



Few Patients Received High Amounts of Opioids from IHS-Run Pharmacies

Key Takeaway

Data show that few patients received high amounts of opioids from IHS-run pharmacies, and IHS reported positive outcomes from opioid-related initiatives. However, IHS has opportunities to improve the efficiency of its opioid monitoring systems and IHS officials reported challenges in using State-run prescription drug monitoring programs and in tracking care outside of IHS.

Why OIG Did This Review

The opioid crisis is a public health emergency.¹ In 2018 alone, opioid-related overdoses in the United States killed 46,802 people.² The coronavirus disease 2019 (COVID-19) pandemic underscores the importance of opioid response efforts—the pandemic fuels factors such as unemployment that contribute to opioid misuse, and it may make access to treatment or support services more difficult.

The Office of Inspector General (OIG) has been tracking opioid use in Department of Health and Human Services (HHS) programs since 2016.³ Previous OIG work has assessed opioid use in both Medicare and Medicaid, including identifying beneficiaries at serious risk of misuse or overdose.⁴ This issue brief focuses on the Indian Health Service (IHS), which serves an American Indian and Alaska Native (AI/AN) population that may be at increased risk of opioid misuse or overdose. Between 2016 and 2017,

AI/ANs experienced a larger percentage increase in deaths involving prescription opioids than any other group.⁵ In addition, previous OIG work found that some IHS hospitals did not always follow IHS policy when prescribing and dispensing opioids.⁶

What OIG Found

OIG's analysis of IHS data on prescription drugs showed that few patients received high amounts of opioids from IHS-run pharmacies. IHS has taken a number of steps to ensure appropriate opioid use among its patients, and IHS officials highlighted positive outcomes from these initiatives. However, IHS has opportunities to improve the efficiency of its opioid monitoring systems by further automating its system for electronic health records (EHRs). Additionally, IHS officials reported challenges in using State-run prescription drug monitoring programs (PDMPs) and in tracking care that patients receive outside of IHS; both factors can limit IHS staff's ability to monitor opioid use.

What OIG Recommends

We recommend that IHS (1) assess the costs and benefits of updating its EHR system with tools to support more automated monitoring and (2) request support from States and Federal partners to address challenges in using State-run PDMPs. IHS concurred with both recommendations.

How OIG Did This Review

We analyzed prescription drug data for opioids received from IHS-run pharmacies between May 2018 and April 2019. We calculated patients' morphine equivalent dose (MED)—a measure that translates various opioid formulations and strengths into a standard value—to compare opioids received across patients and prescriptions. In addition, we reviewed IHS documents regarding IHS's policies for prescribing and dispensing opioids and steps that IHS has taken in response to the opioid crisis. We also conducted interviews with IHS officials and staff to understand (1) the results of IHS's efforts; (2) how IHS monitors opioid use and opioid-related activities; and (3) challenges that IHS faces in preventing and detecting opioid misuse.

BACKGROUND

Indian Health Service

IHS is the principal Federal health care agency for AI/ANs, providing comprehensive health services to an estimated 2.56 million people.⁷ IHS provides health services in three ways: (1) through IHS-operated facilities; (2) through Tribally operated facilities funded through IHS contracts and compacts; and (3) through Urban Indian Organizations that receive funding through IHS contracts and grants. More than 60 percent of IHS appropriations are administered by Tribes.⁸ Not all AI/ANs receive care from facilities operated by IHS, and those who do may also receive health care services—including prescription drugs—from facilities not directly operated by IHS. These outside sources of care include Tribally operated facilities, Urban Indian Health Programs, other Federal programs such as the Department of Veterans Affairs, and private providers.⁹

IHS pharmacies

There are 12 IHS Areas, 9 of which have 80 pharmacies directly operated by IHS (hereinafter referred to as IHS-run pharmacies). The remaining 3 Areas do not have any pharmacies directly operated by IHS. See Appendix A for a map of the IHS Areas, the locations of IHS-run pharmacies, and the distribution across Areas of patients with any prescriptions.

IHS-run pharmacies use IHS's EHR system, which contains individual patients' health-related information, including medical history, laboratory testing information, and prescription drug information.

IHS prescriptions

IHS-run pharmacies may directly fill a patient's prescription or may electronically transfer it to a non IHS-run pharmacy of the patient's choice. IHS might need to electronically transfer a prescription if there is no IHS-run pharmacy near a patient's home or if a specific drug is not on a location's formulary. Prescriptions that are filled by an IHS-run pharmacy or are electronically transferred from an IHS-run pharmacy are referred to throughout this report as "received from an IHS-run pharmacy."

Scope

To assess IHS's efforts to ensure appropriate opioid use among its patients, we analyzed opioid prescriptions received from IHS-run pharmacies and we reviewed steps that IHS has taken to improve opioid-related care at facilities it operates. This issue brief does not address care that AI/ANs do not receive directly through IHS (e.g.,

prescriptions written and filled by non-IHS-run pharmacies or services provided by Tribally operated facilities), but rather focuses on IHS's efforts to combat the opioid crisis through the care it provides to patients.

RESULTS

Few patients received high amounts of opioids from IHS-run pharmacies between May 2018 and April 2019

Between May 2018 and April 2019, approximately one in six IHS patients who received a prescription from an IHS-run pharmacy received at least one opioid prescription from an IHS-run pharmacy. Sixteen percent of patients—57,134 of the nearly 367,683 who received prescriptions from an IHS-run pharmacy—received opioids from an IHS-run pharmacy. This represents all opioids received from an IHS-run pharmacy, regardless of the reason the opioids were prescribed or the amount that was prescribed. It includes the 2,106 patients who had cancer or who were in hospice care during our study period.

The number of IHS patients receiving opioids and the amounts they received may be higher than reported in this issue brief because this review analyzes only those opioids received from an IHS-run pharmacy.

See Appendix B for more information and the characteristics (e.g., sex, age) of patients who received at least one opioid from an IHS-run pharmacy, and information on the opioids that were most commonly prescribed to them.

Only 159 patients received high amounts of opioids from IHS-run pharmacies

Only 159 IHS patients—less than half of one percent of IHS patients who received opioids—received high amounts of opioids from IHS-run pharmacies. This does not include patients who had cancer or were in hospice during our study period and does not include prescriptions used for medication-assisted treatment of opioid use disorder.

The 159 patients who received high amounts of opioids each received an average MED of more than 120 mg daily for at least 3 months. MED—which is also known as morphine milligram equivalent (MME)—is a measure that equates all the various opioids and strengths to one standard value.¹⁰ The *Indian Health Manual (IHM)*, which is the reference manual for IHS employees, instructs clinicians to use caution in prescribing greater than or equal to 50 MED per day and to avoid increasing or carefully justify decisions to increase dosages beyond 90 MED per day for chronic pain.¹¹

Although patients may have received opioids for legitimate purposes, any high amount raises concern. In addition to the risk of abuse and misuse, opioids also carry health risks, including respiratory depression, constipation, drowsiness, and confusion.¹²

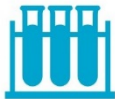
For more information about patients who received high amounts of opioids, see Appendixes B and C.

Some of the 159 patients who received high amounts of opioids may not always have received care suggested by IHS policies. Although few patients received high amounts of opioids, some of these patients may not have received care suggested by IHS policies. Receiving such care is especially important for patients who received high amounts of opioids. Patients receiving high amounts of opioids are at higher risk of overdose.¹³ The *IHM* establishes policy for IHS-employed providers to follow when prescribing opioids to promote appropriate opioid prescribing and reduce opioid misuse. For instance, providers should consider coprescribing naloxone, which can reverse the effects of an opioid overdose, and to order initial and periodic urine drug tests,¹⁴ and avoid coprescribing benzodiazepines whenever possible.¹⁵ See Exhibit 1 for more information.

Exhibit 1: The 159 IHS patients who received high amounts of opioids may not always have received suggested care.



60% did **not** receive a prescription for naloxone from an IHS-run pharmacy during our timeframe, but may have received it prior to our timeframe, or from another source (e.g., a non-IHS provider or over the counter)



34% did **not** receive a urine drug test, which helps providers to monitor patients for prescribed medications and illicit drugs



17% received a concurrent prescription for a benzodiazepine, which can cause an overdose fatality when taken with an opioid

Note: Providers may deem it appropriate to coprescribe benzodiazepines and opioids for an individual patient. However, given the high amounts of opioids received by these patients, their cases may warrant additional review to ensure appropriate prescribing.

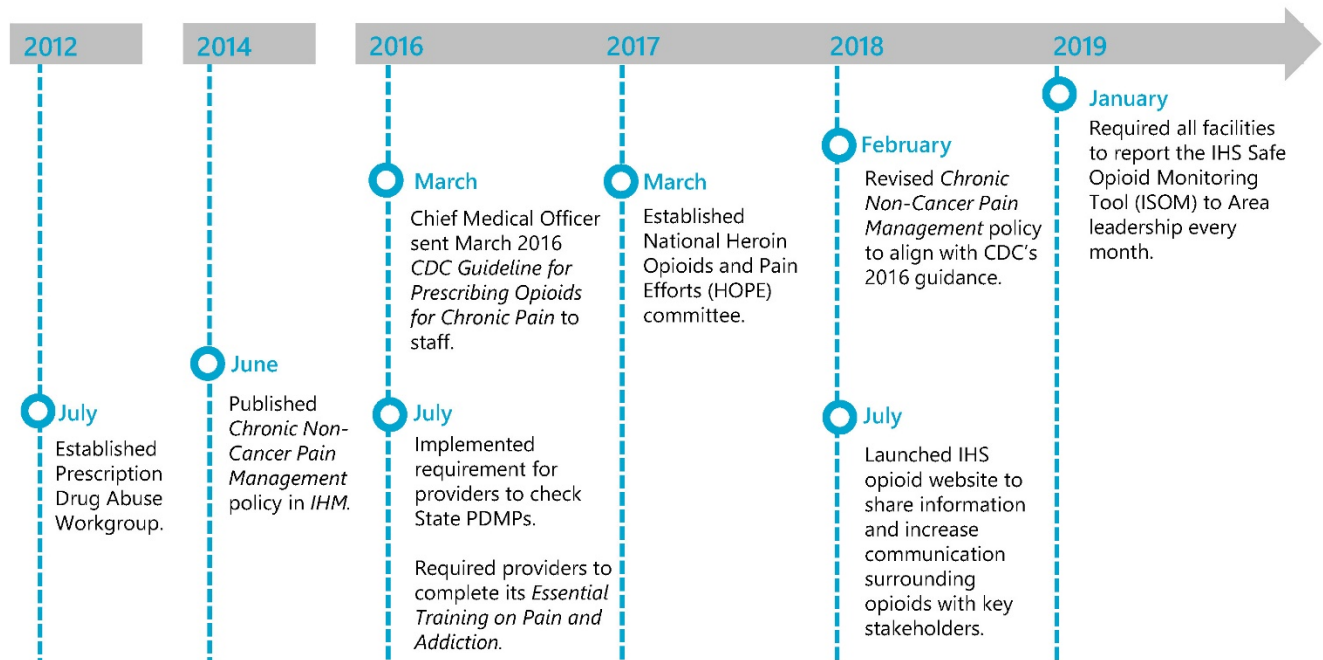
Source: OIG analysis of IHS prescription data and review of *IHM*, 2020.

IHS has taken several steps to prevent, detect, and reduce overprescribing and misuse of opioids at its facilities, and IHS officials highlighted some positive outcomes

Since 2012, IHS has taken a number of steps to help ensure appropriate opioid use among its patients. Many of these steps are documented in the *IHM*. Some of the specific steps that IHS has taken include the following: requiring IHS-employed providers to routinely check State-run PDMPs—electronic databases that collect designated data on dispensing of controlled substances—when prescribing or dispensing opioids; adopting the Centers for Disease Control and Prevention’s (CDC’s)

Guideline for Prescribing Opioids for Chronic Pain; requiring prescribers to take a training course on pain and addiction; and increasing its monitoring of opioid use and opioid-related activities.^{16, 17} These and other key steps that IHS has taken are outlined in Exhibit 2. For more details about IHS’s opioid-related efforts, see Appendix D.

Exhibit 2: Key steps that IHS has taken to combat the opioid epidemic



Source: OIG summary of IHS’s Indian Health Manual, documents, and interviews, 2020.

In March 2018 congressional testimony, IHS’s Chief Medical Officer described many of IHS’s opioid-related initiatives and reported that there were promising signs of positive outcomes as a result of IHS’s efforts.¹⁸ Specifically, the Chief Medical Officer said that available IHS data indicated a 13-percent decrease in the average number of opioid prescriptions per 100 of all IHS users from fiscal year (FY) 2013 to FY 2016. In addition, he noted that naloxone prescriptions increased 518 percent from FY 2013 to FY 2017. (Naloxone is a medication that can reverse the effects of an opioid overdose. When naloxone—such as the brand-name drug Narcan—is administered in a timely fashion, it can save lives by blocking the effects of opioids and restoring normal breathing.) The IHS Chief Medical Officer attributed this increase in prescriptions to IHS’s policy of encouraging naloxone prescriptions for patients who are at higher risk for opioid overdose.

In addition, IHS officials in four Areas noted particular successes on some opioid-related measures. The respective successes they reported include:

- Over 4 years, a 40-percent decrease in purchases for one Area's top nine opioids and a 71-percent decrease in methadone¹⁹;
- A 60-percent decrease in another Area's total MED from 2017 to 2019;
- A 27-percent decrease in a third Area's average MED per prescription since FY 2017; and
- A 50-percent decrease in opioid-related metrics at one facility in a fourth Area following a CDC training.

IHS has opportunities to improve the efficiency of its opioid monitoring systems

While IHS conducts opioid monitoring and has seen some positive outcomes, IHS has opportunities to improve the efficiency of its internal systems for monitoring opioids.²⁰ IHS officials identified monitoring tools that—as of August 2019—IHS's existing systems did not include. If these tools were available, they could improve the efficiency of IHS's opioid monitoring. Because they are not, IHS staff sometimes use manual techniques to conduct specific aspects of opioid monitoring. All IHS-run facilities use the same EHR system, so these opportunities to gain efficiency apply across IHS.²¹

IHS officials reported that the agency's EHR system, which it uses to manage patient care, lacks some tools to monitor care for patients receiving opioids. They reported that the EHR system does not have the ability to calculate MED for individual patients or to alert providers if a patient receiving opioids is also prescribed a benzodiazepine. Instead, IHS staff might rely on MEDs calculated from a PDMP or by hand and rely on manually reviewing a patient's file to find any benzodiazepine prescriptions. IHS is working to modernize its EHR system, but an IHS official reported that the modernization effort will not address these gaps.²²

IHS officials also reported that some information from the EHR system is not captured in summary-level reports.²³ (These reports aggregate opioid-related data at the facility level or Area level to provide an overall view of opioid prescribing.) For instance, when IHS staff export data from the EHR system, the exported file lacks an indicator for which patients have cancer. This means that all patients receiving opioids are included in the summary-level reports, and if staff note anything concerning, they have to manually review each patient's record to determine whether the opioid use is appropriate. The exported file also does not indicate whether or how many times providers completed PDMP checks. This makes it difficult for IHS staff to assess IHS providers' compliance with IHS policy.

IHS officials reported challenges in using State-run PDMPs and in tracking care provided outside of IHS

IHS officials reported challenges in (1) using State-run PDMPs and (2) tracking care that patients receive from non-IHS providers. PDMPs can help providers avoid drug interactions and identify drug-seeking or doctor shopping behavior. They can also be used by professional licensing boards to identify patterns of inappropriate prescribing or dispensing, or by law enforcement to identify cases of diversion of controlled substances. PDMPs are run by individual States. PDMPs can help track controlled-substance prescriptions that patients receive outside of IHS, but do not track other, nonpharmaceutical care that patients might receive outside of IHS.²⁴

PDMPs. IHS requires that (1) IHS-employed prescribers and pharmacists check the State PDMP prior to prescribing or dispensing, (2) IHS-employed prescribers conduct monthly self-audits, and (3) IHS-run pharmacies report their opioid prescribing data to State PDMPs.²⁵

IHS officials reported challenges in checking State-run PDMPs. They reported difficulty in (1) obtaining permission to access PDMPs in different States, (2) logging in to multiple States' PDMPs, and (3) searching (e.g., because of name misspellings or variations). Obtaining access to State PDMPs could be more difficult for IHS-employed providers because PDMPs often require a license in the State in which a provider is located to obtain access, but as Federal employees, IHS-employed providers can be licensed in any State, not necessarily the one in which they practice. IHS providers might experience a delay in receiving requested information or may have to use a workaround, such as a prescriber asking a pharmacist to run a patient report.

IHS officials also reported that PDMP information may not be complete, due to delayed or nonexistent reporting. For instance, Tribes are not required to report to PDMPs, though some do so voluntarily.

Outside care. IHS officials reported that their opioid-related monitoring efforts are complicated by difficulties in tracking care received outside of IHS. While PDMPs can provide information about opioids dispensed outside of IHS, IHS providers may still lack key opioid-related information about their patients—for example, whether a patient is participating in a treatment program. Not having complete information about a patient's care could impact a provider's ability to treat patients effectively. For example, some opioid treatment services are provided by Tribes or other non-IHS entities. This could mean that IHS-employed providers can make referrals for those opioid treatment services, but they may not be able to directly monitor that treatment or learn about the outcomes of treatment. Additionally, if a patient experiences an opioid overdose and is taken to a non-IHS hospital, the IHS-employed provider might not know that an overdose occurred unless the patient discloses it. Knowing whether a patient has experienced an opioid overdose could change the provider's plan for care.

RECOMMENDATIONS

IHS has made efforts to prevent its patients from receiving dangerous amounts of opioids through IHS-run pharmacies, and overall, our results indicate that it has been successful. OIG found that less than half of one percent of patients who received opioids from IHS pharmacies received high amounts. Furthermore, IHS officials reported positive outcomes as a result of the agency's efforts, including reduced opioid purchasing and prescribing. IHS has taken several steps to ensure appropriate opioid use among its patients—for instance, it has updated its prescribing guidelines, required that IHS providers routinely check State PDMPs, and increased its monitoring of opioid use. To support IHS's efforts, OIG will provide the appropriate IHS clinical staff with information on the specific patients who received high amounts of opioids so that those staff can review and determine whether followup with any of those patients is necessary.

Although IHS monitors opioid use, some of its monitoring efforts currently involve manual processes that could be made more efficient with automated tools. These existing methods of monitoring may take more time, miss information, and introduce more opportunities for error. For instance, IHS's EHR system cannot calculate MED for an individual patient or alert providers if a patient who is receiving opioids is prescribed a benzodiazepine. Moreover, IHS staff are not able to export all EHR data to summary-level reports.

In addition, IHS officials reported challenges in using State-run PDMPs and in tracking care that patients receive from non-IHS providers. Because of these challenges, providers do not have complete information about the medical care a patient receives, which could make providing appropriate care complicated. While this review did not directly address solutions to the challenge of tracking outside care, IHS agreed in response to another OIG review to reinforce a requirement to review and document care received from non-IHS providers.²⁶ We support this effort.

We recognize that IHS has acted to address the opioid crisis, and our results indicate that it has been successful in its efforts. The following recommendations aim to enhance the efficiency of IHS's monitoring and to reduce the challenges that officials reported in using State-run PDMPs effectively.

We recommend that IHS:

Assess the costs and benefits of updating its EHR system with tools to support more automated monitoring

IHS should explore its ability to modify or update its EHR system and subsequent summary-level reports to automate monitoring that is currently done manually. Such additional automation is not possible within the current EHR system and could enhance individual patient care; add to existing summary-level reports; and decrease error and provider burden. IHS should consult with Area or local facility staff to assess specific needs and potential solutions that could be implemented across IHS. IHS could also work with the team that is overseeing the project to modernize IHS health information technology to determine whether this project will address any of the desired automation.

Request support from States and from Federal partners to address challenges with State-run PDMPs

IHS should reach out to States and to Federal partners to determine whether they can resolve or mitigate the challenges that IHS providers identified related to accessing and effectively using PDMPs. For instance, IHS could ask States to except IHS-employed providers from requirements that providers requesting access to a State's PDMP be licensed in that State. These exceptions could be included as part of each Area's negotiated memorandum of understanding (MOU) with each PDMP for the States in that Area.²⁷ IHS could also explore whether additional training or technical assistance on PDMPs could be helpful for IHS-employed providers, and the agency could request such training from States. IHS could also work with Federal partners to ensure that its health care facilities fully benefit from Federal PDMP efforts.²⁸

AGENCY COMMENTS AND OIG RESPONSE

IHS concurred with our recommendation to assess the costs and benefits of updating its EHR system with tools to support more automated monitoring. IHS summarized four actions it has taken to enhance the tools available for monitoring patient care in the EHR system, including reminders to assist prescribers in meeting policy requirements. IHS also indicated that it is working to integrate PDMPs into its EHR system by late summer 2021. We appreciate IHS's commitment to enhancing tools available for managing patient care. We encourage IHS to also work to enhance summary-level reports, and we look forward to the updates in its Final Management Decision.

IHS also concurred with our recommendation to request support from States and from Federal partners to address challenges with State-run PDMPs. IHS indicated that it has engaged in discussions with CDC, the Department of Justice's Bureau of Justice Assistance, and the PDMP Training and Technical Assistance Center to evaluate options to integrate PDMP data into its EHR system. IHS expects its internal design discussions to be completed in December 2020. We look forward to receiving IHS's Final Management Decision, including information on IHS's progress on integrating PDMP data into its EHR system.

For the full text of IHS's comments, see Appendix E.

METHODOLOGY

We based this issue brief on three key data sources: an analysis of IHS's prescription drug and patient records; a document review of IHS policies; and structured interviews with IHS officials and staff.

Scope

This issue brief includes prescriptions that patients received directly from 77 of 80 IHS-run pharmacies or that were electronically transferred by an IHS-run pharmacy.²⁹ Prescriptions may be received onsite at an IHS-run pharmacy or transferred electronically to a non-IHS pharmacy to be filled. Between May 2018 and April 2019, IHS-run pharmacies dispensed or electronically transferred a total of 8,087,054 prescriptions. Nearly all—more than 99 percent—of these were dispensed by IHS-run pharmacies; very few were electronically transferred from IHS-run pharmacies to non-IHS pharmacies.

This issue brief does not include prescriptions that were transferred by nonelectronic means or prescriptions that were received from pharmacies not run directly by IHS. It also does not include prescriptions for medication-assisted treatment of opioid use disorders, such as buprenorphine, naltrexone, and methadone.

IHS prescription drug records and patient information

We collected prescription drug and patient information directly from IHS's EHR system. IHS's prescription drug records—that is, IHS's records of prescriptions filled or electronically transferred by IHS-run pharmacies—contain information about each prescription (e.g., the National Drug Code, days supply, etc.), as well as the patient, prescriber, and pharmacy. The patient data contains demographic and characteristic information about patients such as their date of birth and sex.

Analysis of IHS opioid utilization

We identified prescriptions for opioids and prescriptions for benzodiazepines that patients received over the 12-month period of May 2018 through April 2019. We did this by matching IHS prescription drug records to CDC's MME conversion and benzodiazepine files. CDC files contain information about each drug such as the drug name, strength of the drug, its therapeutic class (e.g., opioid, benzodiazepine), and its controlled-substance schedule (e.g., Schedule II or Schedule III), as well as (for opioids) information about each drug's morphine milligram equivalent (MME).³⁰

We calculated the number of patients who received opioids and the total number of opioid prescriptions. Using all prescription and patient information, we also

determined the proportion of patients with opioid prescriptions across IHS and the proportions in each of the nine IHS Areas with IHS-run pharmacies. We then identified the most commonly prescribed opioids by calculating the total number of prescriptions for each active pharmaceutical ingredient (delineated by strength and form).

Next, we determined the amount of opioids that each patient received during our study period. To do this, we calculated each patient's average daily MED.³¹ The MED converts opioids of different ingredients, strengths, and forms into equivalent milligrams of morphine. It allows us to sum dosages of different opioids to determine a patient's daily opioid level.

To calculate each patient's average daily MED, we first calculated the MED for each prescription. To do this, we used the following equation:

$$\text{MED} = \frac{(\text{strength per unit}) \times (\text{quantity dispensed}) \times (\text{MME conversion factor})}{(\text{days supply})}$$

Next, we summed each patient's MED for each day of the year based on the dates of service and days supply on each prescription record. We refer to this analysis as the daily MED.

Next, we calculated each patient's average daily MED over each 90-day period during our study period. We excluded from this analysis patients who had a diagnosis of cancer or had a hospice stay at any point during our study period.³²

Next, we determined the extent to which patients received high amounts of opioids. We analyzed the MED data using the same criteria as previous OIG work.³³ We considered a patient to have received high amounts of opioids if the patient exceeded an average daily MED of 120 mg for any 90-day period *and* had received opioids for 90 or more days in our 12-month study period (not necessarily 90 consecutive days). The MED of 120 mg exceeds the 90-mg MED level that the *IHM* recommends avoiding for patients with chronic pain.³⁴ This recommendation reflects the *IHM's* adoption of the CDC prescribing guideline.

We then determined the extent to which patients received extreme amounts of opioids. We calculated each patient's average daily MED over the entire 12-month study period. We considered a patient who exceeded an average daily MED of 240 mg for the entire study period *and* had received opioids for 360 days or more to have received an extreme amount of opioids. Fewer than 10 patients received extreme amounts of opioids. Therefore, we did not present the results in this issue brief.

Patient characteristics

We calculated frequencies for select patient characteristics and information including age; sex; location; the number of pharmacies and prescribers the patient visited; and the most common opioids prescribed.

For the patients who received high amounts of opioids, we calculated additional measures. For these patients, we identified the most common diagnoses overall.³⁵ We also determined whether they received care suggested by IHS policies, such as receiving naloxone prescriptions and undergoing urine drug testing, and whether there was overlapping benzodiazepine use.

Naloxone. We determined the number of patients who received high amounts of opioids who did not receive a naloxone prescription from May 2018 through April 2019. We based this analysis on the prescription drug records provided by IHS.

Urine Drug Testing. We determined the number of patients who received high amounts of opioids who also had a urine drug test from May 2018 through April 2019. We based this analysis on the patient medical record provided by IHS.

Benzodiazepines. We determined the number of patients who received high amounts of opioids who also received an overlapping benzodiazepine prescription from May 2018 through April 2019. We included all drugs in the CDC file in the class of benzodiazepines. We based this analysis on the prescription drug records provided by IHS.

Document review

We reviewed IHS documents about IHS's policies for prescribing and dispensing opioids and steps that IHS has taken in response to the opioid crisis. We analyzed the documents to identify IHS's requirements for providers who prescribe and dispense opioids, as well as its efforts to monitor patient opioid use.

Interviews with IHS officials and staff

We conducted 12 interviews with officials and staff from IHS headquarters and Area offices to understand how IHS monitors opioid use and opioid-related activities; limitations that IHS faces in preventing and detecting opioid misuse; and the results of IHS's efforts. These interviews included officials and staff who were responsible for developing and implementing policies; providing technical assistance and guidance; and monitoring opioid use. We employed semistructured interview protocols that allowed us to follow up on additional issues as we learned new information. We conducted the interviews between June and August 2019. We conducted a qualitative analysis of interview data to identify common themes across interviews.

Limitations

Our analysis of opioid utilization is based on an analysis of prescription and patient data from IHS-run pharmacies; it is not based on a review of medical records.

Our analysis may therefore underestimate patients' opioid use. IHS patients in this analysis may have received additional drugs from pharmacies outside of IHS, such as

Tribally operated pharmacies or private pharmacies. IHS prescription drug records would not capture these outside drugs.

Conversely, our analysis may slightly overestimate opioid use for a subset of patients. A small fraction of prescriptions in our data—0.24 percent—were electronically transferred to non-IHS pharmacies to be filled, which means that we did not have dispensing information in our data. We assumed that patients filled and received these prescriptions, but we did not verify this. If patients did not in fact fill or receive prescriptions transferred to non-IHS pharmacies, then our analysis overstates the number of prescriptions they received.

Our analysis of steps that IHS has taken to combat the opioid epidemic, the outcomes from opioid-related initiatives, and IHS's limitations relied on interviews and IHS documents. We did not independently verify information reported in interviews.

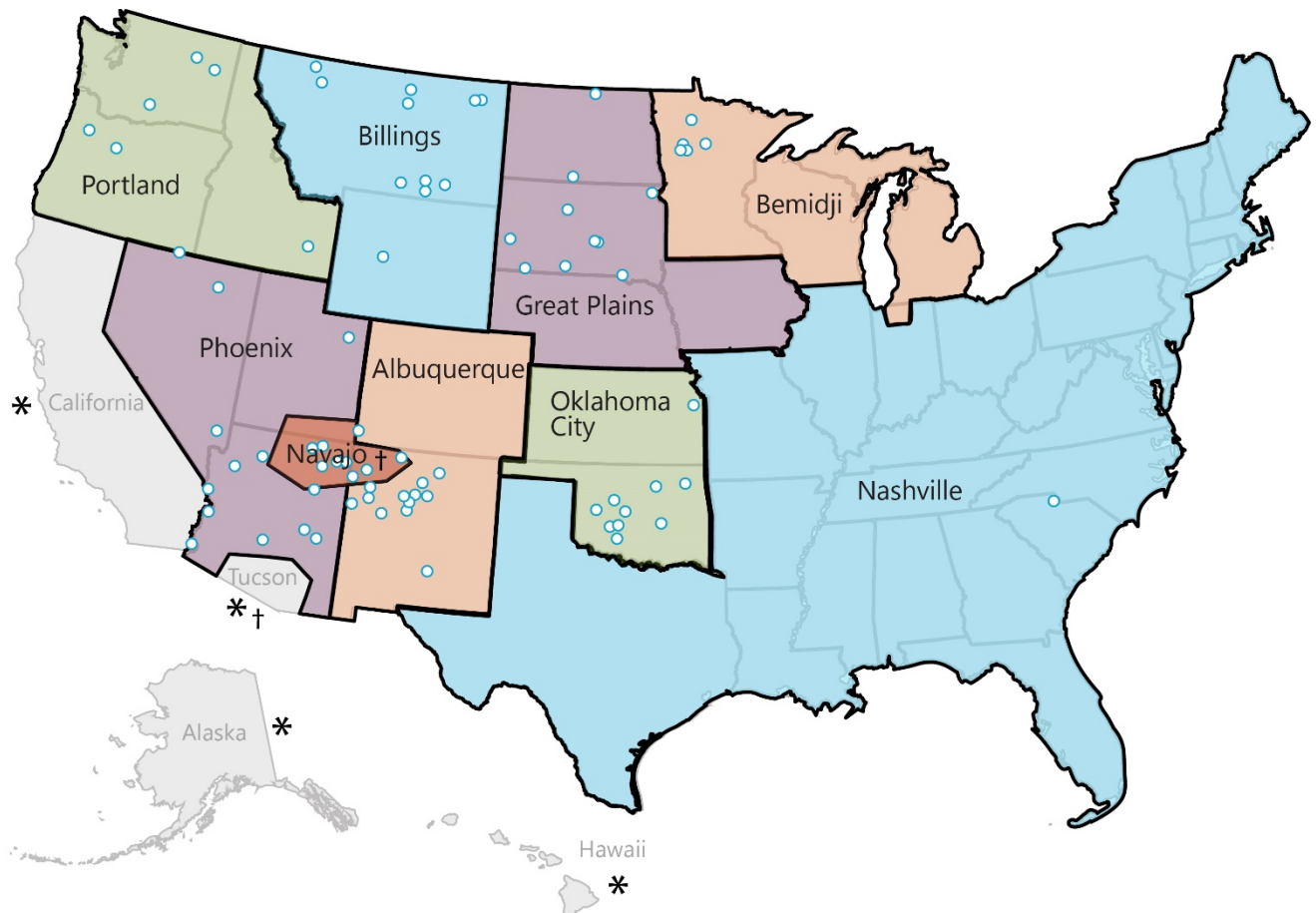
Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

APPENDIX A

Overview of IHS Areas and Pharmacies

Exhibit A-1: This analysis covers 9 IHS Areas with 77 pharmacies.












Note: (1) There are 80 IHS-run pharmacies. Three IHS-run pharmacies responded to our data request; however, because of a transmission error, the data files were not usable for our analysis and those three pharmacies are therefore not represented on this map.

*Three IHS Areas—the Alaska Area, the California Area (which includes Hawaii), and the Tucson Area—do not have any IHS-run pharmacies.

†Because of software limitations, the Navajo and Tucson Areas are not perfectly depicted.

Source: OIG analysis of IHS prescription data, 2020.

Exhibit A-2: The Phoenix Area had the most patients with prescriptions.









Area	Patients Who Received Any Prescription (out of 372,676)	
Phoenix	19.8%	
Navajo	17.5%	
Great Plains	16.7%	
Oklahoma City	16.0%	
Albuquerque	10.3%	
Billings	8.6%	
Portland	6.0%	
Bemidji	4.8%	
Nashville	0.3%	
Total	100%	

Note: Patients may receive prescriptions from multiple IHS Areas.
Source: OIG analysis of IHS prescription data, 2020.

APPENDIX B





Characteristics of patients who received any opioid and who received high amounts of opioids

Exhibit B-1: Most patients who received opioids were adults.

Age	Percentage of Patients Who Received Any Opioid (out of 57,134)	Percentage of Patients Who Received High Amounts of Opioids (out of 159)
0–18	3.6% 	0% 
19–44	45.5% 	15.1% 
45–64	35.6% 	61.6% 
65+	15.2% 	23.3% 
Total	100%	100%

Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-2: Most patients who received opioids were female.

Sex	Percentage of Patients Who Received Any Opioid (out of 57,134)	Percentage of Patients Who Received High Amounts of Opioids (out of 159)
Female	58.1% 	54.7% 
Male	41.9% 	45.3% 
Total	100%	100%

Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-3: The Great Plains Area had the highest percentage of patients who received any opioid, while the Phoenix Area had the most patients who received high amounts of opioids.

Percentage of Patients Who Received Any Opioid (out of 57,343)		Percentage of Patients Who Received High Amounts of Opioids (out of 161)	
Area		Area	
Great Plains	19.9% <div></div>	Phoenix	31.1% <div></div>
Phoenix	18.8% <div></div>	Great Plains	14.9% <div></div>
Oklahoma City	16.4% <div></div>	Navajo	13.7% <div></div>
Navajo	15.2% <div></div>	Billings	10.6% <div></div>
Billings	10.9% <div></div>	Albuquerque	10.6% <div></div>
Portland	7.7% <div></div>	Oklahoma City	8.1% <div></div>
Albuquerque	6.9% <div></div>	Portland	6.2% <div></div>
Bemidji	3.8% <div></div>	Bemidji	5.0% <div></div>
Nashville	0.3% <div></div>	Nashville	0.0%
Total	100%	Total	100%

Note: Patients may receive prescriptions from multiple areas.
Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-4: Patients who received opioids most commonly received acetaminophen/hydrocodone.

Opioid Prescriptions for Patients Who Received Any Opioid (out of 170,960)	
Acetaminophen/Hydrocodone	33.5% <div></div>
Tramadol	25.6% <div></div>
Acetaminophen/Codeine	15.9% <div></div>

Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-5: Patients who received high amounts of opioids most commonly received morphine.

Opioid Prescriptions for Patients Who Received High Amounts of Opioids (out of 4,474)		
Morphine	40.3%	<div><div></div></div>
Oxycodone	17.0%	<div><div></div></div>
Fentanyl	9.8%	<div><div></div></div>









Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-6: Most patients who received opioids visited three or fewer prescribers.

Prescriber Count	Percentage of Patients Who Received Any Opioid (out of 57,134)	Percentage of Patients Who Received High Amounts of Opioids (out of 159)
1	72.6% <div><div></div></div>	29.6% <div><div></div></div>
2	17.3% <div><div></div></div>	35.2% <div><div></div></div>
3	5.7% <div><div></div></div>	20.1% <div><div></div></div>
4	2.1% <div><div></div></div>	6.9% <div><div></div></div>
5	1.0% <div><div></div></div>	4.4% <div><div></div></div>
6	0.4% <div><div></div></div>	1.3% <div><div></div></div>
7	0.2% <div><div></div></div>	0.6% <div><div></div></div>
8	0.1% <div><div></div></div>	1.3% <div><div></div></div>
9	0.0% <div><div></div></div>	0.6% <div><div></div></div>
10+	0.1% <div><div></div></div>	0.0% <div><div></div></div>
Missing	0.5% <div><div></div></div>	0.0% <div><div></div></div>
Total	100% <div><div></div></div>	100% <div><div></div></div>

Note: Missing means that no prescriber National Provider Identifiers were identified for the patient.
Source: OIG analysis of IHS prescription data, 2020.

Exhibit B-7: Most patients who received opioids visited one IHS-run pharmacy.

Pharmacy Count	Percentage of Patients Who Received Any Opioid (out of 57,134)	Percentage of Patients Who Received High Amounts of Opioids (out of 159)
1	93.6% 	78.6% 
2	5.2% 	17.6% 
3	0.2% 	0.6% 
4+	0.0%	0.0%
Missing	0.9% 	3.1% 
Total	100%	100%

Note: Prescriptions that were electronically transferred outside of IHS are not included in this analysis, because we do not have data on when or where they were filled. The data in this exhibit reflect only prescriptions filled at an IHS-run pharmacy. "Missing" means that all prescriptions for a given patient were not filled by an IHS-run pharmacy—the patient had only prescriptions that were transferred electronically to a non-IHS pharmacy. Because of rounding, row totals do not sum to 100 percent.

Source: OIG analysis of IHS prescription data, 2020.

APPENDIX C

Common Diagnoses for Patients Who Received High Amounts of Opioids

Exhibit C-1: Most patients who received high amounts of opioids had chronic pain; many also had one or more common chronic diseases or conditions.

ICD-10-CM		Percentage of Patients Who Received High Amounts of Opioids (out of 158)	
Code	Description		
G89.29	Other chronic pain	77.2%	<div></div>
I10	Essential (primary) hypertension	61.4%	<div></div>
M54.5	Low back pain	49.4%	<div></div>
E11.9	Type 2 diabetes mellitus without complications	46.8%	<div></div>
M54.9	Dorsalgia, unspecified (back pain)	28.5%	<div></div>
F32.9	Major depressive disorder, single episode, unspecified	27.2%	<div></div>
E78.5	Hyperlipidemia, unspecified (high cholesterol)	24.7%	<div></div>
K21.9	Gastro-esophageal reflux disease without esophagitis (GERD)	24.1%	<div></div>
H52.4	Presbyopia (age-related farsightedness)	21.5%	<div></div>
E55.9	Vitamin D deficiency, unspecified	20.3%	<div></div>

Note: These diagnoses do not necessarily represent the reason for which patients received opioids. Instead, this table represents the most common diagnoses found among patients who received high amounts of opioids. This table does not include administrative (Z) codes. The patient record for one patient who received high amounts of opioids had only these administrative Z-codes. A given patient may have more than one diagnosis code.

Source: OIG analysis of IHS prescription data, 2020.

APPENDIX D

Overview of IHS's Opioid Initiatives

IHS has taken a number of steps to address its opioid crisis. In this appendix, we provide specific information about IHS's requirements for training and when providers are required to check State PDMPs, as well as IHS's prescribing guidelines. We also summarize many of IHS's other initiatives and provide links to IHS resources for more detail.

Provider requirements

Assuring Appropriate Documentation of Prescriptions (effective August 2020)³⁶

Ensures appropriate documentation of all prescriptions written by IHS prescribers, whether a prescription will be filled by an IHS pharmacy or a non-IHS pharmacy. Reiterates proper documentation to prescribers and describes how to enter prescriptions into the EHR system.

Essential Training on Pain and Addiction (effective July 2016)³⁷

- Required for all IHS Federal prescribers, contractors (who spend 50 percent or more of their clinical time under contract with the Federal government), clinical residents, and trainees within the first 6 months of employment
- Required refresher training every 3 years

PDMP Requirements (effective July 2016)³⁸

IHS was one of the first Federal agencies to require providers to check State PDMPs.

Prescribers must check State PDMPs when doing any of the following: accepting a new patient, prescribing opioids exceeding 7 days for acute pain, and progressing a patient from acute to chronic opioid pain therapy. Prescribers must also check State PDMPs periodically during opioid therapy for chronic pain.

Pharmacists must check State PDMPs at the following points: prior to processing an outside (i.e., non-IHS) prescription for a controlled substance; and every 3 months, prior to reissuing or refilling for a chronic controlled-substance prescription.

Prescribing policy and recommendations

Chronic non-cancer pain management policy (effective February 2018)³⁹

Prescribers should:

- use caution when increasing dosage to 50 MED or more per day;

- avoid increasing dosage to 90 MED or more per day, or carefully justify that decision;
- perform urine drug screening prior to initiating chronic opioid treatment and periodically (every 6–12 months) during treatment;
- consider prescribing naloxone with all patients on chronic opioids; highly recommended for patients who exceed 50 MED per day; and
- avoid coprescribing benzodiazepines.

IHS also outlined a number of policies and procedures including informed consent; use of treatment agreements; acute pain; initial assessment; initiating chronic opioid treatment; ongoing monitoring and management; and use of a pain management team.

Clinical recommendations on AI/AN pregnant women and women of childbearing age with opioid use disorder (released March 2019)⁴⁰

- Recommendations are tailored for AI/AN women and use national standards of care for establishing treatment for opioid use disorder in pregnant and reproductive-age women, as well as treatment for those who are at risk for developing an opioid use disorder
- Collaborated with the American College of Obstetricians and Gynecologists Committee on American Indian and Alaska Native Women's Health

Management of acute dental pain (released August 2018)⁴¹

Provides evidence-based guidance for general dentists on prescribing for acute dental pain

Clinical recommendations on neonatal opioid withdrawal syndrome (released December 2019)⁴²

- Recommendations provide standards of care surrounding screening, diagnosing, and treatment of pregnant mothers and infants affected by prenatal opioid exposure
- Collaborated with the American Academy of Pediatrics Committee on Native American Child Health

IHS's efforts geared toward prevention

Training

- Essential training on pain and addiction (as described above)
- Weekly TeleECHO clinics on chronic pain and opioid management, through a partnership with the University of New Mexico. The clinics connect providers to experts on the topic and include brief lectures or hands-on demonstrations. Community clinicians also present clinical cases for feedback and recommendations.

HOPE Committee (Indian Health Service National Committee on Heroin, Opioids, and Pain Efforts)

- Established March 2017; evolved out of Prescription Drug Abuse Workgroup
- Purpose: To promote appropriate and effective pain management; reduce overdose deaths from heroin and prescription opioid misuse; and improve access to culturally appropriate treatment.

Other prevention initiatives

- Published the prescribing policy and guidelines described above
- Culturally appropriate patient education
- Programs for drug takeback and disposal
- Home lockboxes for controlled substances

IHS's efforts geared toward detection

IHM outlines responsibilities related to opioid monitoring for multiple staffing levels within IHS (i.e., Chief Medical Officer, Area Chief Medical Officer, facility Chief Executive Officer, facility Medical/Clinical Director, and Pharmacy Director). The *IHM* also outlines the role of a pain management team, which most Area staff reported using for review of pain management treatment plans.

IHS Safe Opioid Monitoring Tool (ISOM) (effective January 2019)

- All facilities are required to report the ISOM to Area Pharmacy Consultants every month. It is also submitted to facility and Area leadership, as well as the Principal Pharmacy Consultant in IHS.
- Measures include the number of opioid prescriptions, the number of patients over 90 MME, the number of patients between 50 and 90 MME, the number of naloxone prescriptions, and the average MME per facility.

RPMS Report and Information Processor

Allows staff to export data from IHS's EHR system to a more user-friendly format. There is a tool for controlled substances that generates opioid-related measures for individual service units.⁴³ RPMS is IHS's information system that contains many software applications, including the EHR system.

Area monitoring initiatives

Some Areas reported creating a scorecard tool or quality management plan for local monitoring efforts. These tools are generally used for reporting to the local governing body.⁴⁴ They generally include elements from the ISOM, but they may include more, as they are designed to address local concerns. In March 2020, the Billings Area Opioid Stewardship

Dashboard Team won an award from HHS for its use of innovative technology to create a dashboard that enhances the use of data, accountability, and transparency to help address the national opioid crisis.

IHS's efforts geared toward treatment

- In September 2018, IHS released a new policy on designating providers eligible to prescribe controlled substances via the Internet.⁴⁵ The policy is designed to increase access to treatment of opioid use disorder for AI/ANs living in rural or remote areas.
- In June 2019, IHS instructed all IHS-run facilities to identify resources in their local areas for treatment of opioid use disorder and to create an action plan, no later than December 11, 2019, to provide or coordinate patient access to medication-assisted treatment, increasing access to culturally appropriate treatment and recovery support services.⁴⁶
- IHS has worked to make naloxone available and accessible.
 - In December 2015, IHS signed an MOU with the Department of Interior's Bureau of Indian Affairs (BIA) that allows IHS providers to provide BIA law enforcement officers with training and naloxone kits. BIA is the agency with law enforcement responsibility for AI/AN lands. IHS's Area Offices may also enter into MOUs with Tribes to allow transfer of naloxone kits from an IHS facility to Tribal first responders. *IHM* outlines requirements for providing naloxone to law enforcement agencies and first responders.⁴⁷
 - Published the prescribing guidelines described above that prescribers should consider coprescribing naloxone

Additional resources

- IHS infographic—"How IHS is Supporting HOPE for Patients Affected by Heroin, Opioids, and Chronic Pain":
https://www.ihs.gov/sites/opioids/themes/responsive2017/display_objects/documents/supportinghopeinfograph.pdf
- IHS's website on opioid use disorder and pain: <https://www.ihs.gov/opioids/>
- IHS *IHM*, Part 3 (see chapters 7, 30, 32, 35, and 38): <https://www.ihs.gov/ihm/pc/part-3/>
- IHS HOPE Committee newsletters: <https://www.ihs.gov/opioids/hope/newsletters/>
- IHS training opportunities related to opioids:
<https://www.ihs.gov/opioids/trainingopportunities/>

APPENDIX E

Agency Comments



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

NOV 16 2020

Indian Health Service
Rockville, MD 20857

TO: Inspector General

FROM: Director

SUBJECT: IHS Response to Draft OIG Report *OEI-05-18-00470*, "*Few Patients Received High Amounts of Opioids from IHS-run Pharmacies*," dated October 2020

We appreciate the opportunity to provide our official comments on the Draft OIG Report, OEI-05-18-00470, entitled, "*Few Patients Received High Amounts of Opioids from IHS-run Pharmacies*," dated October 2020. The OIG made two recommendations and the Indian Health Service (IHS) concurs with the recommendations. We have outlined below the actions taken and planned to fully implement the recommendations.

Recommendation Number 1: The IHS concurs with the recommendation.

Assess the costs and benefits of updating its Electronic Health Records (EHR) with tools to support more automated monitoring.

Planned and completed actions:

The IHS continues to evaluate opportunities to enhance clinical decision support at the point of care within the existing Resource and Patient Management System (RPMS) EHR. Below are several recently completed actions.

- In May 2019, the IHS released updated software programming to automate near real-time controlled substance dispensing reporting to state-based Prescription Drug Monitoring Program (PDMPs) for sites using the RPMS.
- In August 2019, the IHS developed and released the "E-prescribing Controlled Substance Prescriptions" (EPCS) RPMS software platform to improve patient safety and reduce potential for diversion or misuse of controlled substances. The EPCS ensures the integrity and authenticity of controlled substance prescription transmission both internally and externally.
- In August 2019, the IHS enhanced local opioid stewardship activities and created a sample workbook to guide sites to use data to evaluate population outcomes, target opioid interventions, enhance clinical decision support, and create professional practice evaluation strategies for improved patient management outcomes.
- In August 2020, the IHS developed and deployed enhanced EHR Reminders and dialog note templates to assist prescribers with creating comprehensive patient care plans and meeting policy requirements. The HOPE Committee supports a technical assistance Web page and office hours to assist sites with use of these tools.

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Local facility and Area customization and development work in EHR is discouraged due to centralized standardization of programming changes and the potential risk to EHR certification, but the IHS does maintain a process that allows users to submit recommendations for modifications to the system. The IHS will continue to review and prioritize user-level enhancement requests that could be integrated at an enterprise Agency level. In current planning phase, the IHS is in development to accommodate PDMP integration and monitoring with state and federal partners within the legacy RPMS EHR system. A release is scheduled for late summer 2021. PDMP integration capabilities are an expected functionality requirement for the software that will replace the RPMS legacy EHR as part of the IHS Health IT Modernization project.

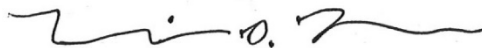
Recommendation Number 2: The IHS concurs with the recommendation.

Request support from States and Federal partners to address challenges with State-run PDMPs.

Planned and completed actions:

The IHS has engaged in discussions with the Centers for Disease Control and Prevention (CDC), Bureau of Justice Assistance, and PDMP Training and Technical Assistance Center (TTAC) to evaluate sustainable and scalable options to integrate PDMP data into the EHR. These discussions have informed the approved *PDMP Interoperability Business Needs Statement* and level of effort. Fiscal Year 2019 PDMP funding has been transferred and internal design discussions are anticipated to be completed in December 2020.

Thank you for the opportunity to review and comment on this draft report. Please refer any follow-up questions you have regarding our comments to Ms. Athena Elliott, Chief Compliance Officer, IHS. She can be reached by e-mail at athena.elliott@ihs.gov.



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ACKNOWLEDGMENTS AND CONTACT

Acknowledgments

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ENDNOTES

¹ Alex M. Azar II, Secretary of Health and Human Services, "Renewal of Determination that a Public Health Emergency Exists," January 24, 2020. Accessed at <https://www.phe.gov/emergency/news/healthactions/phe/Pages/opioid-24jan2020.aspx> on April 29, 2020.

² Centers for Disease Control and Prevention (CDC), "Drug and Opioid-Involved Overdose Deaths—United States, 2017-2018," *MMWR* 69, no. 11, March 20, 2020, p. 1. Accessed at <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6911a4-H.pdf> on April 13, 2020.

³ OIG, *Opioids in Medicaid: Review of Extreme Use and Overprescribing in the Appalachian Region* (OEI-05-19-00410), forthcoming (see OIG Work Plan at <https://oig.hhs.gov/reports-and-publications/workplan/summary/wp-summary-0000392.asp>); OIG, *Opioid Use in Medicare Part D Continued To Decline in 2019, but Vigilance Is Needed as COVID-19 Raises New Concerns* (OEI-02-20-00320), August 2020; OIG, *Medicare Part D Beneficiaries at Serious Risk of Opioid Misuse or Overdose: A Closer Look* (OEI-02-19-00130), May 2020; OIG, *Opioid Use in Medicare Part D in Missouri* (OEI-02-19-00391), September 2019; OIG, *Opioid Use Decreased in Medicare Part D, While Medication-Assisted Treatment Increased* (OEI-02-19-00390), July 2019; OIG, *Opioids in Ohio Medicaid: Review of Extreme Use and Prescribing* (OEI-05-18-00010), July 2018; OIG, *Opioid Use in Medicare Part D Remains Concerning*, OEI-02-18-00220, June 2018; OIG, *Opioids in Medicare Part D: Concerns about Extreme Use and Questionable Prescribing*, OEI-02-17-00250, July 2017; OIG, *High Part D Spending on Opioids and Substantial Growth in Compounded Drugs Raise Concerns*, OEI-02-16-00290, June 2016.

⁴ In 2019, OIG found that about 1 in 4 Medicare Part D beneficiaries received opioids, with nearly 267,000 of them receiving high amounts of opioids. Because a national review of opioid prescribing in Medicaid is not yet possible, OIG has not conducted such analysis for Medicaid beneficiaries. See OIG, *Opioid Use in Medicare Part D Continued To Decline in 2019, but Vigilance Is Needed as COVID-19 Raises New Concerns*, (OEI-02-20-00320), August 2020; and OIG, *National Review of Opioid Prescribing in Medicaid is Not Yet Possible* (OEI-05-18-00480), August 2019.

⁵ CDC, "Drug and opioid-involved overdose deaths—United States, 2013-2017," *MMWR* 67, nos. 51 & 52, January 4, 2019, p. 1420. Accessed at <https://www.cdc.gov/mmwr/volumes/67/wr/pdfs/mm675152e1-H.pdf> on April 13, 2020. Note: Cited document notes that potential race misclassification might lead to underestimates for certain categories, primarily AI/ANs, see p. 1421.

⁶ OIG, *IHS Needs To Improve Oversight of Its Hospitals' Opioid Prescribing and Dispensing Practices and Consider Centralizing Its Information Technology Functions* (A-18-17-11400), July 2019.

⁷ IHS, *IHS Profile*, April 2020. Accessed at https://www.ihs.gov/sites/newsroom/themes/responsive2017/display_objects/documents/factsheets/IHSProfile.pdf on June 23, 2020.

⁸ IHS, *Strategic Plan FY 2019-2023*, p. 1. Accessed at https://www.ihs.gov/sites/strategicplan/themes/responsive2017/display_objects/documents/IHS_Strategic_Plan_FY%202019-2023.pdf on April 9, 2020.

⁹ Because of the lack of information available on opioid prescriptions written at or dispensed by facilities not directly operated by IHS, this report is focused only on those prescriptions written at or dispensed by facilities directly operated by IHS.

¹⁰ A daily MED of 120 mg is equivalent to taking 12 tablets a day of Vicodin 10 mg or 16 tablets a day of Percocet 5 mg.

¹¹ IHS, *IHM*, 3-30. 13(F). Accessed at <https://www.ihs.gov/ihtm/pc/part-3/p3c30/> on March 11, 2020.

¹² CDC, "CDC Guideline for Prescribing Opioids for Chronic Pain—United States, March 18, 2016," *MMWR* 65, no. 1, March 18, 2016, pp. 13, 44. Accessed at <https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6501e1.pdf> on March 8, 2020.

¹³ Ibid., p. 10.

¹⁴ IHS, *IHM*, 3-30.17 and 3-30.18. Accessed at <https://www.ihs.gov/ihm/pc/part-3/p3c30/> on March 11, 2020.

¹⁵ Ibid., 3-30.10(J).

¹⁶ Ibid., 3-30. 29(A).

¹⁷ PDMPs should have information about all opioids that a patient received, regardless of the source.

¹⁸ RADM Michael E. Toedt, M.D., FAAFP, “Opioids in Indian Country: Beyond the Crisis to Healing the Community,” testimony before the United States Senate Committee on Indian Affairs, March 14, 2018. Results noted in testimony come from “available IHS data,” taken from IHS’s National Data Warehouse. The data warehouse includes some data from Tribes or Urban Indian Organizations.

¹⁹ In this context, methadone prescriptions are for pain management purposes, not treatment. At the time of our review, IHS did not operate Opioid Treatment Programs that administered methadone.

²⁰ OIG has a related recommendation for IHS to work with hospitals to analyze opioid data to make decisions and oversee providers to minimize prescribing practices that do the following: exceed daily MME guidelines established by IHS; coprescribe opioids and benzodiazepines; and use opioids for acute pain. See OIG, *IHS Needs To Improve Oversight of Its Hospitals’ Opioid Prescribing and Dispensing Practices and Consider Centralizing Its Information Technology Functions*, July 2019, A-18-17-11400.

²¹ IHS’s EHR system is part of the Resource and Patient Management System (RPMS)—the system that IHS uses to manage both clinical and administrative information in its health care facilities.

²² IHS launched an effort to modernize RPMS, including the EHR system, in October 2018. The effort is intended to identify a modern system that will address clinical, process, and technical gaps for improving health care outcomes within the Indian health system (i.e., IHS and the Tribes and Urban Indian Organizations that use IHS’s EHR system). For more details, see <https://www.ihs.gov/newsroom/ihs-blog/october2018/ihs-and-hhs-launch-a-health-information-technology-modernization-research-project/>. Accessed on April 15, 2020.

²³ IHS staff also use data in the EHR system to conduct system-level analysis. They export data from the EHR system into analytics programs to create summary-level reports of opioid use and opioid-related activities across IHS facilities. See Appendix D, “IHS’s efforts geared toward detection,” for details about how IHS currently monitors opioid use and opioid-related activities.

²⁴ IHS requires each Area to create a Memorandum of Understanding (MOU) with State PDMPs that establishes the requirements for data disclosure to the State PDMP. See IHS, *Indian Health Manual*, 3-32.1(C)(5), 3-32.2(A). Accessed at <https://www.ihs.gov/ihm/pc/part-3/p3c32/> on October 8, 2020.

²⁵ IHS, *IHM*, 3-32.2. Accessed at <https://www.ihs.gov/ihm/pc/part-3/p3c32/> on June 23, 2020.

²⁶ OIG, *IHS Needs To Improve Oversight of Its Hospitals’ Opioid Prescribing and Dispensing Practices and Consider Centralizing Its Information Technology Functions*, July 2019, A-18-17-11400.

²⁷ The MOUs that each Area negotiates with State-run PDMPs are not required to include information about how IHS providers access the PDMP, but they can include those details, if the State and Area agree to include them.

²⁸ H. Comm. On Appropriations, 116th Con., *Further Consolidated Appropriations Act, 2020*, p. 110 (Comm. Print 2020).

²⁹ The remaining three IHS-run pharmacies responded to our data request; however, due to a data transmission error, the data files were not usable for our analysis.

³⁰ These files contain MME conversion factors for each National Drug Code. MED and MME are interchangeable terms. Buprenorphine products do not have an MME conversion factor because they are partial opioid agonists prescribed for pain

and as part of medication assisted treatment for opioid use disorder. Accessed at <https://www.cdc.gov/drugoverdose/resources/data.html> on March 26, 2020.

³¹ For more information on calculating opioid dosage, see CDC, *Calculating Total Daily Dose of Opioids for Safer Dosage*. Accessed at https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf on April 6, 2020.

³² We identified patients who had a cancer diagnosis or hospice stay by using each patient's medical record. In total, we identified 2,106 patients with cancer or a hospice stay who received at least 1 opioid.

³³ OIG, *Opioid Use in Medicare Part D in Missouri* (OEI-02-19-00391), September 2019; OIG, *Opioid Use Decreased in Medicare Part D, While Medication-Assisted Treatment Increased* (OEI-02-19-00390), July 2019; OIG, *Opioids in Ohio Medicaid: Review of Extreme Use and Prescribing* (OEI-05-18-00010), July 2018; OIG, *Opioids Use in Medicare Part D Remains Concerning* (OEI-02-18-00220), June 2018; OIG, *Opioids in Medicare Part D: Concerns about Extreme Use and Questionable Prescribing* (OEI-02-17-00250), July 2017.

³⁴ IHS, *IHM*, 3-30.13(F). Accessed at <https://www.ihs.gov/ihm/pc/part-3/p3c30/> on March 31, 2020.

³⁵ When identifying the most common diagnoses, we did not include diagnoses of ICD-10 Z codes because they indicate factors that influence a patient's health status—such as long-term use of the medication—or indicate that a patient received a health service, such as an immunization. In addition, we did not determine whether these diagnosis codes were related to a patient's opioid prescription(s).

³⁶ IHS, Special General Memorandum No. 20-02 "Assuring Appropriate Documentation of Prescriptions," August 19, 2020. Accessed at <https://www.ihs.gov/ihm/sgm/2020/assuring-appropriate-documentation-of-prescriptions/> on October 8, 2020.

³⁷ IHS, *IHM*, 3-30.29(B). Accessed at <https://www.ihs.gov/ihm/pc/part-3/p3c30/> on March 11, 2020.

³⁸ *Ibid.*, 3-32.

³⁹ *Ibid.*, 3-30.

⁴⁰ The American College of Obstetricians and Gynecologists, "Recommendations to the Indian Health Service on American Indian/Alaska Native Pregnant Women and Women of Childbearing Age with Opioid Use Disorder," March 2019. Accessed at https://www.ihs.gov/sites/opioids/themes/responsive2017/display_objects/documents/acogguidelines2018.pdf on May 20, 2020. See also IHS, "IHS and ACOG release clinical recommendations to improve care of American Indian, Alaska Native women with opioid use disorder," March 28, 2019. Accessed at <https://www.ihs.gov/newsroom/pressreleases/2019pressreleases/ihs-and-acog-release-clinical-recommendations-to-improve-care-of-american-indian-alaska-native-women-with-opioid-use-disorder/> on May 20, 2020.

⁴¹ IHS, "Recommendations for Management of Acute Dental Pain." Accessed at <https://www.ihs.gov/doh/documents/Recommendations%20for%20Acute%20Dental%20Pain%20Management.pdf> on April 20, 2020.

⁴² American Academy of Pediatrics, "Recommendations to the Indian Health Service on Neonatal Opioid Withdrawal Syndrome," December 2019. Accessed at https://www.ihs.gov/sites/opioids/themes/responsive2017/display_objects/documents/aapnewsrecommendationstoihs.pdf on May 20, 2020. See also, IHS, "IHS and AAP release clinical recommendations to improve care of American Indian, Alaska Native women and infants impacted by prenatal opioid exposure," December 5, 2019. Accessed at <https://www.ihs.gov/newsroom/pressreleases/2019pressreleases/ihs-and-aap-release-clinical-recommendations-to-improve-care-of-american-indian-alaska-native-women-and-infants-impacted-by-prenatal-opioid-exposure/> on May 20, 2020.

⁴³ Service units are administrative entities that serve a geographic area within an IHS Area. See IHS, Circular No. 88-02, "Service Unit Boundaries," March 25, 1988. Accessed at <https://www.ihs.gov/ihm/circulars/1988/service-unit-boundaries/> on November 12, 2020.

⁴⁴ Local governing bodies, or Boards, are the primary parties responsible for a hospital's performance. See 42 CFR § 482.12.

⁴⁵ IHS, "IHS Announces a New Policy to Expand Access to Medication Assisted Treatment in Remote Locations," November 1, 2018. Accessed at <https://www.ihs.gov/newsroom/ihs-blog/november2018/ihs-announces-a-new-policy-to-expand-access-to-medication-assisted-treatment-in-remote-locations/> on May 22, 2020.

⁴⁶ IHS, Special General Memorandum No. 19-01 "Assuring Access to Medication Assisted Treatment for Opioid Use Disorder," June 22, 2019. Accessed at <https://www.ihs.gov/ihs/sgm/2019/assuring-access-to-medication-assisted-treatment-for-opioid-use-disorder/> on April 13, 2020.

⁴⁷ IHS, *IHM*, 3-35. Accessed at <https://www.ihs.gov/ihs/pc/part-3/chapter-35-dispensing-of-naloxone-to-first-responders/> on April 15, 2020.