RHINO Community of Practice

Using Syndromic Data to Monitor Visits for Patients Experiencing Homelessness

Kacey Potis, MPH CPH and Amanda Dylina Morse, MPH

Agenda

- Updates
  - New facilities
  - Dashboards
  - Other items of interest
- Homelessness in RHINO data (Kacey Potis, MPH CPH)
- Questions!
  - Ongoing surveillance
  - Success stories
  - Presentation requests
  - Technical assistance requests

Updates

NEW FACILITIES AND ITEMS OF INTEREST

The Faces of RHINO

Cynthia Harry
Program Supervisor

Kevin Wickersham
PHEP Surveillance
Program Manager

HTS
Technology
Support

Natasha Close
Surveillance
Epidemiologist

Tom Hulse
Data Quality
Epidemiologist

Kacey Potis
Surveillance
Epidemiologist

Kali Turner
Onboarding
Coordinator

**Amanda Dylina Morse**
Outreach and Policy
Coordinator

Elyse Kadokura
Validation
Epidemiologist

New Facilities in NSSP ESSENCE

- Ocean Beach Hospital
- Prosser Memorial
- Skyline Hospital
- Jefferson General Hospital
  - 4 primary care clinics
  - 2 specialty care clinics
- Kadlec Kennewick
  - 17 primary care clinics
  - 16 specialty care clinics
- Lincoln North Basin Medical Clinics
  - 3 primary care clinics

- Pacific Medical Centers Clinics
  - 10 primary care clinics
- Skagit Valley Hospital
  - 5 primary care clinics
  - 11 specialty care clinics
  - 3 urgent care clinics

Percentage of Emergency Departments Available in NSSP ESSENCE (by County)
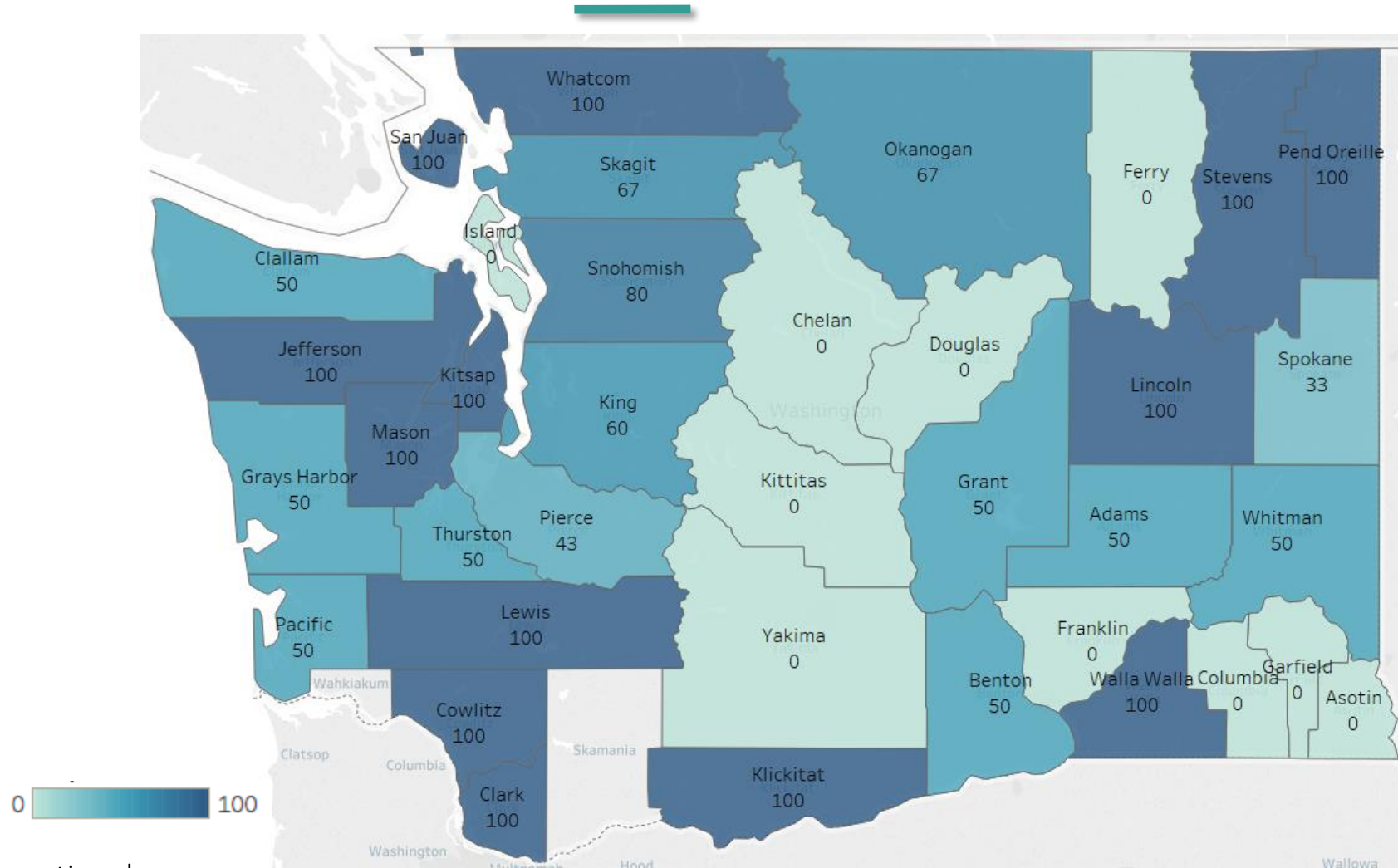
*Wahkiakum and Skamania Counties do not have emergency departments

Percentage of Emergency Departments Visits Captured (by County)
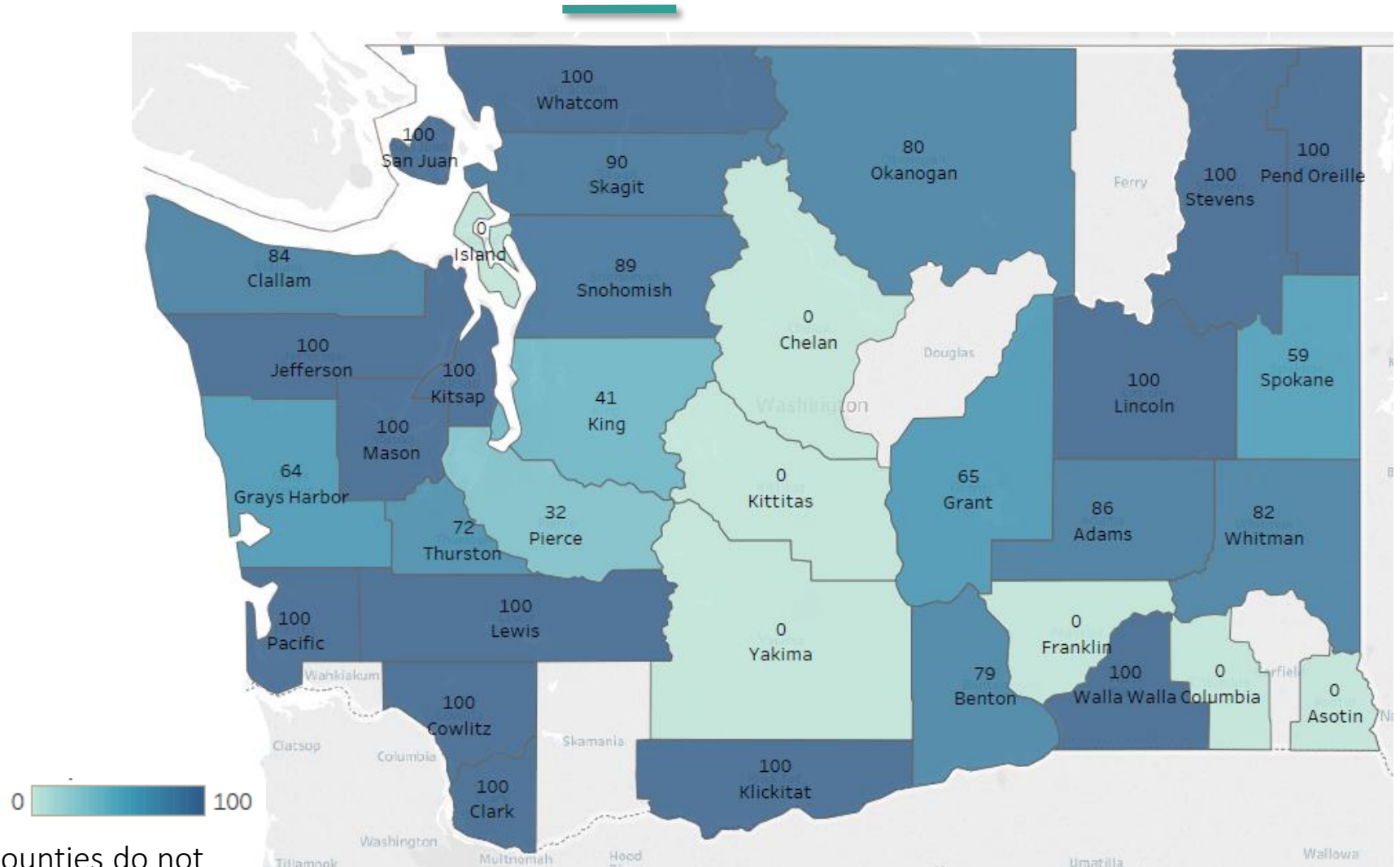
*Wahkiakum and Skamania Counties do not have emergency departments

New Dashboards

- Natasha and Kacey have been building a variety of dashboards which may be of interest for your work
  - Drowning and submersions (Kacey)
  - Emerging conditions (Natasha)
  - Heat-related illness (Natasha)
  - ILI (Natasha)
  - Mass gatherings (Natasha)
  - Motor vehicle collision injuries (Natasha)
  - Wildfires (Kacey)
- If you would like access to one of the dashboards, please contact the owner and we will be happy to share it with you
  - Tabs are being created as "managed tabs" which will update for all users as the creator updates the original

Other Items of Interest

- North Carolina published their work monitoring opioid overdoses in the British Medical Journal
  - Analyzed 16 years of data to assess value of syndromic surveillance for characterizing overdoses and poisoning visits, as well as for communicating that information to communities

- Cross-border wildfire workgroup
  - Madison Riethman (Clark Co.) facilitates the group and the Community of Practice SharePoint is hosting the group's materials
  - Group is open to other LHJs and partners who are interested in monitoring the health effects of wildfires

- Amanda will send out a Community of Practice satisfaction survey in the coming weeks
  - Preferences for meeting times
  - Technical assistance needs
  - Call format and topics

Homelessness

Using Syndromic Surveillance data in Washington State

Kacey Potis, MPH CPH
August 2018

State Trends for Homelessness

o Washington State Health Assessment (SHA) reported there were 21,112 people in Washington state experiencing homelessness in 2017 from the Point in Time Count

o Of these,12,521 were sheltered and 8,591 were unsheltered

Homeless Population Washington State Point in Time Count, 2005-2017
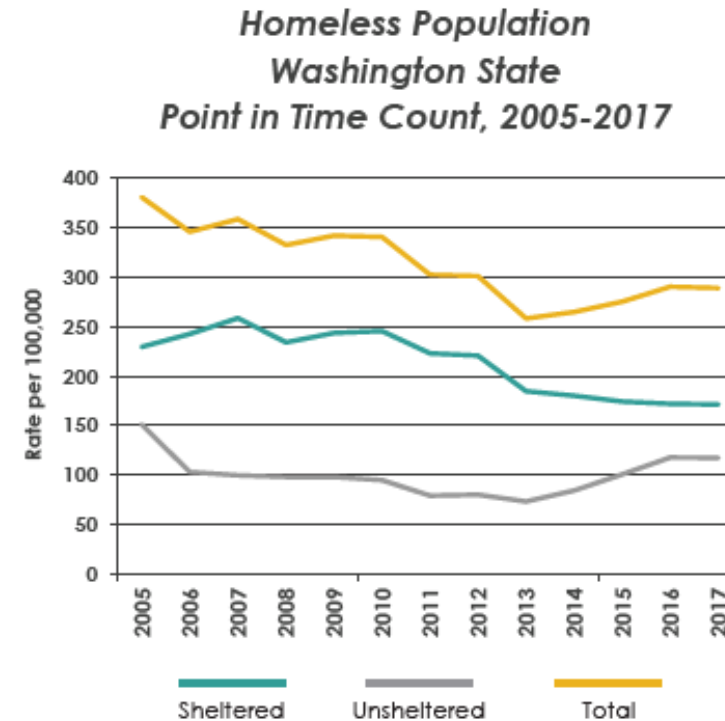
Homelessness Parameters

Timeframe: January-July 2018

Query:

o (^Z590^,OR,^Z59.0^,OR,^HOMELESS^,OR,^NO HOUSING^,OR,^LACK OF HOUSING^,OR,^WITHOUT HOUSING^,OR,^SHELTER^),ANDNOT,(,^ANIMAL SHELTER^,OR,^DOMESTIC VIOLENCE SHELTER^,OR,^DV SHELTER^,OR,^DOG^,OR,^CAT^,)

o Search in Chief Complaint History (and apply to Discharge Diagnosis and Triage Note)

o HasBeenEmergency=Yes

o Based off of query work from Maricopa County and Idaho

Homelessness ICD

ICD: Z59.0 – Homelessness

ICD codes are helpful, but so are free-text components

a) ICD coding overall is rather consistent

b) Triage can provide rich context and additional information regarding housing status (i.e. staying at a shelter, recently lost housing, chronic homelessness, etc.)

Homelessness Limitations

Some challenges to be aware of…

Reporting homelessness for a patient varies by facility. Some examples include:

a) Using the hospital city, state and zip code if a patient indicates they are homeless
b) Using "General Delivery" with accompanying post office
c) Recording HOMELESS in address field
d) Recording NHA for address field and including hospital zip code

RHINO Data Onboarding Status

Percentage of Emergency Department Available in NSSP ESSENCE (by County)*
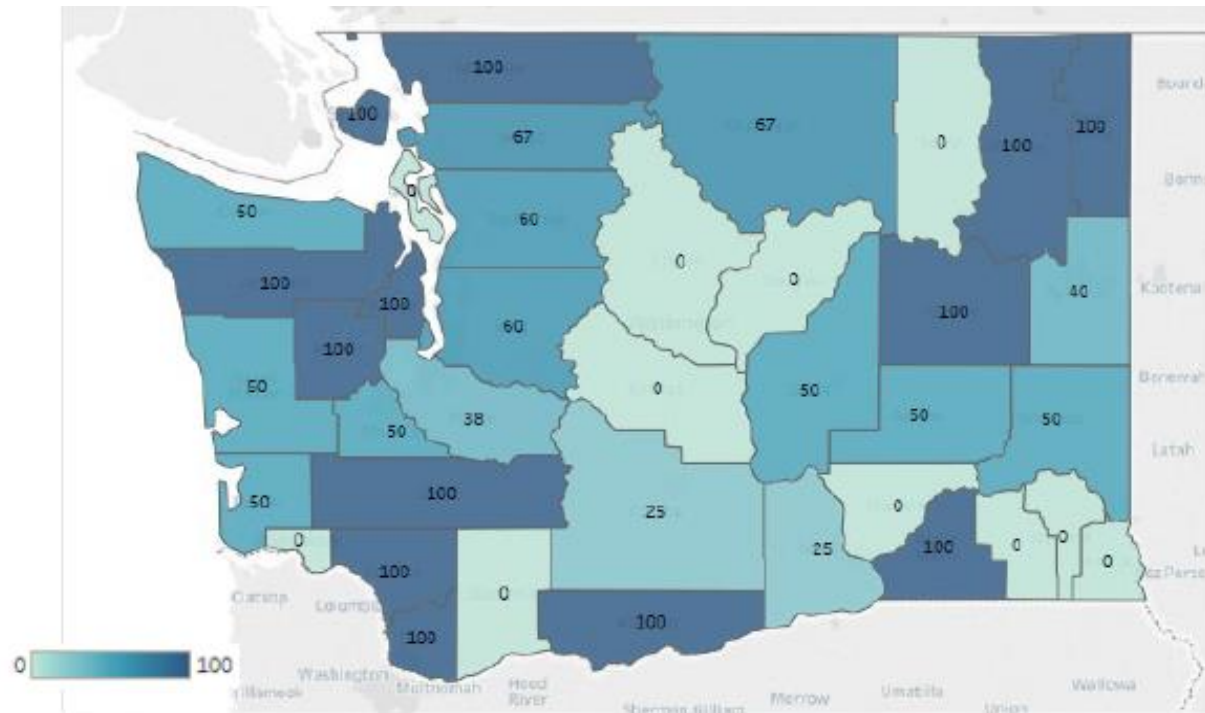
Map based on Longitude (generated) and Latitude (generated). Color shows sum of % Hospital Prod. Details are shown for County.

○ Current Status: 55 emergency departments in production

*Some counties with 0% do not have an ED
(such as Wahkiakum and Skamania)

Homelessness ED Encounters

- Between July 2017 and July 2018 over 15,600 ED encounters were identified where the chief complaint, discharge diagnoses, or triage note indicated homelessness.
- Average is 296 encounters per week.

Homelessness Weekly ED Encounters_July 2017-2018

Weeks for July 2017-2018
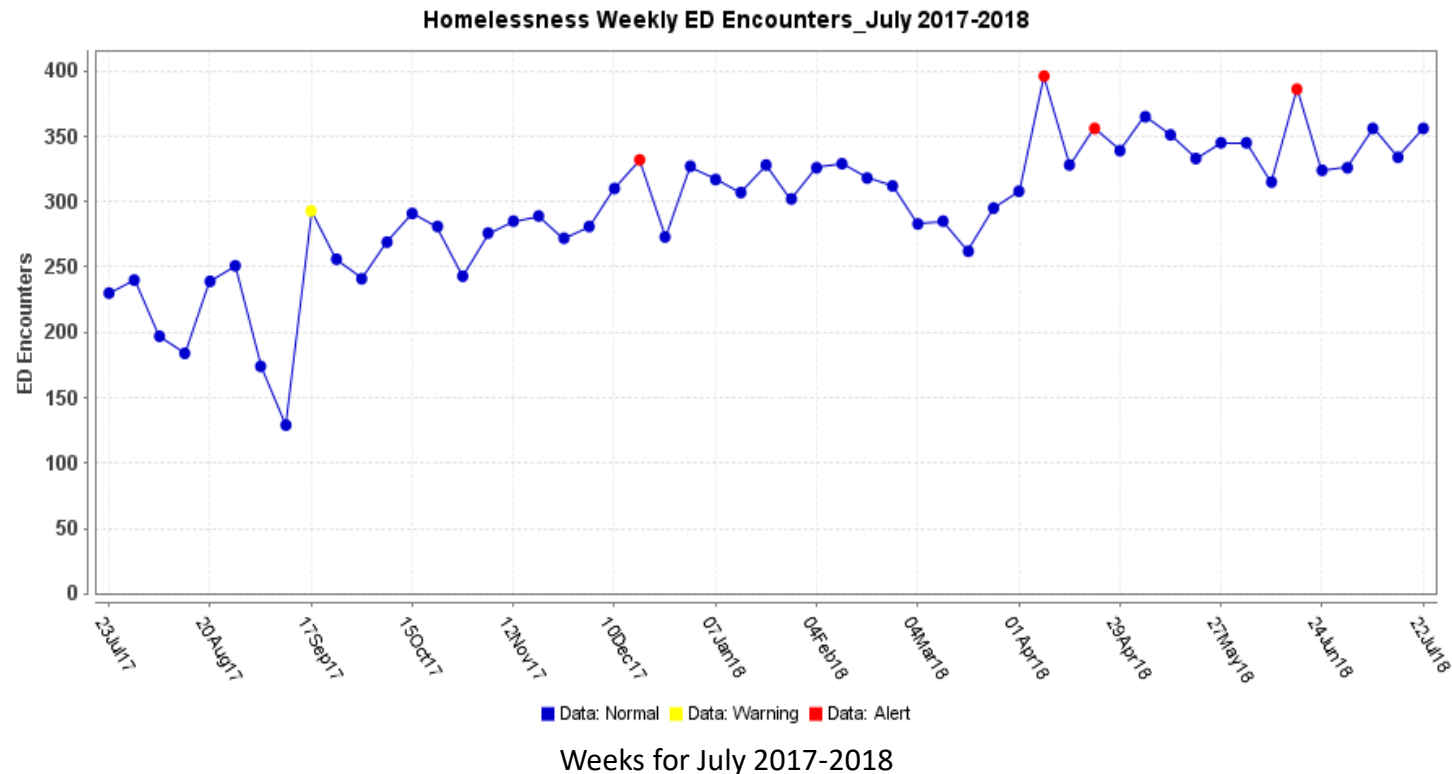
2018 Homelessness Weekly Counts

- January-July 2018 captured over 9,800 ED encounters

- Weekly Counts indicate data alerts (p<0.01) during two weeks in April as well as middle of June

- Weekly percent of ED visits show similar visit patterns

2018_Homelessness_Weekly ED Encounters

2018_Homelessness_Weekly% ED
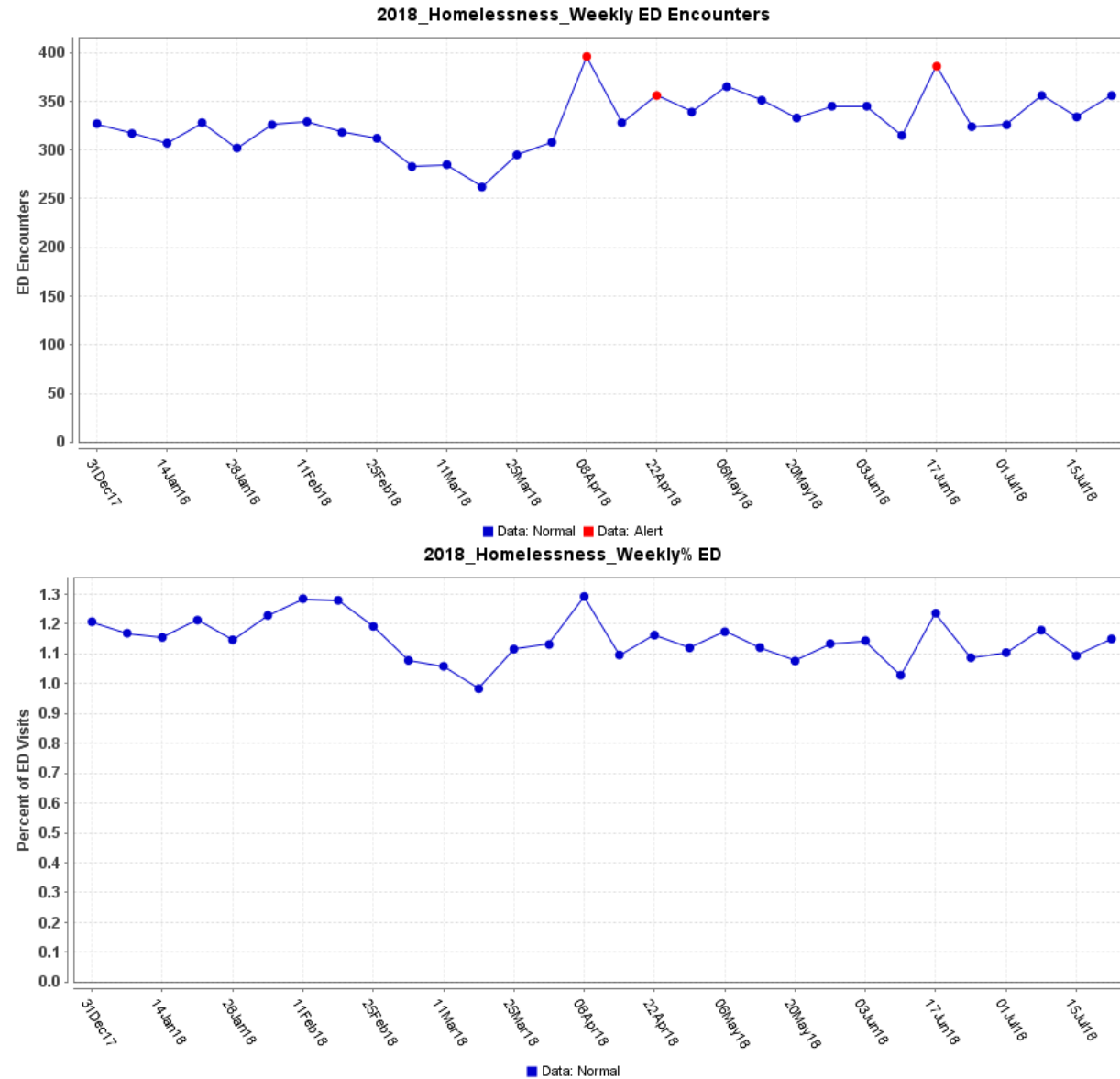
2018 Homelessness Daily Counts

2018_Homelessness_Daily ED Encounters

■ Data: Normal ■ Data: Warning ■ Data: Alert
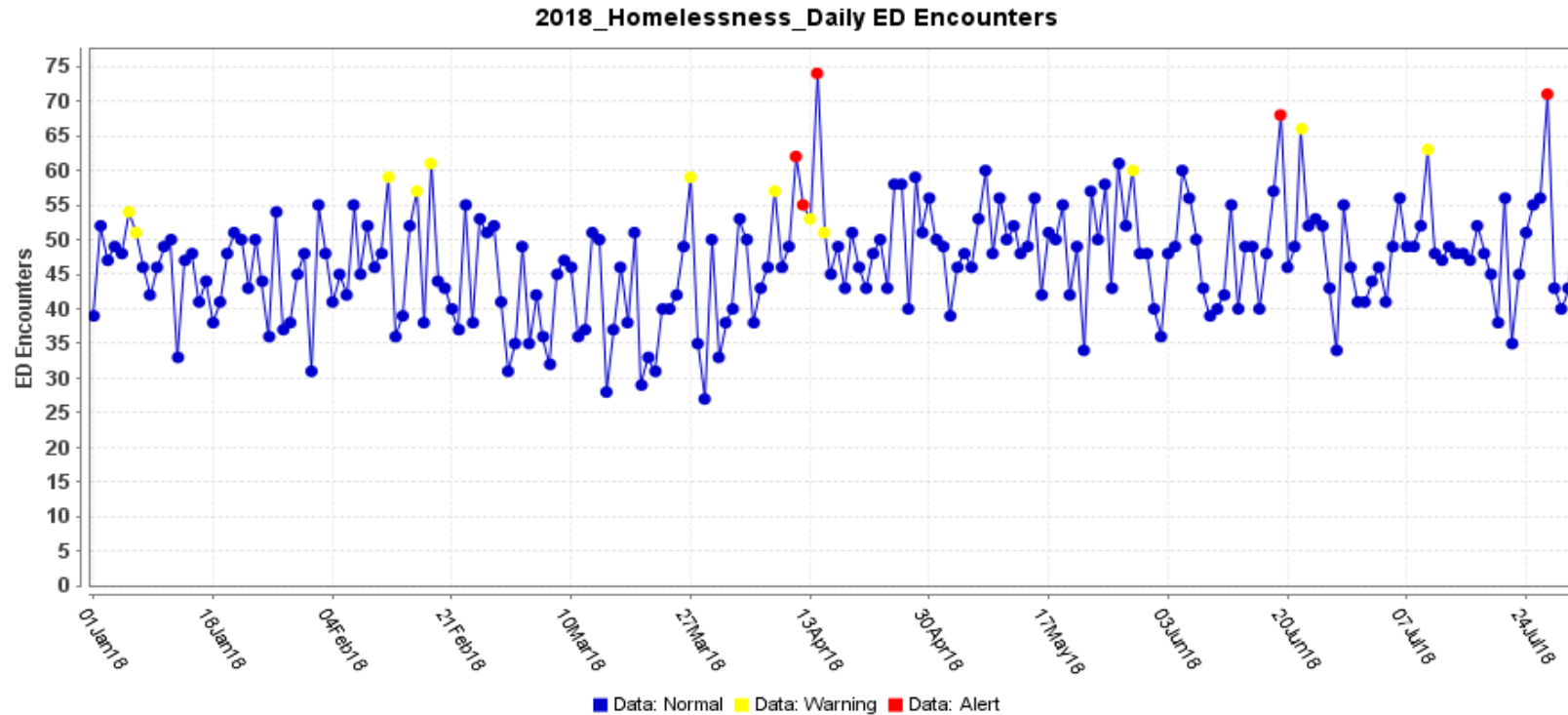
o Daily Counts show a more granular look at these statistical alerts in April and June (red, p<0.01; yellow p<0.05)
o Multiple data alerts in January, February and July

Temperature and ED Encounters

2018_Homelessness_Weekly ED with Maximum and Minimum Temperature
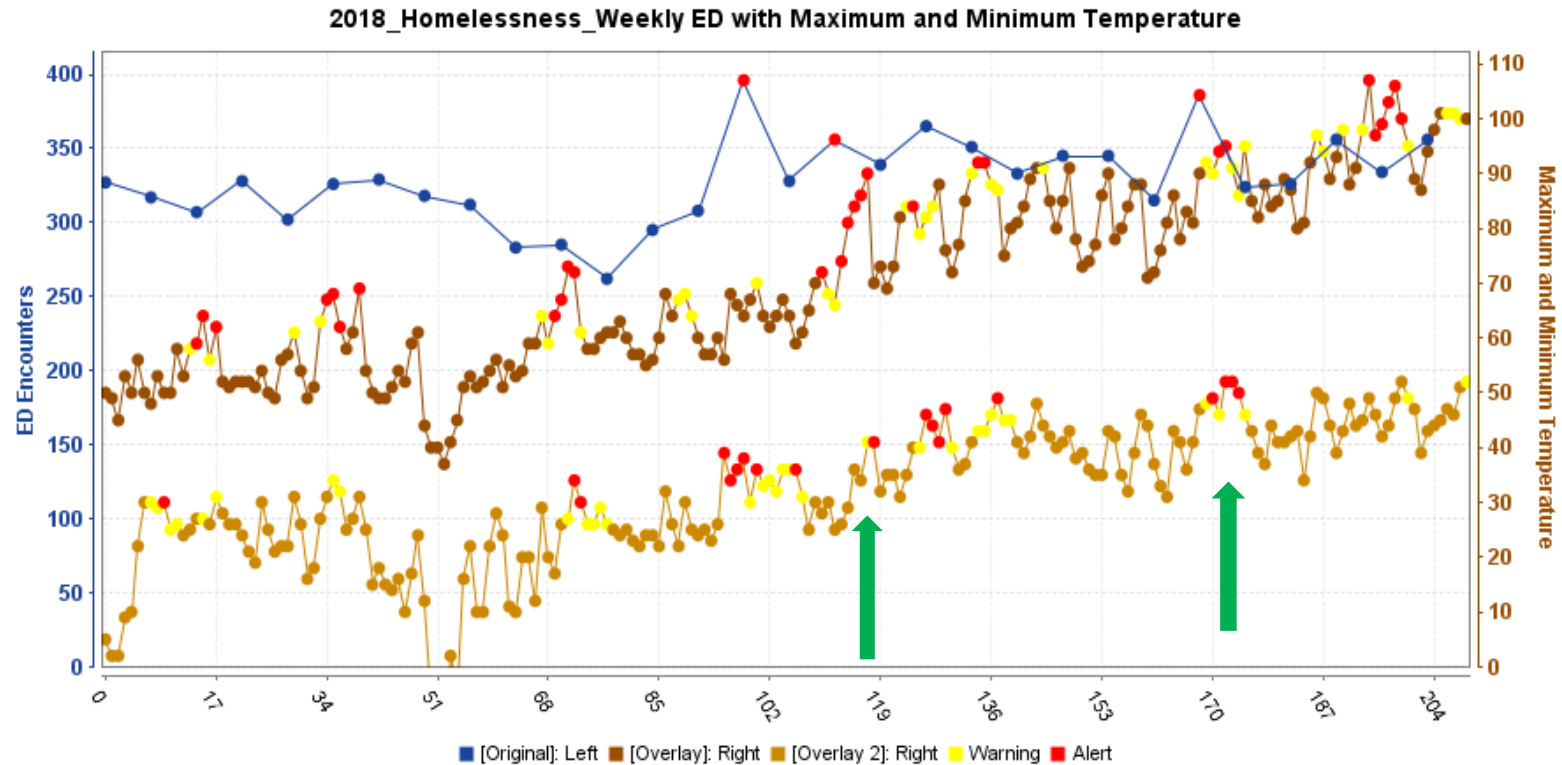
No strong associations with ED encounter data alerts with max/min temperature alerts.

Potentially some matching alerts for middle of June or end of April (green arrow). However, not consistently seen in the overall trend.

Temperature and ED Encounters

July 2017-2018_Homelessness_Weekly ED with Maximum and Minimum Temperature
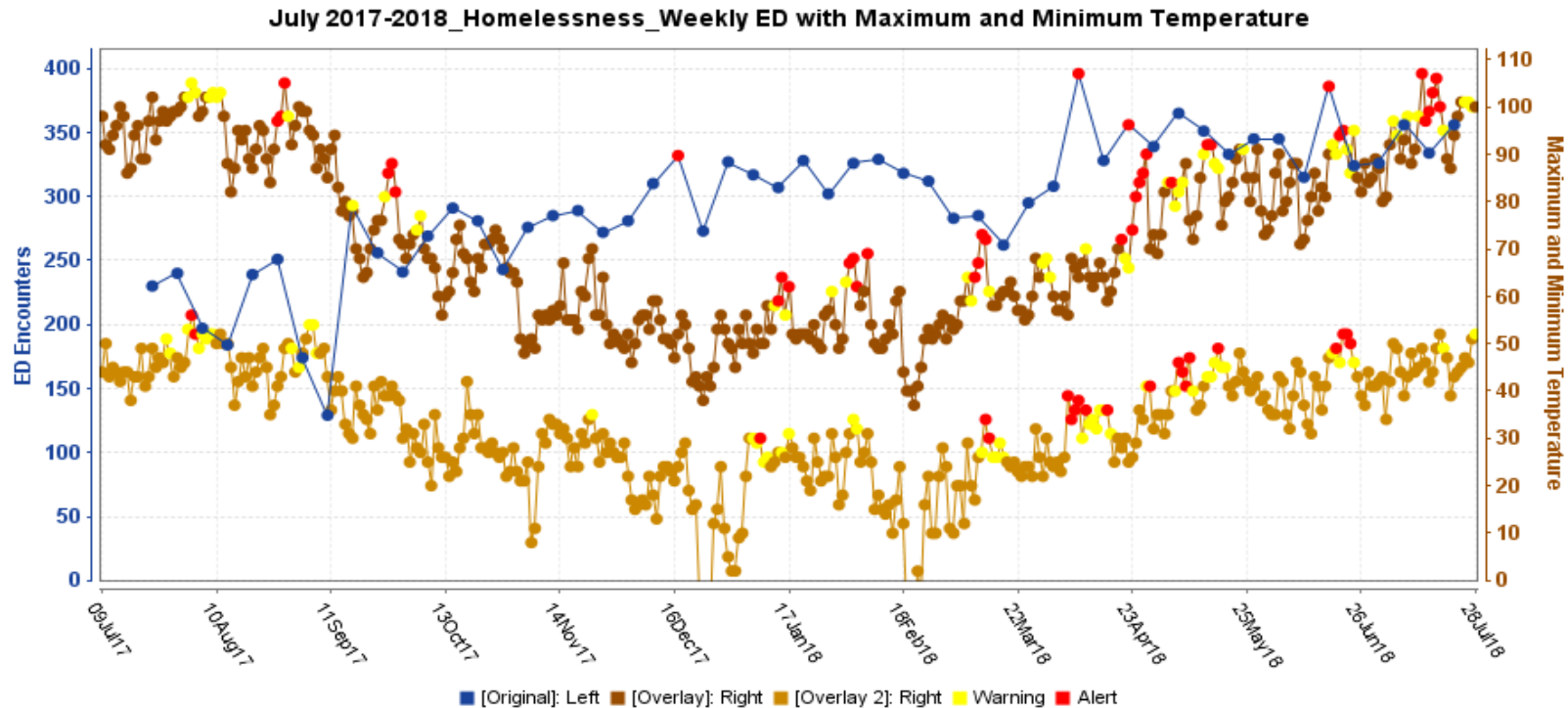
How about over the last year (July 2017-July 2018)?

o   No strong associations between temperatures and ED visits for indicated homelessness

o   No large uptick in ED visits during cold winter months (one data alert for early December)

Washington State Department of Health | 20

Demographics

o Patients presenting for care at EDs with indicated homelessness are primarily male

o This is consistent with the Department of Commerce reporting males experiencing homelessness at a higher rate

Sex	Count	Percentage
Female	2867	29.09%
Male	6987	70.91%

Demographics

o Department of Commerce reports adults between 18-24 years of age had the highest rate of homelessness

o Patients presenting to the ED for care with indicated homelessness were primarily adults between 20-60 years of age, with highest counts in adults ages 50-59 years of age

Age Group	Count	Percentage
Unknown	NR* (<10)	NR*
00-09	31	0.31%
10-19	170	1.73%
20-29	1485	15.07%
30-39	2249	22.82%
40-49	2160	21.92%
50-59	2411	24.47%
60-69	1044	10.59%
70-79	257	2.61%
80+	39	0.40%

Age Group	Count	Percentage
00-17	75	0.76%
18-44	4813	48.84%
45-64	4275	43.38%
65+	683	6.93%
Unknown	NR* (<10)	NR*

* - Non-zero counts of less than 10 (and percentages calculated from counts less than 10) are Not Reported, in order to prevent the possible identification of an individual

Demographics

Race	Count	Percentage
American Indian or Alaska Native	443	4.50%
Asian	190	1.93%
Black or African American	2187	22.19%
Native Hawaiian or Other Pacific Islander	67	0.68%
Other Race	308	3.13%
White	6597	66.95%
Not Reported	62	0.63%

o Majority of patients that presented for care at an ED with indicated homelessness were White or Black or African American

o Department of Commerce reports that Black or African American, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islanders experience homelessness at higher rates than White individuals

Population Data Details

Triage Notes and Chief Complaints indicate patients presented for care primarily for:

- Blood sugar complications (such as hyperglycemia)
- Medication evaluations
- Drug or alcohol use or detox/withdrawal (substance)
- Mental health issues (such as evaluations, hallucinations, suicide ideation, suicide with plan, paranoia, depression, panic attacks, altered mental status, etc.)
- Chest pain
- Shortness of breath
- Seizures
- Pain, abscesses, rash, burns, and abrasions
- Dehydration
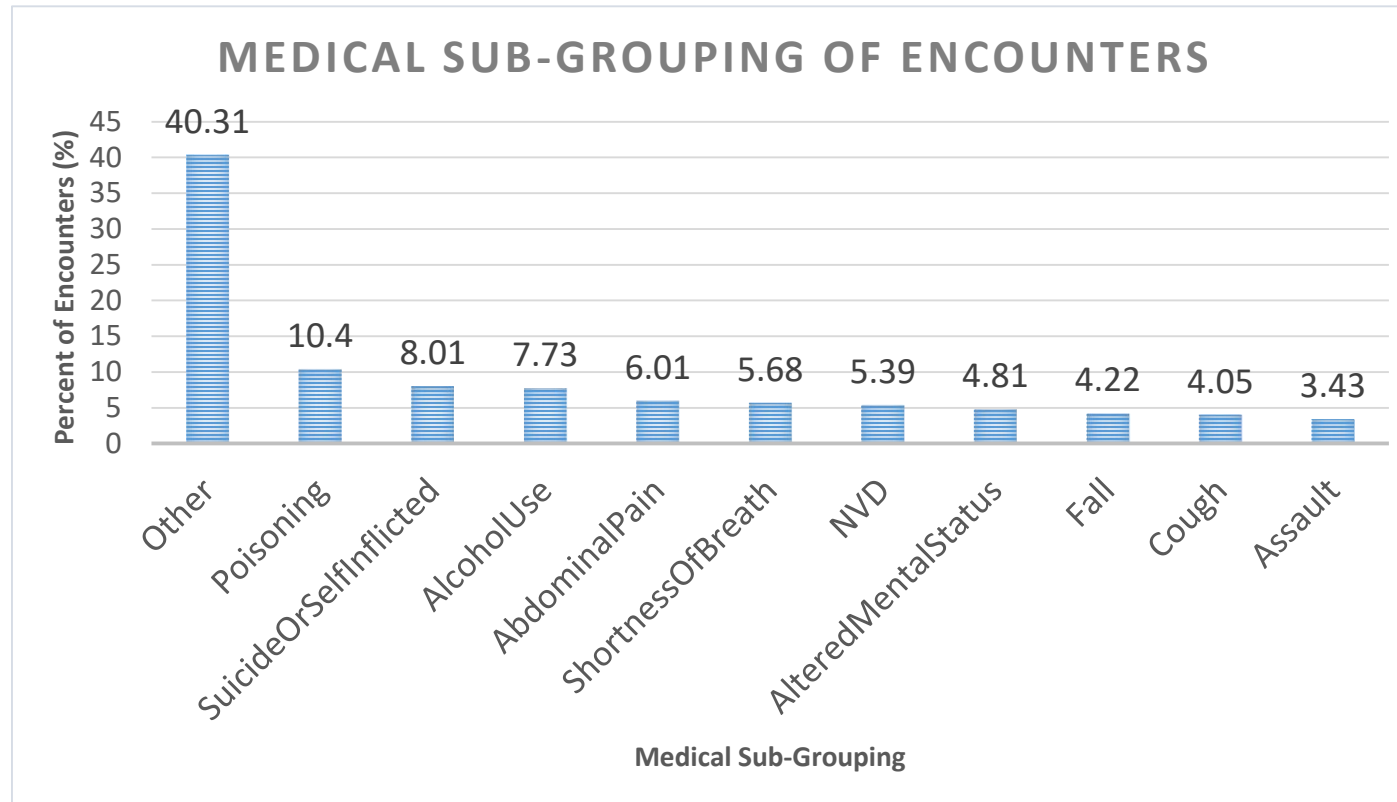- Fall (a few associated with intoxication)

Population Data Details

Triage Notes and Chief Complaints indicate patients presented for care primarily for:

- Blood sugar complications (such as hyperglycemia)
- Medication evaluations
- Drug or alcohol use or detox/withdrawal (substance)
- Mental health issues (such as evaluations, hallucinations, suicide ideation, suicide with plan, paranoia, depression, panic attacks, altered mental status, etc.)
- Chest pain
- Shortness of breath
- Seizures
- Pain, abscesses, rash, burns, and abrasions
- Dehydration
- Fall (a few associated with intoxication)

Some of the top words recorded in Chief Complaints related to: Pain, evaluations, substance use, shortness of breath, mental, alcohol and suicidal

Population Data Details

MEDICAL SUB-GROUPING OF ENCOUNTERS

Percent of Encounters (%)

| Category	Value
Other	40.31
Poisoning	10.4
SuicideOrSelfInflicted	8.01
AlcoholUse	7.73
AbdominalPain	6.01
ShortnessOfBreath	5.68
NVD	5.39
AlteredMentalStatus	4.81
Fall	4.22
Cough	4.05
Assault	3.43

Medical Sub-Grouping

Reported sub-groupings in these encounters indicated poisoning, suicide/self-inflicted, alcohol use, abdominal pain and shortness of breath were top categories. 40.31% of visits fell into an "other" category that included 75 additional topics.

Time Intervals of ED Encounters

Counts For Every 30 Minutes

Counts For Every 60 Minutes

Counts For Every 120 Minutes
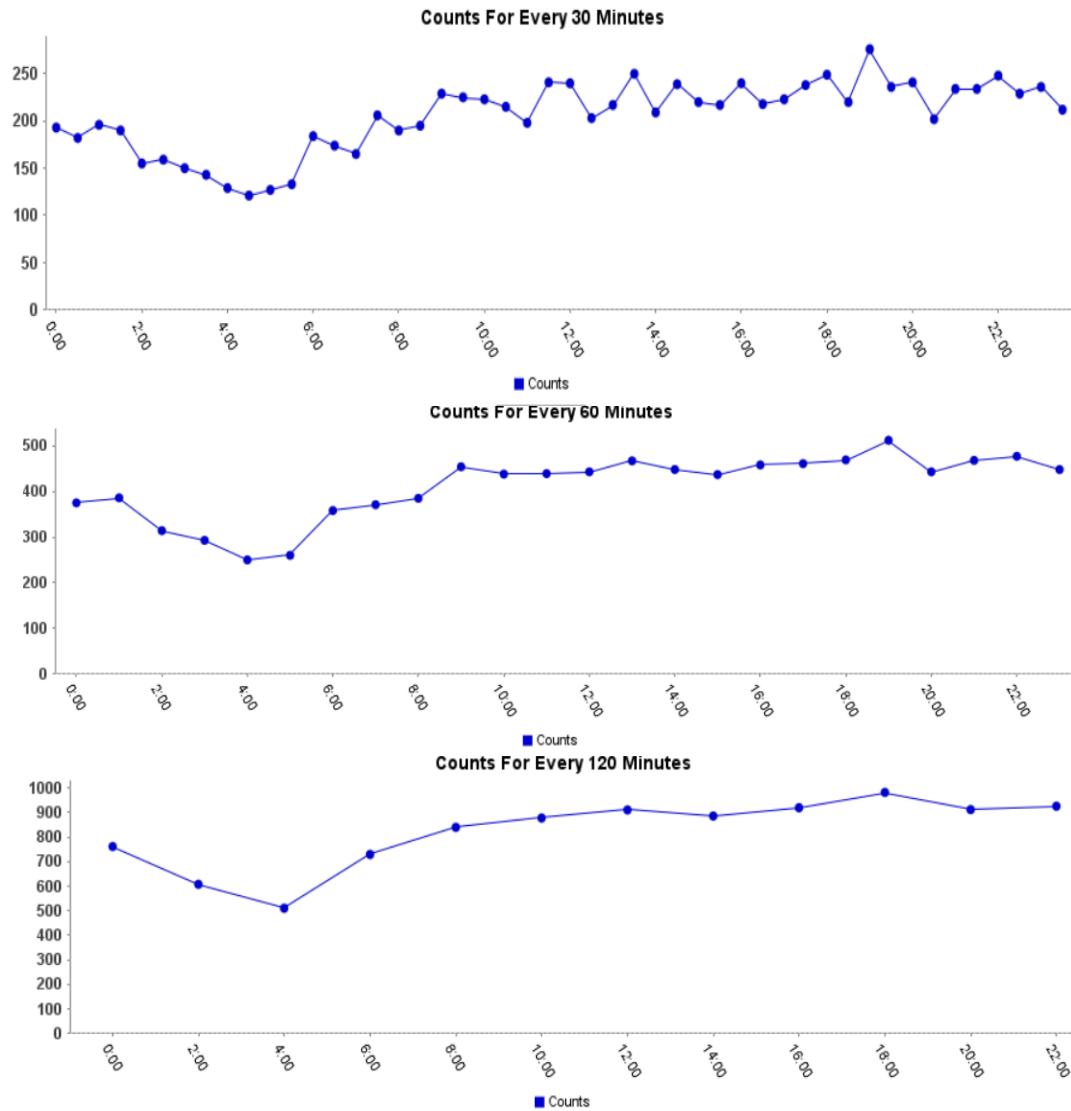
o No single increase throughout the 30 and 60 minutes intervals (jagged pattern)

o Visit counts for 120 minute intervals indicate a slight decrease early morning

Geography of Encounters

region
- 1 -- 19 (n=18)
- 20 -- 64 (n=7)
- 65 -- 212 (n=4)
- 213 -- 539 (n=4)
- 540 -- 7,363 (n=1)
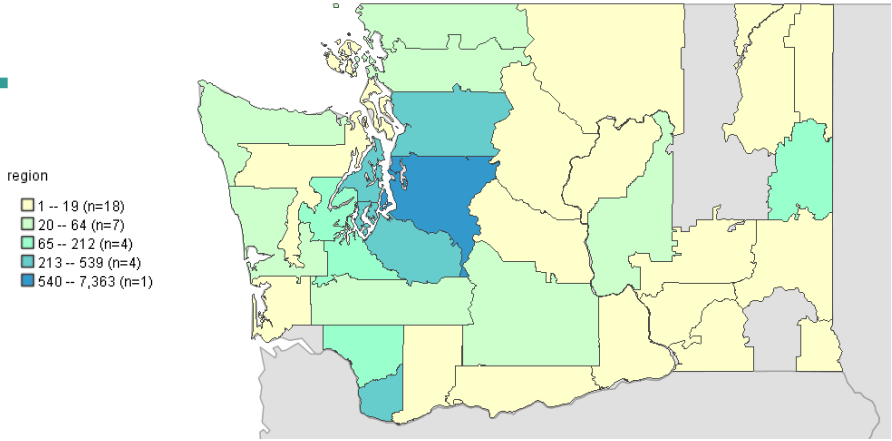
o Top 5 counties for number of encounters were: King, Pierce, Snohomish, Clark and Kitsap

o Magnitude of difference suggests possible under-representation in non-King County locations

County	Count	Percentage
King	7402	75.11%
Snohomish	522	5.30%
Pierce	477	4.84%
Clark	286	2.90%
Kitsap	286	2.90%
Spokane	201	2.04%
Cowlitz	119	1.21%
Thurston	106	1.08%
All Other Counties <1% each	455	4.62%

Geography of Encounters

region
- ☐ 0.02 -- 0.18 (n=13)
- ☐ 0.19 -- 0.4 (n=11)
- ☐ 0.41 -- 0.84 (n=8)
- ☐ 0.85 -- 1.67 (n=1)
- ☐ 1.68 -- 4.33 (n=1)
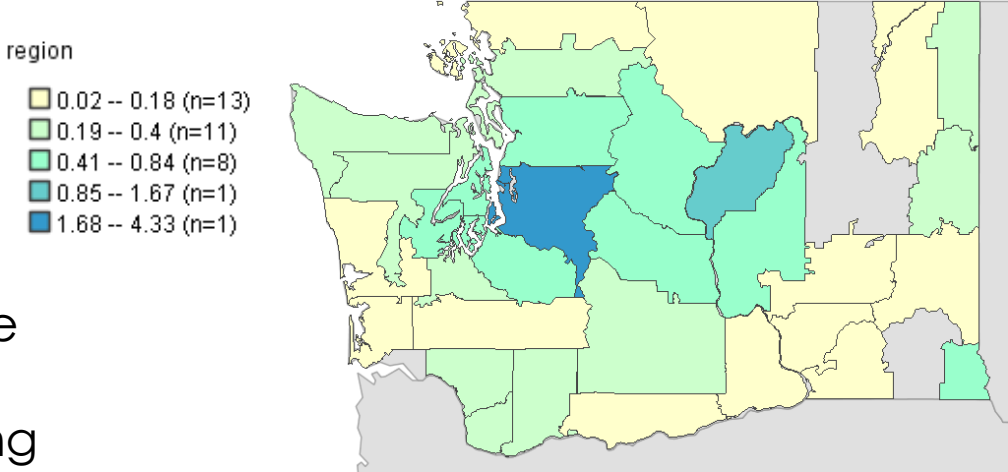
o Approximately 68% of these visits that indicate homelessness are presenting for care at 2 EDs in King County

o Top 5 counties for percent of ED encounters: King, Douglas, Kittitas, Chelan, and Pierce

County	Percent of Visits
King	4.32
Douglas	1.67
Kittitas	0.84
Chelan	0.74
Pierce	0.61
Asotin	0.58
Snohomish	0.56
Kitsap	0.52
Mason	0.50

Washington State Department of Health | 29

Geographic Variation in Homelessness

o In the 2017 Point in Time Count, about 50% of people experiencing homelessness were in King County

o Counties with higher homelessness rates than the state included: Jefferson, King, Clallam, and Whatcom
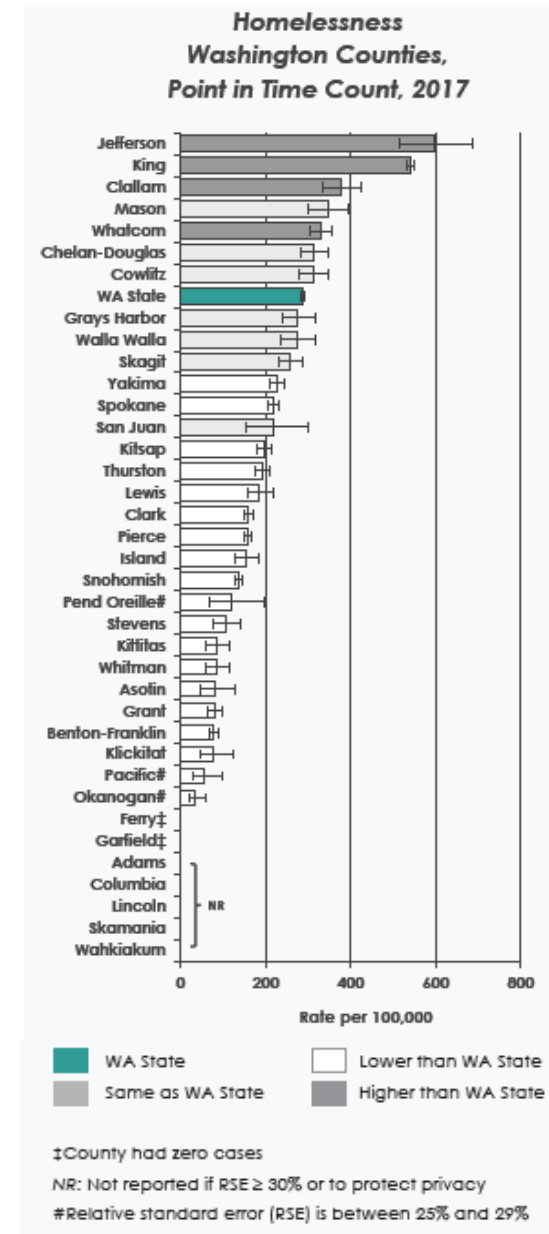
Figure to the right taken from the Washington State Health Assessment showing geographic results from the 2017 Point in Time Count.

Homelessness
Washington Counties,
Point in Time Count, 2017

Rate per 100,000

WA State
Same as WA State
Lower than WA State
Higher than WA State

‡County had zero cases
NR: Not reported if RSE ≥ 30% or to protect privacy
#Relative standard error (RSE) is between 25% and 29%

Summary

o In total, syndromic surveillance captured over 15,600 ED encounters from July 2017- July 2018 for which chief complaint, triage notes, or discharge diagnosis indicated homelessness (over 9,800 encounters from January-July 2018).

o Men were more likely than women to be seen at reporting emergency departments (70.91% male, 29.09% female).

o White (66.95%) and Black or African American (22.19%) patients have higher rates of ED visits for homelessness.

o Among ED visits that indicated homelessness, the majority of patients were adults between 20-60 years of age (84.28%).

o Geographically, the highest percentage of encounters (75.11%) and highest weekly percent of ED visits (4.32%) were in King County.

Questions

- What are you monitoring?
  - Health effects of the wildfires
  - Drowning and submersions
  - Gearing up for flu season
  - Traffic-related injuries

- Are there areas for which you would like help from RHINO staff?
  - ESSENCE training
  - Query development
  - Analysis support

- Are there call topics you'd like to hear us present on?
  - Substance use → marijuana, methamphetamines, opioids
  - Drownings and submersion events
  - Sexual violence

- Are there topics **you** would like to present? We want to hear what you do!

Contact Us!

RHINO@DOH.WA.GOV