

Utah Health Status Update:

Initial Diagnosis of Opioid Naive Patients

September 2017

The Centers for Disease Control and Prevention (CDC) has developed and published the “CDC Guideline for Prescribing Opioids for Chronic Pain” which includes recommendations for the use of non-opioid medication, physical treatment, behavioral treatment, and other procedures in conjunction with or as an alternative to opioids. It also suggests increased awareness of characteristics that indicate higher-risk opioid users among healthcare providers and recommends beginning with short-term low dose opioids if necessary.¹ The Utah Department of Health (UDOH) is in the process of updating its 2009 “Utah Clinical

Guidelines on Prescribing Opioids for Treatment of Pain” to align with the new CDC guideline.

The Utah All Payer Claims Database (APCD) can help explain the current experience of patients who use opioids for both acute and chronic conditions. This database contains medical and pharmacy claims and member eligibility records from Medicaid and commercial payers that cover 2,500 or more Utahns.² This analysis used APCD claims data to describe demographic and diagnosis characteristics of patients who became chronic opioid users after beginning opioid use as an opioid naive patient. A patient was defined as “**opioid naive**” if they were not dispensed an opioid in the 30 days prior to the initial opioid prescription. Patients become **chronic opioid users**, or “chronic users” if dispensed an opioid for at least six consecutive months.

The study period used for this analysis was July 1, 2014–June 30, 2015 with lookback and follow-up periods to determine continuous eligibility, opioid naive status, and chronic use. A patient must have been covered by a health plan that contributed complete eligibility files and medical and pharmacy claims for the study period and been covered for at least 11 months of both 2014 and 2015. Records that failed data quality control were excluded. The resulting data set included 355,580 people from both commercial payers and Medicaid.

All patients in the cohort began as opioid naive. Opioid users who were not opioid naive during the study period were excluded. It is important to note that a patient may appear more than once in the sample if they had a break of 30 days or more between episodes of opioid use. Opioid prescriptions were identified by the National Drug Code (NDC) on a pharmacy claim. Opioids for this analysis were defined by the CDC³ and restricted to those with a Drug Enforcement Agency (DEA) class of II, III, and IV. Opioids typically prescribed for the treatment of substance use disorder were excluded in order to focus on opioid use for pain management.

Diagnosis information was obtained by joining medical claims from the prescriber that occurred on the same day as the prescription was written. Prescribers were identified using the National Provider ID (NPI) on both the pharmacy and medical claims. Patients who had more than one valid principal diagnosis code at the time of prescription were excluded to control for comorbidities since multiple diagnoses can not be easily prioritized. Patients without a valid principal diagnosis code were also excluded. The Healthcare Cost and Utilization Project Clinical Classification Software (CCS) was used to aggregate diagnosis codes into groups.⁴

CDC data show that women are more likely to have chronic pain, more likely to be prescribed opioids, and more likely to die from overdose.⁵ In our data, opioid naive patients (57%) and chronic users (58%) were more likely to be female as expected.

People aged 65 and older were not included in the study population due to the lack of Medicare data. However, the age distribution of opioid naive and chronic users was expected where older people are more likely to

KEY FINDINGS

- This analysis used APCD claims data to describe demographic and diagnosis characteristics of patients who became chronic opioid users after beginning opioid use as an opioid naive patient.
- The most common diagnosis categories for opioid naive patients included a mix of acute and chronic conditions; however, the conversion rates from naive to chronic opioid user were generally lower for acute diagnoses. This is consistent with prescribers following the CDC guideline.
- The most common initial diagnoses for chronic users were chronic conditions, some of which were not observed as the most common for opioid naive patients. While most of these diagnoses were expected, some were not, such as hypertension and diabetes.
- In order to better understand how to improve the treatment of pain and reduce opioid misuse and abuse, future research will need to control for potential confounding variables, such as opioid dosage or days supply; history of substance use disorder, overdose, and mental health conditions; other comorbidities, such as cancer; and palliative and end of life care.

have chronic pain. Most chronic users (58.8%) in our cohort were aged 45-64. Young people aged 0-34 accounted for 31.7% of opioid naive patients but only 12.9% of chronic users.

Table 1 shows that the most common diagnoses for opioid naive patients included a mix of acute and chronic conditions; however, the conversion rates were generally lower for the acute diagnoses. This is consistent with prescribers following the CDC guideline.

Table 2 shows the most frequent initial diagnosis categories for chronic users. The most common initial diagnoses for chronic users were all chronic conditions, some of which were not observed as the most common for opioid naive patients. While most of these diagnoses were expected, some were not, such as hypertension and diabetes. This analysis suggests that further study is needed to understand why opioids are being used by chronic users with some diagnoses.

APCD data showed important differences in conversion from naive to chronic opioid use in terms of demographics and initial diagnosis. In order to better understand how to improve the treatment of pain and reduce opioid misuse and abuse, future research will need to control for potential confounding factors, such as opioid dosage or days supply; history of substance use disorder, overdose, and mental health conditions; patient risk for complex conditions, such as diabetes; other comorbidities, such as cancer; and palliative and end of life care. This analysis represents an important first step to describe the prescribing pattern based on the CDC guideline using data from the APCD. Future analysis would benefit from incorporating additional data to better understand Medicare patients, substance use disorder and mental health conditions, prescriptions not billed to insurance, and adverse outcomes of opioid use. The integration of these valuable data sources is an ongoing project at the UDOH.

For additional information about this topic, contact the Office of Health Care Statistics, 801-538-7048, healthcarestat@utah.gov; or the Office of Public Health Assessment, Utah Department of Health, (801) 538-9191, email: chdata@utah.gov.

Top Diagnoses for Initial Opioid Prescription

Table 1. Top 10 most frequent principal diagnosis categories (CCS) attributed to initial opioid prescription and conversion rate of opioid naive users to chronic users, Utah, July 1, 2014–June 30, 2015

	Opioid Naive Patients (0-29 days)	Chronic Users (180+ days)	Chronic Usage Conversion Ratio
Spondylosis; intervertebral disc disorders; other back problems	2,256	323	14.3%
Other connective tissue disease	1,280	67	5.2%
Other non-traumatic joint disorders	847	71	8.4%
Sprains and strains	816	2	0.3%
Acute and chronic tonsillitis	770	19	3.1%
Abdominal pain	617	8	1.4%
Joint disorders and dislocations; trauma-related	592	1	0.2%
Abdominal hernia	575	4	0.7%
Other upper respiratory disease	563	1	0.2%
Contraceptive and procreative management	520	2	0.3%

Top Diagnoses at Initial Prescription for Chronic Users

Table 2. Top 10 most frequent principal diagnosis categories (CCS) at initial prescription for chronic users, Utah, July 1, 2014–June 30, 2015

	Number	Percentage
Spondylosis; intervertebral disc disorders; other back problems	323	27.2%
Other non-traumatic joint disorders	71	6.0%
Other connective tissue diseases	67	5.6%
Medical examination/evaluation	58	4.9%
Headache; including migraine	56	4.7%
Osteoarthritis	44	3.7%
Other nervous system disorders	42	3.5%
Essential hypertension	42	3.5%
Diabetes mellitus without complication	30	2.5%
Rheumatoid arthritis and related disease	26	2.2%

1. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>.

2. About the All Payer Claims Data. Office of Health Care Statistics, Utah Department of Health. <http://stats.health.utah.gov/about-the-data/apcd/>.

3. Resource Center, Drug Overdose, CDC Injury Center. <https://www.cdc.gov/drugoverdose/media/index.html>.

4. HCUP CCS. Healthcare Cost and Utilization Project (HCUP). March 2017. Agency for Healthcare Research and Quality, Rockville, Md. www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp.

5. Prescription Painkiller Overdoses. Vital Signs. CDC. <https://www.cdc.gov/vitalsigns/prescriptionpainkilleroverdoses/index.html>.

UDOHS ANNOUNCEMENT:

The Utah Women Infants and Children (WIC) Program is excited about the transition to electronic WIC benefits (e-WIC) soon (early 2019). Utah WIC participants will directly benefit in many ways after receiving their first e-WIC smartcard for use at any of the WIC authorized grocery stores across Utah. For more information about electronic benefits and the WIC Program, visit the USDA website: <https://www.fns.usda.gov/wic/wic-electronic-benefits-transfer-ebt>.

Breaking News, September 2017

Multi-Jurisdiction Response to *E. coli* infection in Hildale, Utah

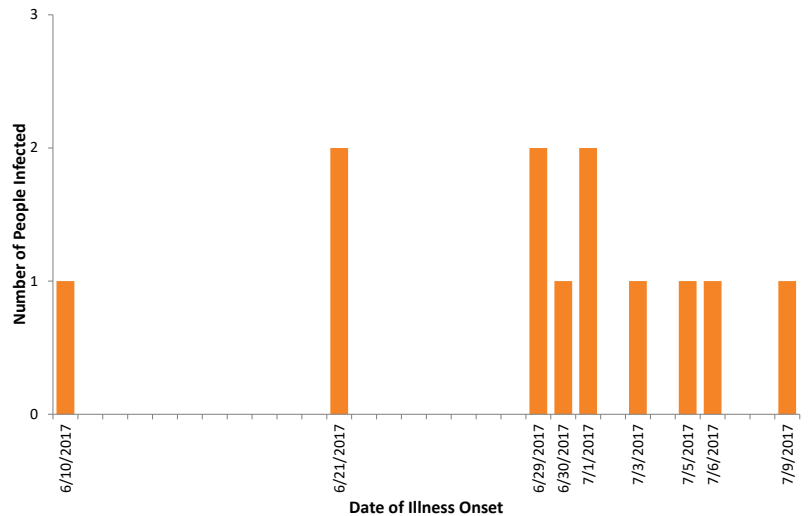
In June of 2017, the Utah Department of Health was notified of two children from the Hildale, Utah/Colorado City, Arizona area that tested positive for *E. coli* O157:H7. Both children developed hemolytic uremic syndrome (HUS), a severe complication of *E. coli* infection, and subsequently died. Upon investigation, it was found that these cases were infected with a strain of *E. coli* that had never been identified before in the United States.

A response team with representatives from the Southwest Utah Health Department, Mohave County Department of Health, Utah Department of Health, Arizona Department of Health Services, and the Centers for Disease Control and Prevention was formed and conducted an in-depth investigation over the course of several weeks. Environmental sampling revealed that a bull and two horses also tested positive for the outbreak strain of *E. coli*. No common food source was identified among cases. While the initial source of the outbreak was not identified, it is suspected that initial cases became sick due to animal exposures, with additional cases resulting from person-to-person transmission. Community messaging was distributed to increase awareness around animal handling practices to prevent further *E. coli* infections.

In total, 12 individuals (age range 1–28 years; median age three years) were confirmed cases associated with this outbreak. Of these, nine were hospitalized, four developed HUS, and two died. As of August 17, 2017, no other outbreak-associated cases have been identified.

For more information about *E. coli* in Utah, visit <http://health.utah.gov/epi/diseases/ecoli/>.

People Infected with the Outbreak Strain of *E. coli* O157:H7 as of August 17, 2017



Source: Utah Department of Health Bureau of Epidemiology

Community Health Spotlight, September 2017

Measles Outbreak, Utah 2017

In February 2017, the Salt Lake County Health Department (SLCoHD) and Utah Department of Health (UDOH) responded to an outbreak of measles. The index case was younger than five years of age and appropriately immunized for age with one dose of measles, mumps and rubella (MMR) vaccine. The index case traveled to an area where measles is endemic without receiving a second MMR dose as recommended by the CDC prior to travel to this region. Upon returning to Utah, the index case had extensive contacts during the infectious period related to church, family events, and multiple medical visits. Two unvaccinated contacts of the index case, a social contact, and an unrelated individual from a public event were subsequently confirmed as measles cases. During the investigation, 515 persons were identified as potentially exposed contacts; of these, 341 provided measles documentation of immunity, and the rest were offered post-exposure prophylaxis (PEP) in the form of vaccination or immune globulin (IG). Susceptible individuals (N=174) were asked to participate in voluntary quarantine; all of them were actively monitored for symptoms by SLCoHD with the support of UDOH. The UDOH and SLCoHD developed and disseminated educational materials for the community to prevent further measles transmission. Both the UDOH and SLCoHD continued to identify and test suspect cases (N=35), but due to the rapid outbreak response, no additional cases were identified.

For most children, a two-dose series of MMR vaccine is recommended with the first dose recommended at 12–15 months of age and the second dose between the ages of 4–6 years. However, if the child is going to travel to an area where there is high risk of exposure to measles, a second dose should be given even if the child is younger than four years of age as long as at least four weeks have elapsed since the first dose.

For more information about measles in Utah, visit <http://health.utah.gov/epi/diseases/measles/>.

Monthly Health Indicators Report

(Data Through July 2017)

Monthly Report of Notifiable Diseases, July 2017	Current Month # Cases	Current Month # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
Campylobacteriosis (<i>Campylobacter</i>)	36	62	330	296	1.1
Shiga toxin-producing <i>Escherichia coli</i> (<i>E. coli</i>)	15	19	47	46	1.0
Hepatitis A (infectious hepatitis)	7	2	15	6	2.3
Hepatitis B, acute infections (serum hepatitis)	0	1	6	5	1.1
Meningococcal Disease	0	0	1	3	0.4
Pertussis (Whooping Cough)	6	97	235	580	0.4
Salmonellosis (<i>Salmonella</i>)	51	37	254	199	1.3
Shigellosis (<i>Shigella</i>)	1	3	19	22	0.8
Varicella (Chickenpox)	2	8	116	150	0.8
West Nile (Human Cases)	0	1	0	1	0.0

Quarterly Report of Notifiable Diseases, 2nd Qtr 2017	Current Quarter # Cases	Current Quarter # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
HIV/AIDS†	30	36	74	77	1.0
Chlamydia	2,353	1,981	4,984	4,106	1.2
Gonorrhea	627	273	1,191	569	2.1
Syphilis	33	17	57	32	1.8
Tuberculosis	8	8	19	14	1.3

Medicaid Expenditures (in Millions) for the Month of July 2017	Current Month	Expected/Budgeted for Month	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	\$ 7.4	\$ 4.3	\$ 160.0	\$ 159.0	\$ 1.0
Inpatient Hospital	\$ 10.0	\$ 10.4	\$ 112.1	\$ 115.7	\$ (3.6)
Outpatient Hospital	\$ 2.6	\$ 1.7	\$ 51.8	\$ 51.6	\$ 0.2
Long Term Care	\$ 31.0	\$ 38.7	\$ 286.3	\$ 294.8	\$ (8.5)
Pharmacy	\$ (8.0)	\$ (12.0)	\$ 87.1	\$ 86.8	\$ 0.3
Physician/Osteo Services	\$ 1.8	\$ 1.9	\$ 43.9	\$ 49.2	\$ (5.3)
TOTAL MEDICAID	\$ 80.4	\$ 80.6	\$ 2,540.2	\$ 2,542.8	\$ (2.5)

Program Enrollment for the Month of July 2017	Current Month	Previous Month	% Change* From Previous Month	1 Year Ago	% Change* From 1 Year Ago
Medicaid	283,595	283,969	-0.1%	292,220	-3.0%
PCN (Primary Care Network)	11,342	13,344	-15.0%	16,604	-31.7%
CHIP (Children's Health Ins. Plan)	19,253	19,248	+0.0%	18,199	+5.8%

Health Care System Measures	Annual Visits			Annual Charges	
	Number of Events	Rate per 100 Population	% Change* From Previous Year	Total Charges in Millions	% Change* From Previous Year
Overall Hospitalizations (2014)	281,302	8.9%	-0.8%	\$ 7,281.6	+11.8%
Non-maternity Hospitalizations (2014)	177,881	5.5%	-1.1%	\$ 6,200.8	+11.6%
Emergency Department Encounters (2014)	710,266	22.9%	+2.6%	\$ 1,760.5	+13.2%
Outpatient Surgery (2013)	404,303	13.1%	+7.3%	\$ 2,167.9	+11.5%

Annual Community Health Measures	Current Data Year	Number Affected	Percent/Rate	% Change* From Previous Year	State Rank§ (1 is best)
Obesity (Adults 18+)	2015	510,400	24.5%	-4.7%	8 (2015)
Cigarette Smoking (Adults 18+)	2015	189,600	9.1%	-6.2%	1 (2015)
Influenza Immunization (Adults 65+)	2015	181,600	59.0%	+1.9%	36 (2015)
Health Insurance Coverage (Uninsured)	2015	263,600	8.8%	-14.6%	n/a
Motor Vehicle Traffic Crash Injury Deaths	2015	247	8.2 / 100,000	+3.7%	19 (2015)
Poisoning Deaths	2015	697	23.3 / 100,000	+6.8%	43 (2015)
Suicide Deaths	2015	609	20.3 / 100,000	+7.8%	47 (2015)
Diabetes Prevalence (Adults 18+)	2015	145,800	7.0%	-1.4%	10 (2015)
Poor Mental Health (Adults 18+)	2015	333,300	16.0%	+0.6%	18 (2015)
Coronary Heart Disease Deaths	2015	1,619	54.0 / 100,000	+1.0%	2 (2015)
All Cancer Deaths	2015	3,091	103.2 / 100,000	+0.1%	1 (2015)
Stroke Deaths	2015	887	29.6 / 100,000	+2.0%	18 (2015)
Births to Adolescents (Ages 15-17)	2015	489	6.9 / 1,000	-11.7%	13 (2015)
Early Prenatal Care	2015	38,803	76.4%	+0.2%	n/a
Infant Mortality	2015	257	5.1 / 1,000	+3.2%	13 (2014)
Childhood Immunization (4:3:1:3:3:1)	2015	37,400	73.6%	-1.3%	35 (2015)

† Diagnosed HIV infections, regardless of AIDS diagnosis.

* Relative percent change. Percent change could be due to random variation.

§ State rank based on age-adjusted rates where applicable.

Notes: Data for notifiable diseases are preliminary and subject to change upon the completion of ongoing disease investigations. Active surveillance has ended for influenza until the 2017-2018 season.