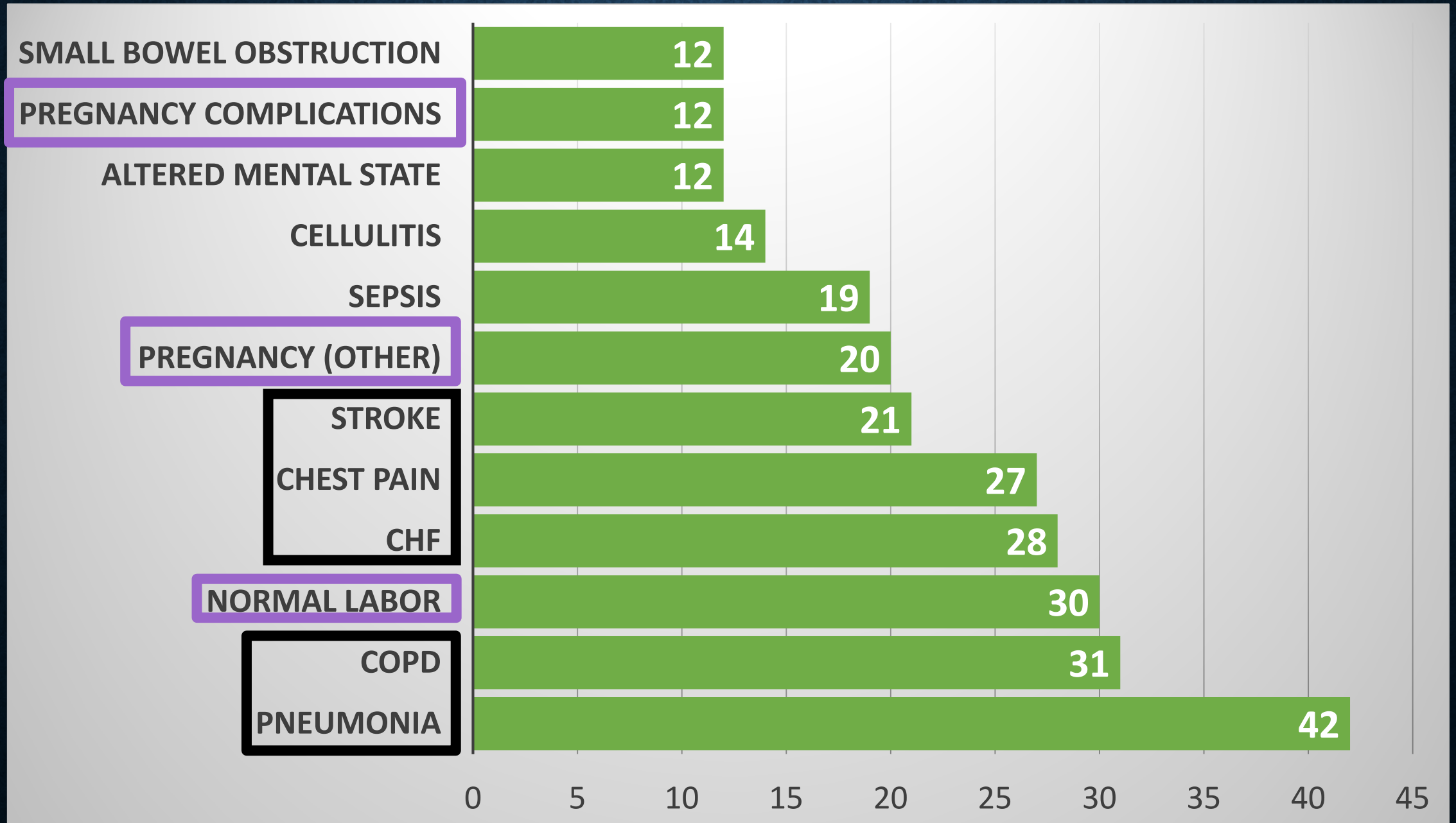


# PCMH CHIEF COMPLAINTS



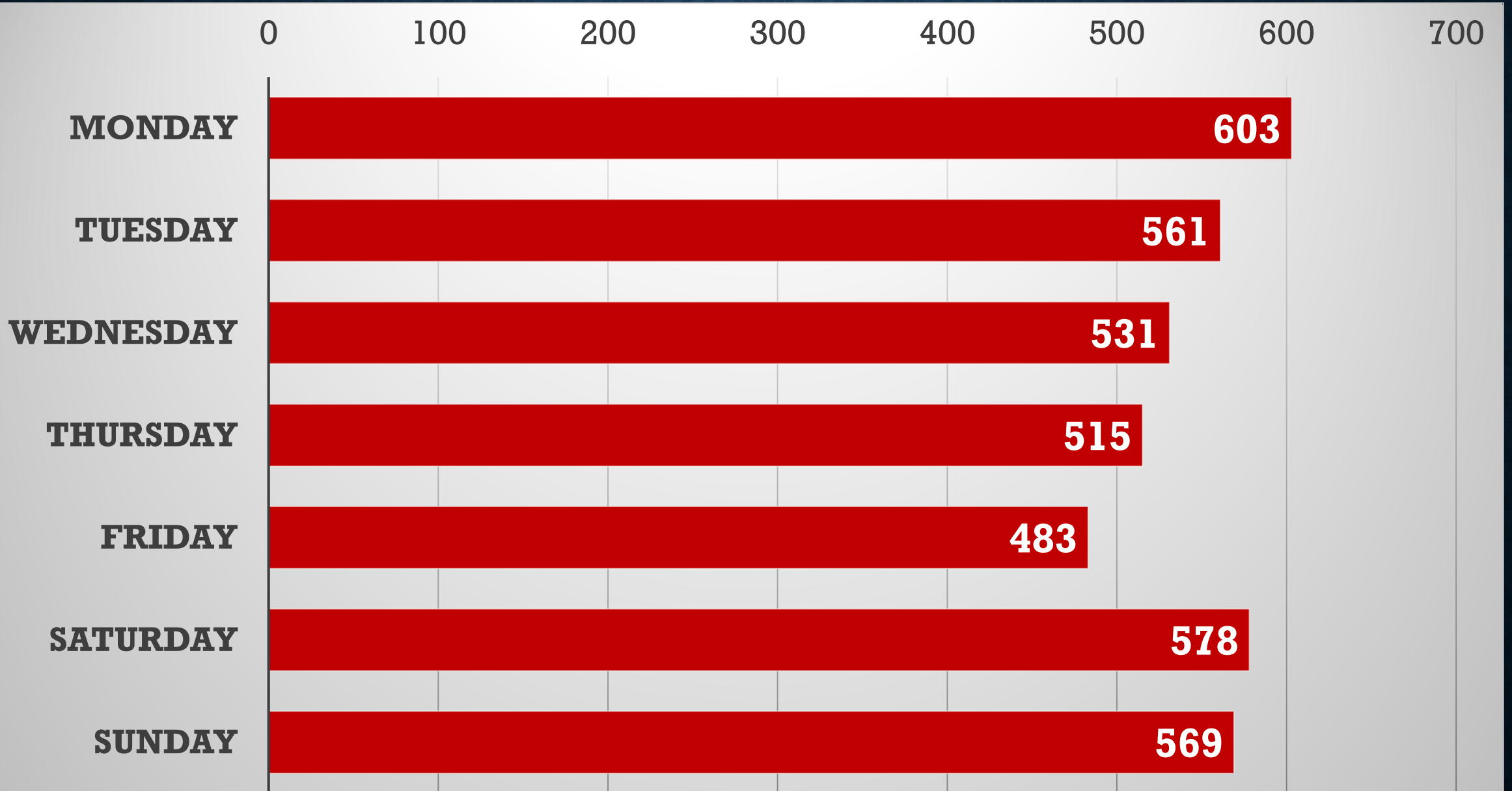


# HOSPITAL ADMITTING DIAGNOSES





# ED VISITS BY DAY OF THE WEEK





- Trends in the ED data: many MSK complaints, diabetes, chronic CV/Pulmonary diseases, and nicotine dependence. Surprising number of dental complaints as well, highlighting the importance of dental care to the town of Sweet Home.
- Somewhat surprised and puzzled by the lack of substance abuse encounters, given what we know about substance abuse in rural towns and Sweet Home specifically.
- The Lebanon Community Hospital does not have inpatient psychiatric services, so psych patients are sent to Corvallis or Salem for intensive treatment when needed.
- Limitations:
  - We categorized and labelled the data by hand, leaving possibilities of mislabeling.
  - Addresses of patients listed could be incorrect, a problem all hospitals face.
  - ICD-10 codes are tricky, and medical billing plays a role in patient diagnosis.
  - Patient problem lists are rarely culled, and thus seem to follow patients forever.
- Overall we learned that preventable diseases (Hypertension and T2DM) and those related to mental health are the most common problems facing Sweet Home, and this is what we will look to address in future projects.





# INVITATION TO COLLABORATE

- Ask the experts!
- Please write
  - 2 possible solutions for the CCO
  - 2 possible solutions for community leaders





# SAMARITAN'S 3X5 CARD

- Psychiatric Services:
  - Assess potential partnerships with SHS's Regional Health Education Hub for classes such as Mental Health First Aid and QPR for Sweet Home.
- Weekend/Evening Care:
  - Explore the feasibility of utilizing SHS's Mobile Clinic to meet some of the weekend and evening care needs of the Sweet Home community.
- Dental Services:
  - Look for partnership opportunities with the Coast to Cascades Community Wellness Network to address oral health (CCCWN) .





# SAMARITAN'S 3X5 CARD

- Smoking Cessation:
  - Reach out to SHS's Regional Health Education Hub about providing current programs such as "Freedom from Smoking" to the Sweet Home community.
- Nutrition and Wellness Education:
  - Develop a strategic plan to increase access and participation in programs/classes offered through SHS such as CHIP and Plant-Based Kitchen.
- Substance Abuse:
  - Explore outreach opportunities with the developing Samaritan Treatment and Recovery Center (STAR).





# ADDITIONAL SOLUTIONS

- Community Resources Promotion
- Youth Mentorship & Community Education classes with Western U students
- Patient Advisory Committee for CCO





**QUESTIONS?**



# REFERENCES

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Most Common Category of Diagnosis of Rural Town Residents that Presented to their Patient-Centered Medical Home in 2017

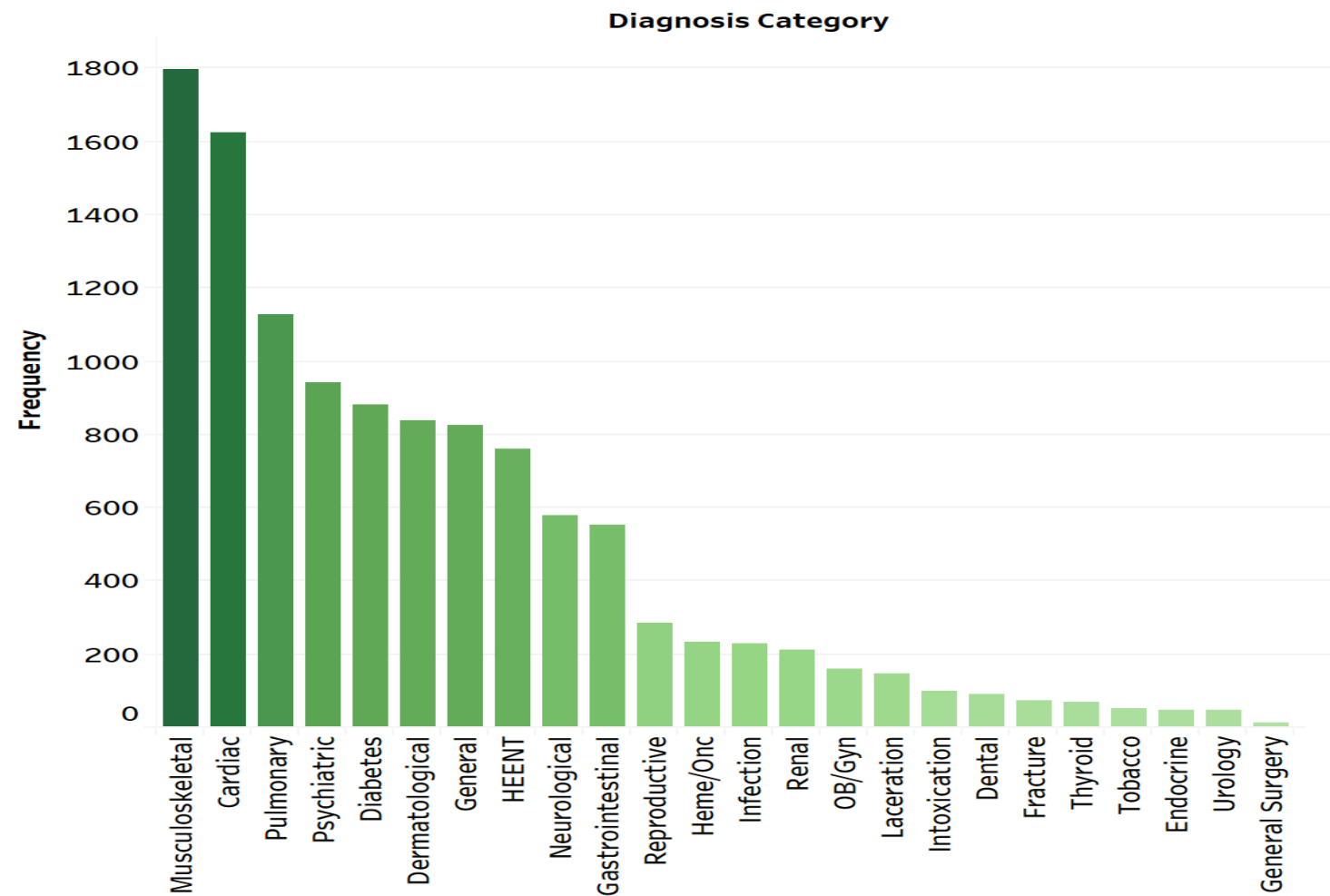
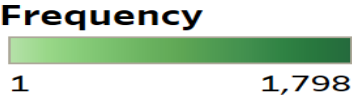


Figure 5: This figure shows the categories of diagnostic codes used for patients with registered address in a rural town in Oregon who visited their Patient-Centered Medical Home in 2017.





# Most Common Category of Diagnosis of Rural Town Residents that Presented to the ED in 2017

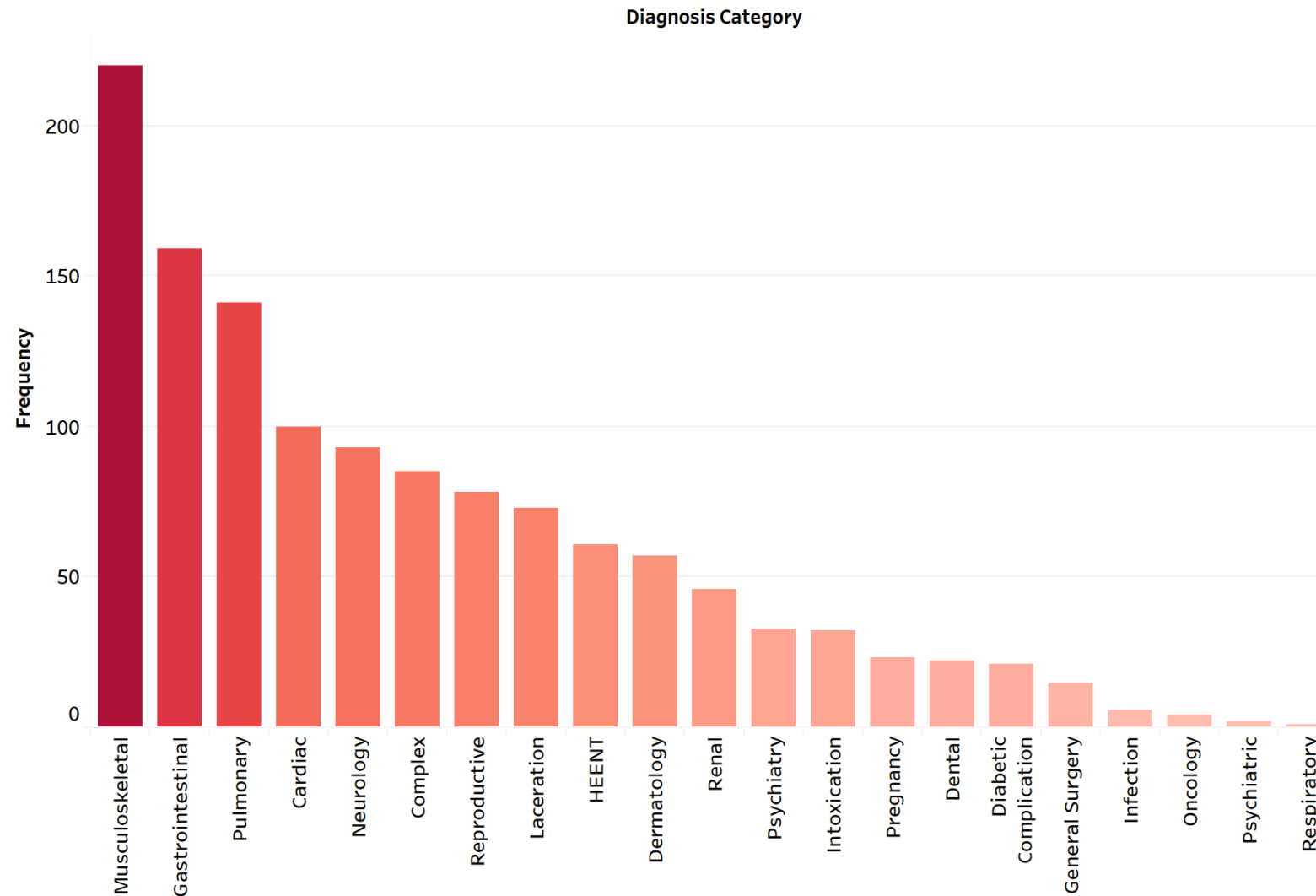
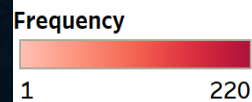


Figure 1: This figure shows the categories of diagnostic codes used for patients with registered address in a single rural town in Oregon for the year 2017. This figure includes data from a subset of the total data from the ED. A total of 1272 of 3840 data points were sample and categorized for this graphic.





**Category One: Availability of Providers** *Are needed providers available locally?*

- 1) Travel Time to Nearest Patient Centered Primary Care Home (PCPCH)
- 2) Primary Care Capacity (Percent of Primary Care Visits Able to Be Met)
- 3) Mental Health Providers per 1,000 Population
- 4) Dentists per 1,000 Population

**Category Two: Ability to Afford Care** *Is it affordable to see these providers?*

- 5) Percent of Population Between 138% and 200% of Federal Poverty Level (FPL)

**Category Three: Utilization** *Is primary physical, mental and oral health care being used?*

- 6) Ambulatory Care Sensitive Conditions (ACSC)/ Preventable Hospitalizations per 1,000 Population
- 7) Inadequate Prenatal Care Rate per 1,000 Births
- 8) Emergency Department Non-Traumatic Dental Visits per 1,000 Population
- 9) Emergency Department Mental Health/Substance Abuse Visits per 1,000 Population



Service Area	Designation	Total Score	Travel Time to Nearest PCPCH	Primary Care Capacity Ratio	Mental Health Providers per 1,000	Dentists per 1,000	138-200% of Federal Poverty Level	Preventable Hospitalizations per 1,000	Inadequate Prenatal Care Rate	Emergency Department Dental Visits per 1,000	Emergency Department Mental Visits per 1,000
Sweet Home	Rural	34	10	0.40	0.20	0.11	15%	14.9	52.1	6.4	13.6
Scio	Rural	38	12	0.00	0.19	0.00	14%	8.8	47.4	3.5	8.0
Lebanon	Rural	41	10	1.32	0.30	0.28	12%	14.0	39.5	5.9	14.2
<b>Oregon</b>		<b>41.1</b>	<b>13.3</b>	<b>1.80</b>	<b>1.90</b>	<b>0.42</b>	<b>12%</b>	<b>9.1</b>	<b>54.7</b>	<b>4.8</b>	<b>15.6</b>
Albany	Urban	48	10	1.19	1.27	0.37	13%	7.6	33.7	7.3	14.3
Corvallis/Philomath	Urban	61	10	2.60	2.64	0.40	10%	4.4	49.6	2.1	14.4