U.S. Department of Health and Human Services
Office of Inspector General
Data Brief
September 2022, OEI-02-22-00390

Opioid Overdoses and the Limited Treatment of Opioid Use Disorder Continue To Be Concerns for Medicare Beneficiaries

Key Results

About 50,400 Medicare Part D beneficiaries experienced an opioid overdose in 2021.

Almost a quarter of Part D beneficiaries received opioids during the year.

More than 1 million Medicare beneficiaries had a diagnosis of opioid use disorder in 2021, yet fewer than 1 in 5 received medication to treat their opioid use disorder.

The number of Part D beneficiaries receiving prescriptions for the opioid overdose-reversal drug naloxone through Part D grew.

Why OIG Did This Review

As the nation continues to grapple with the effects of the COVID-19 pandemic, the opioid epidemic continues to surge. In 2021, there were an estimated 81,502 opioid-related overdose deaths in the United States—an all-time high.[1] Accordingly, it is critical to monitor opioid use and access to treatment for beneficiaries with opioid use disorder as well as access to the opioid overdose-reversal drug naloxone.

This data brief provides important information on these topics for beneficiaries in Medicare Part D in 2021. It builds on a series of data briefs released by the Office of Inspector General (OIG).[2]

What OIG Found

About 50,400 Part D beneficiaries experienced an opioid overdose—from prescription opioids, illicit opioids, or both—during 2021. This number is likely higher in that additional beneficiaries could have overdosed but not received medical care that was billed to Medicare, or their claims might have not yet been submitted to Medicare. At the same time, the number of Medicare Part D beneficiaries who received opioids in 2021 decreased to almost a quarter of beneficiaries, extending a downward trend from prior years. Further, fewer Part D beneficiaries were identified as receiving high amounts of opioids or at serious risk. The number of prescribers ordering opioids for large numbers of beneficiaries at serious risk was steady. Still, over 1 million Medicare beneficiaries had a diagnosis of opioid use disorder in 2021, and fewer than 1 in 5 of them received medication to treat their disorder.[3] At the same time, the number of Part D beneficiaries receiving naloxone increased.

What OIG Concludes

There is clearly still cause for concern and vigilance, even as some positive trends emerge. Monitoring opioid use and access to medications for the treatment of opioid use disorder as well as to naloxone are critical to addressing the opioid crisis. A December 2021 OIG report recommended that the Centers for Medicare & Medicaid Services (CMS) take steps to improve access to medications for the treatment of opioid use disorder and other support services.[4] We continue to call attention to the importance of implementing these recommendations and to ensuring access to treatment for opioid use disorder for Medicare beneficiaries. OIG is also committed to continuing our work on opioid use and access to treatment.

RESULTS

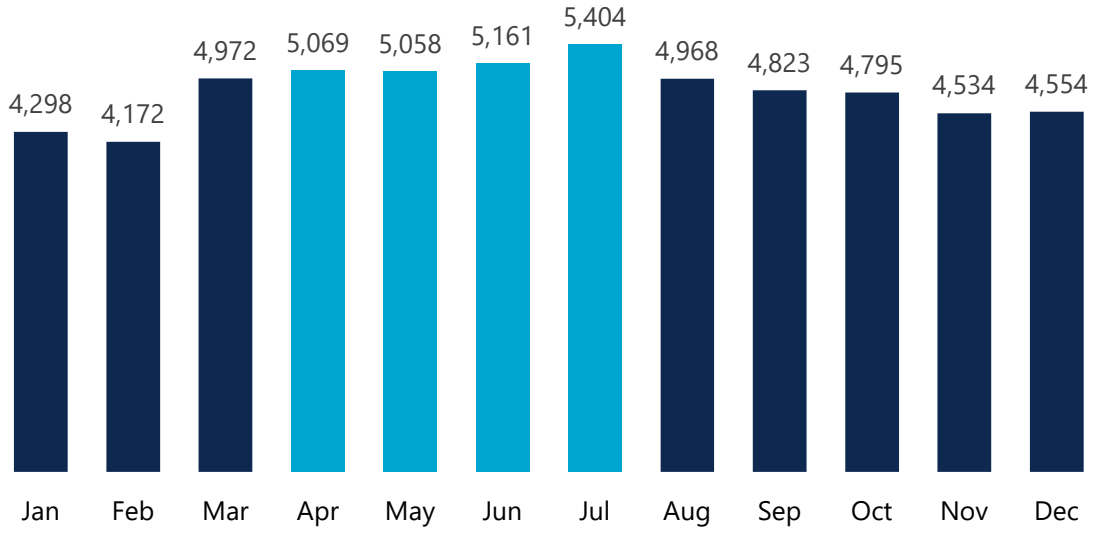
Opioid overdoses remain a concern, with about 50,400 Part D beneficiaries experiencing an overdose in 2021

In 2021, at least 50,391 Part D beneficiaries experienced an opioid overdose. This is the number of Part D beneficiaries who received medical care for an opioid overdose, such as an emergency room visit, that was billed to Medicare.[5] These overdoses were linked to prescription opioids, illicit opioids, or both.

The total number of beneficiaries who experienced an opioid overdose is likely higher. Additional beneficiaries could have overdosed but not received medical care that was billed to Medicare. For example, a beneficiary who suffered a fatal overdose alone would not be counted if there was no medical care billed to Medicare. Further, if a beneficiary's claim had yet to be submitted to Medicare at the time that claims data was analyzed for this report (July 2022), then their overdose would not be identified.

On average, about 4,800 beneficiaries per month experienced an overdose in 2021. However, in certain months the number was much higher. Between April and July 2021, more than 5,000 Part D beneficiaries per month received treatment for an opioid overdose that was billed to Medicare. See Exhibit 1.

Exhibit 1: At least 5,000 Part D beneficiaries experienced an opioid overdose per month between April and July 2021.



Source: OIG analysis of Medicare data, 2022.

Almost a quarter of Part D beneficiaries received opioids in 2021

In 2021, almost a quarter of Part D beneficiaries received at least one prescription opioid through Medicare Part D. Twenty-three percent of beneficiaries—12.1 million of the 51.6 million beneficiaries enrolled in Medicare Part D—received opioids. This is an overall decrease from 2020, when 24 percent of beneficiaries received opioids through Part D, and it continues a downward trend from prior years. From 2016 to 2019, the proportion of beneficiaries receiving opioids declined from 33 percent to 26 percent.[6] (See Appendix A for information about opioid use in each State.)

Part D paid for 61.4 million opioid prescriptions, an average of 5.1 prescriptions per beneficiary receiving opioids in 2021.[7] This total number is a decrease from 2020, when Medicare paid for 63.4 million opioid prescriptions. It is also a decline from previous years. From 2016 to 2019, the number of opioid prescriptions exceeded 66 million annually.[8]

Similarly, overall Part D spending for opioids also decreased. Part D paid about $2.6 billion for opioids in 2021, compared to $2.7 billion in 2020.

Almost 200,000 Part D beneficiaries received high amounts of opioids in 2021

In 2021, a total of 199,169 beneficiaries received high amounts of opioids through Medicare Part D—i.e., each beneficiary had an average morphine equivalent dose (MED) of greater than 120 mg a day for at least 3 months. MED is a measure that converts all the various opioids and strengths into one standard value. These beneficiaries did not have cancer and were not in hospice care.[9]

The number of beneficiaries receiving high amounts of opioids is a decrease from 2020, when 225,463 beneficiaries received high amounts. It is also a decline from previous years. (See Appendix B for more information about previous years.)

Although beneficiaries may receive opioids for legitimate purposes, these amounts raise concern as opioids carry a number of health risks.[10] CDC recommends that prescribers use caution when ordering opioids at any dosage and avoid increasing dosages to the equivalent of 90 mg or more MED a day for chronic pain or carefully justify the decision to increase to this level.[11]

About 23,000 beneficiaries were at serious risk because they received extreme amounts of opioids or appeared to be doctor shopping

Two subgroups of beneficiaries in particular are at serious risk of misuse or overdose: (1) beneficiaries who receive extreme amounts of opioids and (2) beneficiaries who appear to be doctor shopping. Other Part D beneficiaries may also be at serious risk but do not fall into either group.

A total of 23,186 beneficiaries were in these subgroups.[12] (This does not include beneficiaries who have cancer or were in hospice care.) Specifically, 21,493 beneficiaries received extreme amounts of opioids (i.e., had an average daily MED greater than 240 mg for 12 months) and 1,805 beneficiaries appeared to be doctor shopping (i.e., received high amounts of opioids and had 4 or more prescribers and 4 or more pharmacies). A total of 112 beneficiaries were in both groups.

The number of beneficiaries at serious risk in 2021 (23,186 beneficiaries) declined 21 percent from 2020, when OIG identified 29,306 beneficiaries.[13] Of note, the larger drop occurred in the number of beneficiaries who received extreme amounts of opioids. In 2021, there were about a fifth fewer beneficiaries who received extreme amounts of opioids than in 2020.[14] (See Appendix B for more detailed information.)

Receiving extreme amounts of opioids or receiving high amounts of opioids from multiple prescribers or pharmacies raises concern. It may signal that a beneficiary's care is not being monitored or coordinated properly or that a beneficiary's care needs to be reassessed.[15] It may also indicate that a beneficiary is seeking medically unnecessary drugs—perhaps to use them recreationally or to divert them—or that a beneficiary is addicted to opioids and at risk of overdose.

Furthermore, a beneficiary's receiving high amounts of opioids and having multiple prescribers and pharmacies may indicate that prescribers are not checking the beneficiary's opioid history before prescribing. States maintain databases—called prescription drug monitoring programs—that track prescriptions for controlled substances.[16] Prescribers can check these databases before ordering opioids to determine whether a beneficiary is already receiving opioids ordered by other prescribers.[17]

Raising particular concern, a total of 244 beneficiaries had an average daily MED of more than 1,000 mg a day for the entire year.

About 100 prescribers had questionable opioid prescribing for beneficiaries at serious risk

A total of 26,245 prescribers ordered opioids for at least 1 beneficiary at serious risk of opioid misuse or overdose (i.e., a beneficiary who received extreme amounts of opioids or appeared to be doctor shopping in 2021). The vast majority of these prescribers each ordered opioids for only one or two of these beneficiaries. Some prescribers ordered for many more.

A total of 98 prescribers stand out as having questionable prescribing; they were far outside the norm with their prescribing and warrant further scrutiny. They ordered opioids for the highest numbers of beneficiaries at serious risk. Specifically, 68 prescribers each ordered opioids for at least 27 beneficiaries who received extreme amounts of opioids in 2021. Further, 35 prescribers each ordered opioids for at least 6 beneficiaries who appeared to be doctor shopping. Five prescribers ordered opioids for high numbers of beneficiaries in both groups at serious risk.

The number of prescribers with questionable prescribing for beneficiaries at serious risk was steady, with 98 prescribers with questionable prescribing. By contrast, between 2016 and 2020 the number of prescribers with questionable opioid prescribing declined by about 30 percent each year. (See Appendix C for more information about previous years.)

Although opioids may be necessary for some patients, prescribing to an unusually high number of beneficiaries at serious risk raises concerns. It may indicate that beneficiaries are receiving poorly coordinated care and could be in danger of overdose or dependence. It may also signal that prescribers are not checking State prescription drug monitoring databases, or that these databases do not have current data.

Prescribing to an unusually high number of beneficiaries at serious risk could also indicate that the prescriber is ordering medically unnecessary drugs that could be diverted for resale or recreational use. Another possibility is that the prescriber's identification has been sold or stolen and is being used for illegal purposes.

In total, these 98 prescribers ordered 50,554 opioid prescriptions—totaling $15.1 million of Part D costs—for beneficiaries at serious risk in 2021.

More than one million Medicare beneficiaries had a diagnosis of opioid use disorder in 2021

In 2021, 1.1 million Medicare beneficiaries—1,100,884—had a diagnosis of opioid use disorder.[18] Opioid use disorder is a problematic pattern of opioid use that leads to clinically significant impairment or distress.[19] It is a chronic condition that can be treated with certain medications that have been shown to decrease illicit opioid use and opioid-related overdose deaths. When these medications are combined with behavioral therapy or counseling, it is referred to as medication-assisted treatment (MAT).[20]

Diagnosing opioid use disorder requires a thorough evaluation that may include checking a patient's history of opioid prescriptions or testing a patient's urine.[21] To receive a diagnosis, a patient must meet two or more diagnostic criteria, such as craving opioids or taking opioids in larger amounts or over a longer period than intended.[22]

Fewer than 1 in 5 Medicare beneficiaries with an opioid use disorder diagnosis received medication to treat their opioid use disorder in 2021

Fewer than 1 in 5 Medicare beneficiaries with opioid use disorder received medication for this disorder in 2021. A total of 194,860 Medicare beneficiaries out of the 1.1 million diagnosed—about 18 percent—received a medication to treat their opioid use disorder in an outpatient setting. Currently, three medications are approved by

the Food & Drug Administration (FDA) for the treatment of opioid use disorder: buprenorphine, methadone, and naltrexone. The FDA recommends that all three of these medications be available to all patients because certain medications may be more appropriate for some patients than others.[23] These medications are sometimes referred to as medications for opioid use disorder (MOUD).

Methadone for the treatment of opioid use disorder can only be administered or dispensed by opioid treatment programs.[24] Because methadone for the treatment of opioid use disorder is not dispensed by a pharmacy, it is not covered by Part D.[25] Buprenorphine for the treatment of opioid use disorder can also be dispensed or administered at opioid treatment programs. It can also be prescribed or administered in office-based settings by providers who obtain a waiver through the Substance Abuse and Mental Health Services Administration (SAMHSA).[26] The dispensing and administration of naltrexone is not subject to these restrictions. Both buprenorphine and naltrexone are covered by Part D.

The overall proportion of beneficiaries with opioid use disorder receiving medication increased from 2020 to 2021. In 2020, about 16 percent of Medicare beneficiaries received medication in outpatient settings, compared to about 18 percent in 2021.[27] Nonetheless, this low proportion may indicate that beneficiaries have challenges accessing treatment.

Most beneficiaries received medication to treat their opioid use disorder in office-based settings, covered by Medicare Part D

Of the 194,860 Medicare beneficiaries who received medication to treat their opioid use disorder, close to three-quarters of them—141,327 of 194,860—received their medication in office-based settings. This includes beneficiaries whose providers ordered prescriptions that were filled at pharmacies as well as beneficiaries whose providers directly administered the medications (e.g., long-acting, injectable medications). The vast majority of beneficiaries—140,876—had their medications covered by Medicare Part D. A small number of beneficiaries—2,540—had their medication covered by Part B or C.[28] See Exhibit 2.

Exhibit 2: Part D covered almost all of the beneficiaries who received office-based medication to treat their opioid use disorder.

	Beneficiaries*	Percentage of Total*
Part D	**140,876**	**99.7%**
Part B or C	2,540	2%
Total	141,327	

* Beneficiaries and percentages do not sum to the total and 100%, respectively, because some beneficiaries received medications from Part D and from Part B or C.
Source: OIG analysis of Medicare data, 2022.

Most beneficiaries who received medication in office-based settings received buprenorphine. In total, 134,031 beneficiaries received buprenorphine. As previously mentioned, in order to prescribe buprenorphine in office-based settings prescribers are required to obtain a special waiver from SAMHSA. An additional 8,762 beneficiaries received naltrexone.[29] See Exhibit 3.

Exhibit 3: Most beneficiaries who received office-based medication to treat opioid use disorder received buprenorphine.

	Beneficiaries*	Percentage of Total*
Buprenorphine	**134,031**	**95%**
Naltrexone	8,762	6%
Total	141,327	

* Beneficiaries and percentages do not sum to the total and 100%, respectively, because some beneficiaries received both buprenorphine and naltrexone.
Source: OIG analysis of Medicare data, 2022.

A smaller number of beneficiaries received medication from opioid treatment programs

A smaller number—57,482 of the 194,860—received their medication from opioid treatment programs in 2021.[30] See Exhibit 4. This marked the second year in which Medicare covered treatment services provided at opioid treatment programs. Prior to 2020, opioid treatment programs were not a provider type recognized by Medicare.[31] SAMHSA requires opioid treatment programs to provide adequate medical, counseling, vocational, educational, and other assessment and treatment services in addition to providing medication.[32]

Exhibit 4: Most beneficiaries received medication from office-based settings to treat their opioid use disorder.

	Beneficiaries*	Percentage of Total*
Office based	**141,327**	**73%**
Opioid treatment programs	57,482	29%
Total	194,860	

* Beneficiaries and percentages do not sum to the total and 100%, respectively, because some beneficiaries received treatment from both settings.
Source: OIG analysis of Medicare data, 2022.

Most beneficiaries who received medication from opioid treatment programs—55,213—received methadone. As mentioned previously, opioid treatment programs are the only providers allowed to administer or dispense methadone for the treatment of opioid use disorder. A smaller number—3,194—received buprenorphine. Just 21 received naltrexone. See Exhibit 5.

Exhibit 5: Most beneficiaries who received treatment from opioid treatment programs received methadone.

	Beneficiaries*	Percentage of Total*
Methadone	**55,213**	**96%**
Buprenorphine	3,194	6%
Naltrexone	21	0.04%
Total	57,482	

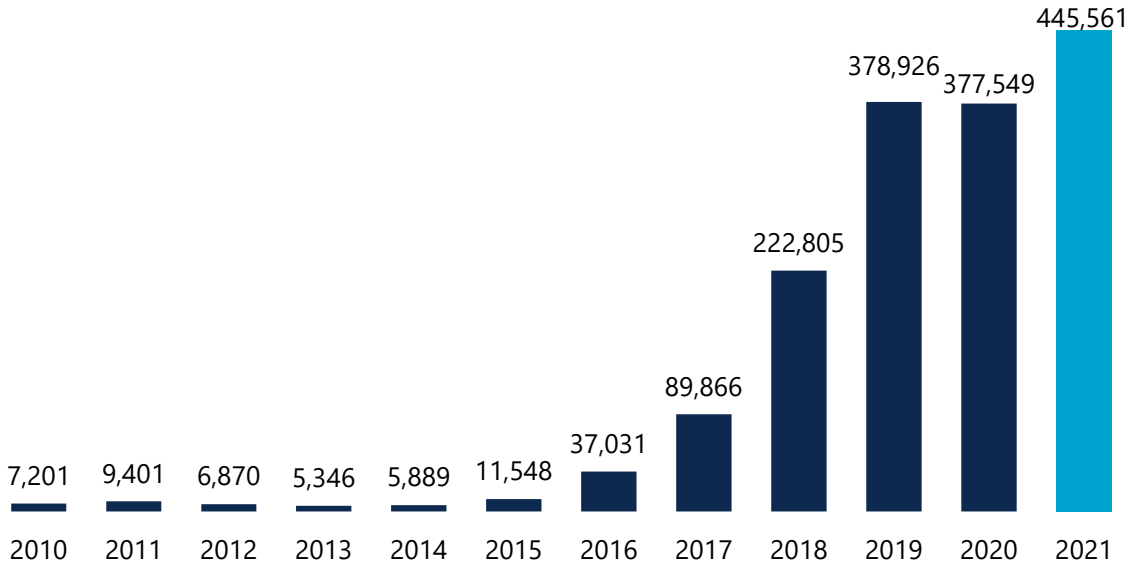
* Beneficiaries and percentages do not sum to the total and 100%, respectively, because some beneficiaries received more than one type of medication.
Source: OIG analysis of Medicare data, 2022.

The number of beneficiaries receiving prescriptions for the overdose-reversal drug naloxone through Part D grew in 2021

The number of beneficiaries receiving naloxone prescriptions through Part D grew in 2021. This continues an upward trend that has occurred in every recent year other than 2020, when there was a slight decrease. Naloxone is a medication that can reverse the effects of an opioid overdose. Overdoses occur when high doses of opioids—alone or in combination with other substances—cause breathing to slow to dangerous levels or to stop altogether. 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.[33]

A total of 445,561 Part D beneficiaries received a naloxone prescription in 2021, compared to 377,549 beneficiaries in 2020. See Exhibit 6. This represents an 18 percent increase in the number of beneficiaries receiving naloxone. Additional beneficiaries may have received naloxone other than through Part D.[34]

Exhibit 6: The number of beneficiaries receiving naloxone through Part D increased in 2021.



Source: OIG analysis of Medicare data, 2022.

The total number of prescriptions for naloxone also increased, reaching 503,003 prescriptions in 2021—a 19 percent increase from 2020. Increasing access to naloxone is a priority of the Administration.[35] It recommends ensuring that harm reduction organizations have access to naloxone and the use of data-driven efforts to ensure that naloxone is supplied to areas that most urgently need it.

CONCLUSION

The opioid epidemic continues to grip the nation. There is clearly still cause for concern and vigilance, even as some positive trends emerge. In 2021, at least 50,400 Part D beneficiaries experienced an opioid overdose. At the same time, the number of Medicare Part D beneficiaries who received opioids in 2021 decreased to approximately a quarter of a million beneficiaries, extending a downward trend from prior years. Further, fewer Part D beneficiaries were identified as receiving high amounts of opioids or at serious risk of misuse or overdose. The number of prescribers ordering opioids for large numbers of beneficiaries at serious risk was steady.

Still, over 1 million Medicare beneficiaries had a diagnosis of opioid use disorder in 2021, and fewer than 1 in 5 of them received medication to treat their opioid use disorder. This low proportion may indicate that beneficiaries have challenges accessing treatment. At the same time, the number of Part D beneficiaries receiving the opioid overdose-reversal drug naloxone, increased.

Monitoring opioid use and access to treatment of opioid use disorder and to naloxone has always been critical to fighting the opioid crisis in this country. Ensuring access to medications to treat opioid use disorder remains a top priority of OIG. OIG recently recommended that CMS do more to ensure access to treatment, including by (1) conducting additional outreach to beneficiaries to increase awareness about Medicare coverage for the treatment of opioid use disorder; (2) taking steps to increase the number of providers and opioid treatment programs for Medicare beneficiaries with opioid use disorder; (3) assisting SAMHSA by providing data about the number of Medicare beneficiaries receiving buprenorphine in office-based settings and the geographic areas where Medicare beneficiaries remain underserved; and (4) creating an action plan and taking steps to address disparities in the treatment of opioid use disorder.[36]

We continue to call attention to the importance of implementing these recommendations and to ensuring access to treatment for opioid use disorder for Medicare beneficiaries. We are encouraged that CMS is taking steps to address these recommendations and is committed to promoting access to prevention and treatment services for opioid use disorder. For instance, in April 2022 CMS released a Behavioral Health Strategy that includes goals of strengthening equity and quality in behavioral health care and improving access to substance use disorders prevention, treatment, and recovery services.[37] Also underway is the Value in Opioid Use Disorder Treatment Demonstration Program which aims to increase Medicare beneficiary access to opioid use disorder treatment services, improve physical and mental health outcomes, and reduce program expenditures.[38] We also encourage CMS to continue to take steps to increase the use of naloxone among Medicare beneficiaries.[39]

In addition, OIG is committed to working with our law enforcement partners and with CMS. We will refer prescribers with questionable opioid prescribing to CMS, as appropriate. We are also committed to continuing our work on access to treatment and to increasing the use of the overdose-reversal drug naloxone.[40]

METHODOLOGY

We based this study primarily on five data sources: Medicare Part D Prescription Drug Event (PDE) records, the First Databank, the Medicare Enrollment Database, the National Claims History File, and Part C Encounter Data. We also use the Center for Disease Control and Prevention's (CDC's) Morphine Milligram Equivalent (MME) conversion file.

PDE records are for prescriptions that beneficiaries received through Part D. They do not include prescriptions paid for through other programs, prescriptions paid for in cash, or illicitly purchased drugs. Part D sponsors submit a PDE record to CMS each time a drug is dispensed to a beneficiary enrolled in their plans. Each record contains information about the drug and beneficiary, as well as the identification numbers for the pharmacy and the prescriber.

To obtain descriptive information about the drugs, beneficiaries, and prescribers, we matched PDE records to data from the First DataBank, the National Claims History File, Part C Encounter Data, and CDC's MME conversion file. The First DataBank contains information about each drug, such as the drug name, strength of the drug, and therapeutic class (e.g., an opioid). The National Claims History File contains claims data from Medicare Parts A and B, including diagnosis codes and prescribed medications. Part C Encounter Data contain medical claims data, including diagnosis codes and prescribed medications, for beneficiaries enrolled in Medicare Advantage plans. CDC's MME conversion file contains information about each opioid drug's morphine milligram equivalence.[41] For the purposes of this study, we use the term "prescription" to mean one PDE record.

Analysis of Opioid Overdoses

To determine the number of Part D beneficiaries who had an opioid overdose in 2021, we used inpatient and outpatient (including professional) claims data from the National Claims History File and Part C Encounter Data. We considered a beneficiary to have had an overdose if the beneficiary had at least one claim from Medicare Part A, B, or C with a diagnosis of an opioid poisoning from prescription or illicit opioids in 2021.

Analysis of Proportion of Part D Beneficiaries Receiving Opioids

Using the PDE records and Medicare Enrollment Database, we determined the proportion of the Part D beneficiaries who received opioids in 2021. First, we determined the proportion of beneficiaries enrolled in Part D nationwide who received at least one opioid. We then determined the proportion of beneficiaries enrolled in each State who received at least one opioid.

Analysis of Part D Beneficiaries Receiving High Amounts of Opioids

We determined the amount of opioids that each beneficiary received in 2021. To do this, we calculated each beneficiary's average daily morphine equivalent dose (MED).[42] 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 beneficiary's daily opioid level.

To calculate each beneficiary's average daily MED, we first calculated the MED for each prescription (i.e., for each PDE record).[43] To do this, we used the following equation:

$$MED = \frac{(Strength\ per\ unit) \times (Quantity\ dispensed) \times (MME\ conversion\ factor)}{(Days\ supplied)}$$

Next, we summed each beneficiary's MED for each day of the year based on the dates of service and days supply on each PDE record. We refer to this as the daily MED. We excluded from this analysis beneficiaries who had a diagnosis of cancer or a hospice stay at any point in 2021.[44]

We analyzed the MED data using the same criteria that we used in our previous analysis of the 2016, 2017, 2018, 2019, and 2020 data.[45] We began by determining the extent to which beneficiaries received high amounts of opioids. To do this, we calculated each beneficiary's average daily MED over each 90-day period in 2021. We determined that beneficiaries received high amounts of opioids if they exceeded an average daily MED of 120 mg for any 90-day period and had received opioids for 90 or more days in the year. The MED of 120 mg exceeds the 90-mg MED level that CDC recommends avoiding for patients with chronic pain.

We then determined the extent to which these beneficiaries received extreme amounts of opioids. We calculated each beneficiary's average daily MED over the entire year. We considered a beneficiary who exceeded an average daily MED of 240 mg for the entire year and had received opioids for 360 days or more to have received an extreme amount of opioids.

Next, we determined the extent to which beneficiaries appeared to be doctor shopping. To do this, we calculated the total number of prescribers and pharmacies from which each beneficiary received opioids in 2021. We considered beneficiaries to have appeared to be doctor shopping if they exceeded an average daily MED of 120 mg for any 90-day period; received opioids for 90 or more days in the year; and received opioids from four or more prescribers and four or more pharmacies.

Lastly, we compared the number of beneficiaries who received high amounts of opioids and who were at serious risk of opioid misuse or overdose to the numbers of beneficiaries whom we had previously identified in our analyses of the 2016, 2017, 2018, 2019, and 2020 data.

Analysis of Part D Beneficiaries at Serious Risk of Opioid Misuse or Overdose

We also identified beneficiaries at serious risk of opioid misuse or overdose. We analyzed the data for 2021. We considered a beneficiary to be "at serious risk" if the beneficiary received extreme amounts of opioids or appeared to be doctor shopping.

We considered a beneficiary to have received an extreme amount of opioids if the beneficiary exceeded an average daily MED of 240 mg for 2021.

To identify beneficiaries who appear to be doctor shopping, we calculated the total number of prescribers and pharmacies from which each beneficiary received opioids in 2021. We considered beneficiaries to have appeared to be doctor shopping if the beneficiary exceeded an average daily MED of greater than 120 mg MED for 3 months and received opioids from four or more prescribers and four or more pharmacies. We identified prescribers and pharmacies based on their National Provider Identifier (NPI) numbers.

Once identified, we compared the beneficiaries identified as being at serious risk in 2021 to the beneficiaries identified as being at serious risk in 2016, 2017, 2018, 2019, and 2020.

Identification of Prescribers With Questionable Prescribing

For this analysis, we identified prescribers who ordered opioids for a high number of beneficiaries at serious risk—i.e., beneficiaries who received extreme amounts of opioids and beneficiaries who appeared to be doctor shopping. We considered these prescribers to have questionable prescribing patterns that warrant further scrutiny. We used the NPIs on the PDE records to identify prescribers. We considered each NPI to be a unique prescriber.[46]

In total, 19,460 prescribers ordered opioids for beneficiaries who received extreme amounts of opioids and 9,028 prescribers ordered opioids for beneficiaries who appeared to be doctor shopping. For each of these prescribers, we calculated the number of beneficiaries in each group for whom the prescriber ordered opioids. We then identified the prescribers who ordered opioids for the highest number of beneficiaries in each group. All of these prescribers are extreme outliers in terms of the number of beneficiaries to whom they prescribed opioids in one of the groups at serious risk. These prescribers were more than 3 standard deviations above the mean and in the top 0.3 percent.

Analysis of Beneficiaries Receiving Medication to Treat Their Opioid Use Disorder

We used Medicare Parts A and B Claims Data and Part C Encounter Data to determine which Medicare beneficiaries had a diagnosis of opioid use disorder in their 2021 claims. We considered beneficiaries to have opioid use disorder if they had a

diagnosis code categorized as "opioid abuse" (F11.1) or "opioid dependence" (F11.2) on any claim during 2021.

We then determined the extent to which these beneficiaries received medication to treat their opioid use disorder through Medicare in 2021.

Prescription Drug Event Records. We first used the PDE records to identify the number of beneficiaries who filled prescriptions for medications for opioid use disorder at pharmacies in 2021. Drugs filled at pharmacies are covered by Part D. They may be covered by standalone prescription drug plans (PDPs) or prescription drug plans that are part of Medicare Advantage plans (MA-PDs).

Medicare Claims and Part C Encounter Data. We then used Medicare Part B Claims Data and Part C Encounter Data to identify the number of beneficiaries who were prescribed medications for opioid use disorder through opioid treatment programs or in a provider's office.

Analysis of Trends in Part D for Naloxone

Next, we identified all PDE records for naloxone—a drug that reverses opioid overdoses. We calculated the total number of beneficiaries who received naloxone and the number of prescriptions for naloxone from 2010 to 2021.

Limitations

This analysis is based on Medicare claims data. It is not based on a review of medical records. The analysis does not include data on opioids, medications to treat opioid use disorders, or naloxone that beneficiaries may have received from sources other than Medicare.

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

State Data

Exhibit A: Alabama had the highest proportion of beneficiaries receiving opioids through Medicare Part D, while New York and Hawaii had the lowest proportion.

Proportion of Beneficiaries in Each State and Nationwide Who Received Opioids Through Medicare Part D in 2021			
Alabama	36%	Iowa	23%
Arkansas	33%	Ohio	23%
Louisiana	32%	Arizona	23%
Mississippi	32%	Virginia	22%
Oklahoma	30%	Alaska	22%
Kentucky	30%	Illinois	22%
Georgia	30%	Nevada	22%
Tennessee	29%	Wisconsin	22%
Missouri	28%	South Dakota	22%
South Carolina	28%	North Dakota	22%
Kansas	28%	Maryland	21%
Indiana	27%	New Mexico	21%
Utah	27%	Delaware	20%
North Carolina	27%	California	20%
Idaho	26%	Minnesota	20%
Texas	25%	Pennsylvania	20%
West Virginia	25%	Connecticut	18%
Oregon	25%	District of Columbia	18%
Montana	24%	Maine	18%
Wyoming	24%	Massachusetts	18%
Michigan	24%	New Jersey	18%
Colorado	24%	New Hampshire	17%
Washington	24%	Rhode Island	17%
Nebraska	24%	Vermont	16%
Nation	**23%**	Hawaii	15%
Florida	23%	New York	15%

Source: OIG analysis of Medicare Part D data, 2022.

APPENDIX B

Beneficiaries Receiving Opioids Through Part D

Exhibit B-1: About 200,000 beneficiaries received high amounts of opioids through Part D in 2021.

	Number of Beneficiaries Who Received High Amounts of Opioids	Percentage Change from Previous Year
2016	501,008	-
2017	458,935	-8%
2018	353,751	-23%
2019	266,728	-25%
2020	225,463	-15%
2021	199,169	-12%

Source: OIG analysis of Medicare Part D data, 2022.

Exhibit B-2: About 23,000 beneficiaries were at serious risk in 2021.

	Number of Beneficiaries Who Received Extreme Amounts of Opioids	Percentage Change from Previous Year	Number of Beneficiaries Who Appear To Be Doctor Shopping	Percentage Change from Previous Year	Total Number of Beneficiaries at Serious Risk*	Percentage Change from Previous Year
2016	69,563	-	22,308	-	**89,843**	-
2017	57,611	-17%	14,814	-34%	**71,260**	-21%
2018	40,374	-30%	8,796	-41%	**48,558**	-32%
2019	29,734	-26%	4,346	-51%	**33,809**	-30%
2020	27,352	-8%	2,131	-51%	**29,306**	-13%
2021	21,493	-21%	1,805	-15%	**23,186**	-21%

* Numbers in the "total" column do not equal the sums of the numbers in the corresponding "extreme amount" and "doctor shopping" columns because beneficiaries can be in both groups.
Source: OIG analysis of Medicare Part D data, 2022.

APPENDIX C

Prescribers With Questionable Opioid Prescribing for Beneficiaries at Serious Risk

Exhibit C: About 100 prescribers ordered opioids for a high number of beneficiaries at serious risk in 2021.

	Number of Prescribers With Questionable Opioid Prescribing for Beneficiaries at Serious Risk	Percentage Change from Previous Year
2016	401	-
2017	282	-30%
2018	198	-30%
2019	142	-28%
2020	98	-31%
2021	98	0%

For more information, see these previous OIG data briefs: *Opioids in Medicare Part D: Concerns About Extreme Use and Questionable Prescribing* (OEI-02-17-00250), July 2017; *Opioid Use in Medicare Part D Remains Concerning* (OEI-02-18-00220), June 2018; *Opioid Use Decreased in Medicare Part D, While Medication-Assisted Treatment Increased* (OEI-02-19-00390), July 2019; *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 *Concerns Persist About Opioid Overdoses and Medicare Beneficiaries' Access to Treatment and Overdose-Reversal Drugs* (OEI-02-20-00401), August 2021.
Source: OIG analysis of Medicare Part D data, 2017-2022.

ACKNOWLEDGMENTS AND CONTACT

Acknowledgments

Jason Kwong and Margaret Himmelright served as the team leaders for this study. Others in the Office of Evaluation and Inspections who conducted the study include Miriam Anderson. Office of Evaluation and Inspections staff who provided support include Althea Hosein and Michael Novello.

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ENDNOTES

[1] CDC, *Provisional Drug Overdose Death Counts*, June 9, 2022. Accessed at https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm on July 13, 2022.

[2] This builds off of a recently released OIG report on Medicare beneficiaries who received medication to treat their opioid use disorder and other related services. See OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder*, OEI-02-20-00390, December 2021; OIG, *Concerns Persist About Opioid Overdoses and Medicare Beneficiaries' Access to Treatment and Overdose-Reversal Drugs*, OEI-02-20-00401, August 2021; OIG, *Opioid Use in Medicare Part D During the Onset of the COVID-19 Pandemic*, OEI-02-20-00400, February 2021; 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, *Opioid Use Decreased in Medicare Part D, While Medication-Assisted Treatment Increased*, OEI-02-19-00390, July 2019; OIG, *Opioid Use in Medicare Part D Remains Concerning*, OEI-02-18-00220, June 2018; and OIG, *Opioids in Medicare Part D: Concerns About Extreme Use and Questionable Prescribing*, OEI-02-17-00250, July 2017.

[3] This represents the number of Medicare beneficiaries who received medication to treat their opioid use disorder in outpatient settings. See OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder*, OEI-02-20-00390, December 2021.

[4] OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder*, OEI-02-20-00390, December 2021.

[5] We considered a beneficiary to have had an overdose if the beneficiary had at least one claim from Medicare Part A, B, or C with a diagnosis of an opioid poisoning from prescription or illicit opioids.

[6] In 2019, 26 percent of beneficiaries received an opioid through Part D; a decrease from 2018, when 29 percent did; a decrease from 2017, when 31 percent did; and a decrease from 2016, when 33 percent did.

[7] This represents the total number of opioid prescriptions paid for under Part D, including those in the deductible stage of the benefit when some beneficiaries pay the full cost. For the purposes of this study, we use the term "prescription" to mean one PDE record.

[8] In 2019, 2018, 2017, and 2016, Part D paid for 66.5 million, 71 million, 76 million, and 79 million opioid prescriptions, respectively.

[9] We excluded beneficiaries with cancer and those in hospice care to align with the criteria that CMS used in 2016 and 2017 for its Overutilization Monitoring System. The criteria for the Overutilization Monitoring System changed in 2018. See CMS, *Announcement of Calendar Year (CY) 2018 Medicare Advantage Capitation Rates and Medicare Advantage and Part D Payment Policies and Final Call Letter and Request for Information*, April 3, 2017. Accessed at https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/Announcement2018.pdf on June 16, 2022.

[10] In addition to the risk of dependence and overdose, opioids carry other health risks, including respiratory depression, constipation, drowsiness, and confusion. Older adults may also be at an increased risk of injury, as research has shown that the risk of fracture may increase as drug dosage increases. See Diane L. Chau, Vanessa Walker, Latha Pai, et al., "Opiates and Elderly: Use and Side Effects," *Clinical Interventions in Aging*, Vol. 3, No. 2, June 6, 2008, p. 276. CDC, "CDC Guideline for Prescribing Opioids for Chronic Pain–United States, 2016," *MMWR [Morbidity and Mortality Weekly Report] Recommendations and Reports*, Vol. 65, No. 1, March 18, 2016, pp. 1–49. Accessed at https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6501e1.pdf on June 9, 2022. Kathleen W. Saunders, Kate M. Dunn, Joseph O. Merrill, et al., "Relationship of Opioid Use and Dosage Levels to Fractures in Older Chronic Pain Patients," *Journal of General Internal Medicine*, Vol. 25, No. 4, January 19, 2010, pp. 310–315.

[11] CDC, "CDC Guideline for Prescribing Opioids for Chronic Pain–United States, 2016." (See preceding endnote for full *MMWR* citation and link.) CDC has recently sought public comment on a draft of an updated opioid prescribing guideline. A notable change in the proposed guideline is that the CDC does not include specific opioid levels in its main recommendations for prescribing opioids to patients. See CDC, *CDC Clinical Practice Guideline for Prescribing Opioids–United States, 2022* [Draft]. Accessed at https://www.regulations.gov/document/CDC-2022-0024-0002 on June 2, 2022.

[12] This group of beneficiaries is a subset of the 199,169 beneficiaries who received high amounts of opioids.

[13] Between 2016 and 2020, the number of beneficiaries OIG identified as at serious risk of opioid misuse or overdose decreased between 13 percent and 32 percent annually.

[14] A total of 4,503 of the beneficiaries identified as being at serious risk in 2021 were also identified as such in 2016, 2017, 2018, 2019, and 2020. Together, these beneficiaries represent 15 percent of the 23,186 beneficiaries identified as being at serious risk in 2021.

[15] CDC recommends that clinicians evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. CDC also recommends that clinicians evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids. CDC, "CDC Guideline for Prescribing Opioids for Chronic Pain–United States, 2016."

[16] Missouri's Governor signed into law legislation for a Statewide prescription drug monitoring program on June 8, 2021. See Missouri Senate Bill 63 (2021). Accessed at https://www.senate.mo.gov/21info/BTS_Web/Bill.aspx?SessionType=R&BillID=54228843 on July 18, 2022. A statewide prescription drug monitoring program is still under development.

[17] State requirements for checking this information vary. For more information about prescription drug monitoring programs, see the website of the Prescription Drug Monitoring Program Training and Technical Assistance Center, Brandeis University, at http://www.pdmpassist.org/.

[18] Each of these 1.1 million Medicare beneficiaries had a diagnosis of opioid use disorder on at least 1 Medicare claim in 2021 or received at least 1 service from an opioid treatment program in 2021. We refer to these beneficiaries as "beneficiaries with opioid use disorder" throughout the report.

[19] *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. Arlington, VA: American Psychiatric Publishing, 2013.

[20] 42 C.F.R. § 8.2.

[21] For more information about assessing a patient for opioid use disorder, see CDC training document *Module 5: Assessing and Addressing Opioid Use Disorder*. Accessed at https://www.cdc.gov/drugoverdose/training/oud/ on June 7, 2022.

[22] *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*, 2013.

[23] FDA, *Information about Medication-Assisted Treatment (MAT)*, February 14, 2019. Accessed at https://www.fda.gov/drugs/information-drug-class/information-about-medication-assisted-treatment-mat on May 26, 2022.

[24] 21 U.S.C. § 823(g). Also see 42 C.F.R. § 8.11 & § 8.12(h).

[25] CMS, *Medicare Prescription Drug Benefit Manual,* Ch. 6, Sec. 10.8. Accessed at https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovContra/Downloads/Part-D-Benefits-Manual-Chapter-6.pdf on August 9, 2022. Methadone is also indicated for pain. When prescribed for pain, it can be prescribed in outpatient settings.

[26] These waivers allowed certain practitioners to treat up to 100 patients with buprenorphine in the first year, although most qualified practitioners were limited to treating up to 30 patients in the first year. See 21 U.S.C. § 823(g)(2)(b)(III)(i). In subsequent years, a practitioner can treat up to 275 patients. See 42 CFR § 8.610. However, since April 2021, providers who plan to treat up to 30 patients have been exempt from some of the waiver requirements related to training, counseling, and

other services. See 86 F.R. 22439. Buprenorphine is also separately indicated for pain. Buprenorphine products indicated for pain are different from buprenorphine products indicated for the treatment of opioid use disorder.

[27] OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder*, OEI-02-20-00390, December 2021.

[28] A total of 2,089 beneficiaries who received medication to treat their opioid use disorder in office-based settings had medications covered both by Medicare Part D and by Medicare Part B or C.

[29] A total of 1,466 beneficiaries received both buprenorphine and naltrexone in office-based settings in 2021.

[30] A total of 3,949 beneficiaries received medication to treat their opioid use disorder from both office-based settings and opioid treatment programs in 2021.

[31] Beneficiaries enrolled in Medicare Advantage plans may have had opioid treatment program services covered prior to 2020 as a supplemental benefit. CMS, *Announcement of Calendar Year (CY) 2017 Medicare Advantage Capitation Rates and Medicare Advantage and Part D Payment Policies and Final Call Letter*, April 4, 2016. Accessed at https://www.cms.gov/medicare/health-plans/medicareadvtgspecratestats/downloads/announcement2017.pdf on August 24, 2022. Beginning in 2020, opioid treatment programs became a recognized Medicare provider type. They are paid through weekly bundled payments under Part B. See 42 CFR § 410.67.

[32] 42 C.F.R. § 8.12(f).

[33] National Institute on Drug Abuse, *Naloxone for Opioid Overdose: Life-Saving Science*, June 2021. Accessed at https://nida.nih.gov/publications/naloxone-opioid-overdose-life-saving-science on August 10, 2022.

[34] Notably, most States allow for third-party prescriptions, which means that family members or friends of an at-risk patient can get a prescription for naloxone in their own name. In addition, a number of recent initiatives have increased community-based distribution of naloxone. Also, beneficiaries who did not receive naloxone through Part D in 2021 may still have naloxone that they received through Part D from a prior year.

[35] Office of National Drug Control Policy, *National Drug Control Strategy*, April 2022. Accessed at https://www.whitehouse.gov/wp-content/uploads/2022/04/National-Drug-Control-2022Strategy.pdf on May 25, 2022.

[36] OIG also recommended that CMS take steps to increase the utilization of behavioral therapy among beneficiaries receiving medication to treat opioid use disorder and collect data on the use of telehealth in opioid treatment programs. See OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder*, OEI-02-20-00390, December 2021.

[37] CMS, *CMS Behavioral Health Strategy*. Accessed at https://www.cms.gov/cms-behavioral-health-strategy on July 1, 2022.

[38] CMS, *Value in Opioid Use Disorder Treatment Demonstration Program*. Accessed at https://innovation.cms.gov/innovation-models/value-in-treatment-demonstration on July 12, 2022.

[39] An example of a recent step CMS has taken to increase access to naloxone is that, beginning in 2022, opioid treatment programs can receive reimbursement under Part B for take-home supplies of nasal naloxone distributed to beneficiaries whom they are treating. See CMS, *Opioid Treatment Programs (OTPs) Medicare Billing & Payment*, November 2021. Accessed at https://www.cms.gov/files/document/otp-billing-and-payment-fact-sheet.pdf on August 10, 2022.

[40] OIG, *Many Medicare Beneficiaries Are Not Receiving Medication to Treat Their Opioid Use Disorder,* OEI-02-20-00390, December 2021; and OIG, *SAMHSA Is Missing Opportunities To Better Monitor Access to Medication Assisted Treatment Through the Buprenorphine Waiver Program*, OEI-BL-20-00260, June 2021.

[41] MED and MME are interchangeable terms.

[42] 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 June 16, 2022.

[43] We included opioids dispensed in 2020 with days of use in 2021. This analysis excludes PDE records for injection, intravenous, and intrathecal opioids, as well as opioids indicated for medication-assisted treatment.

[44] We identified beneficiaries with a cancer diagnosis or hospice stay by using CMS's National Claims History File and Part C Encounter data. In total, we identified 2,898,737 beneficiaries with cancer or in hospice care who received at least 1 opioid.

[45] We selected these criteria because they closely align with the criteria that CMS used in 2016 and 2017 for its Overutilization Monitoring System. Through 2017, CMS's Overutilization Monitoring System identified beneficiaries who had a daily MED of 120 mg for 90 days plus four or more prescribers and four or more pharmacies. Note that the guidance uses the term "more than 3 prescribers and more than 3 pharmacies," which is the equivalent of "4 or more prescribers and 4 or more pharmacies." The criteria for the Overutilization Monitoring System changed in 2018. See CMS, *Announcement of Calendar Year (CY) 2018 Medicare Advantage Capitation Rates and Medicare Advantage and Part D Payment Policies and Final Call Letter and Request for Information*, April 3, 2017. Accessed at https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/Announcement2018.pdf on June 16, 2022.

[46] For our analysis, we counted prescribers in group practices separately.