

Report Highlights

- About nine Z-codes were recorded per 10,000 **diabetes** or **asthma** Medicaid claims.
- **Child in Welfare Custody** had **36%** of uses in **asthma** claims and **18%** of uses in **diabetes** claims.
- **Homelessness** had **13%** of uses in **asthma** claims and **33%** of uses in **diabetes** claims.
- For **both asthma and diabetes**, Z-codes were **more common** for **males** than females, at **nearly double** the number of Z-codes per 10,000 claims.
- The **overwhelming majority (99%)** of all asthma or diabetes primary claims with Z-codes were provided by either **physicians or mid-level practitioners**

Z-Code Usage in Asthma and Diabetes in Montana Medicaid Members 2016–2020

Miscellaneous Z-codes (Z55–Z65), which will be referred to simply as Z-codes for the remainder of this report, are a group of codes used to report factors influencing health status and contact with health services. According to the 2014 ICD-10-CM guidelines, they are used to “capture a number of other health care encounters that do not fall into one of the other categories”.¹

These codes help capture data on social needs of patients, more commonly referred to as social determinants of health, which may influence a patient’s health status. Social determinants of health are conditions in the place where people live, learn, work, and play that affect their health risks and outcomes. Examples include healthcare access and quality, education access and quality, social and community context, economic stability, and neighborhoods and built environments.² One of Healthy People 2030’s overarching goals specifically relates to SDOH and improving the conditions in people’s environments.³

Z-codes can help improve a patient’s quality of care in numerous ways, such as identifying social risk factors, informing health care for follow-up visits, triggering referrals to services, and even sending data to public health professionals.⁴

This report describes the use of Z-codes in relation to a primary diagnosis of either asthma or diabetes among claims submitted to Montana Medicaid from 2016–2020.

Montana Chronic Disease Program

1400 E Broadway

Helena, Montana 59620-2951

(406) 444-7304

<https://dphhs.mt.gov/publichealth/asthma/index>

Asthma Program Staff

Jessie Fernandes—Section Supervisor

BJ Biskupiak—Program Manager

Carolyn Linden—Administrative Assistant

Jennifer Van Syckle—QI Coordinator

Ann Lanes—Data Analyst

Mary Duthie—Epidemiologist



Methods

This reported utilized Montana Medicaid claims data from 2016–2020. Claims were included in the analysis if they met the following criteria: they were final, paid claims for a Montana resident; they had a primary diagnosis of asthma (ICD-10 codes J45.0–J45.998) or diabetes (ICD-10 codes E08.0–E13.9); and a code between Z55.0–Z65.8 in any of the remaining three diagnosis slots (Table 1).

Table 1. SDOH Categories and Related Z-Codes

Category Name	Z-Code Range
Problems Related to Education and Literacy	Z55.0 - Z55.9
Problems Related to Employment and Unemployment	Z56.0 - Z56.9
Occupational Exposure to Risk Factors	Z57.0 - Z57.9
Problems Related to Housing and Economic Circumstances	Z59.0 - Z59.9
Problems Related to Social Environment	Z60.0 - Z60.9
Problems Related to Upbringing	Z62.0 - Z62.898
Other Problems Related to Primary Support Group	Z63.0 - Z63.8
Problems Related to Certain Psychosocial Circumstances	Z64.0 - Z64.4
Problems Related to Other Psychosocial Circumstances	Z65.0 - Z65.8

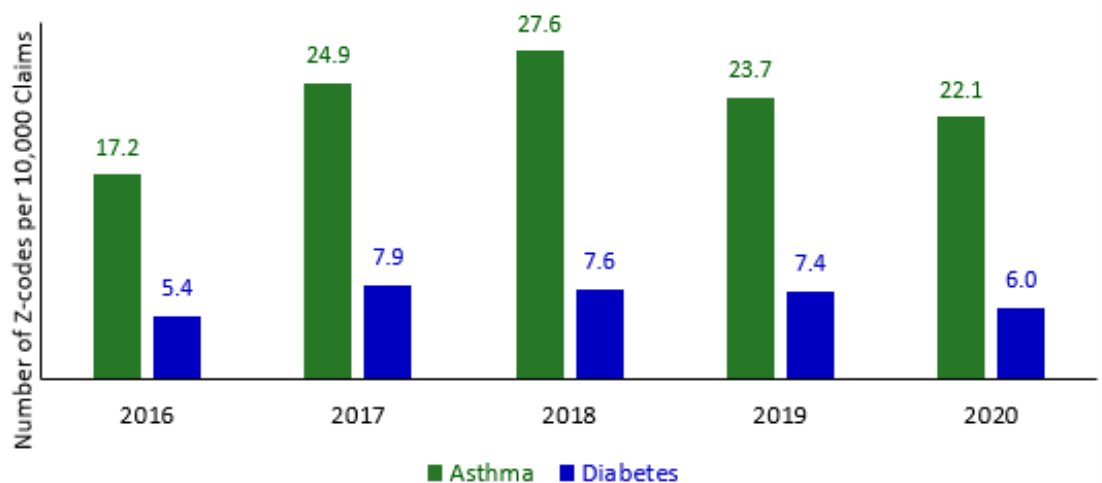
Patients did not have to be continuously enrolled in Medicaid to be included and the same patient could have multiple claims. Each claim could also have more than one Z-code. Each Z-code was counted individually.

All analyses were performed in SAS 9.4.

Results

- From **2016-2020**, there were **1,275 Z-codes** reported on **asthma claims** and **2,291 Z-codes** reported on **diabetes claims** for a **total of 3,566 Z-codes** reported
- During this time frame, **Z-code usage for asthma and diabetes-related claims was lowest in 2016**, but steadily **climbed until 2018** when Z-code usage **decreased in 2019 and 2020** (Figure 1).
- Z-codes were **consistently higher** per 10,000 claims for **asthma-related claims** than **diabetes-related claims** (Figure 1).

Figure 1. Number of Z-Codes per 10,000 Montana Medicaid Claims with Asthma or Diabetes as Primary Diagnosis, by Year, 2016-2020.

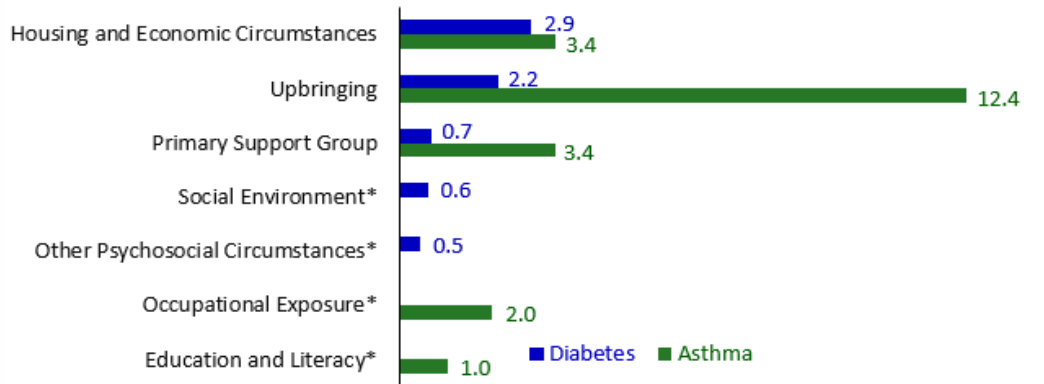




Results

- The **most common category** of Z-code for **diabetes-related claims** was related to **Housing and Economic Circumstances** (Figure 2).
- Z-codes related to **Upbringing** were very common with **both asthma and diabetes claims** (Figure 2).

Figure 2. Number of Z-Codes per 10,000 Montana Medicaid Claims with **Asthma** or **Diabetes** as Primary Diagnosis, by Category, 2016–2020



*Data were suppressed. Counts were less than 50

Table 2. Most Common Individual Z-Codes Used with Asthma as Primary Diagnosis, Montana Medicaid, 2016—2020

Main Category	Asthma Z-Codes Subcategory	N	Percent
Upbringing	Child in welfare custody	459	36
Housing and Economic Circumstances	Homelessness	165	13
Occupational Exposure	Occupational exposure to unspecified risk factor	73	6
Primary Support Group	Other specified problems related to primary support group	51	4
Upbringing	Institutional upbringing	37	2

Table 3. Most Common Individual Z-Codes Used with Diabetes as Primary Diagnosis, Montana Medicaid, 2016—2020

Main Category	Diabetes Z-Codes Subcategory	N	Percent
Housing and Economic Circumstances	Homelessness	751	33
Upbringing	Child in welfare custody	418	18
Social Environment	Problems related to social environment, unspecified	157	7
Housing and Economic Circumstances	Problems related to living in residential institution	122	5
Upbringing	Institutional upbringing	116	5

- The **most common** subcategory used in asthma and diabetes Z-codes were **Child in Welfare Custody** (**36%** and **18%**, respectively) and **Homelessness** (**13%** and **33%**, respectively) (Tables 2 and 3).
- The **third most common** subcategory for **asthma claims** was related to **occupational exposure**, at **6%** of all Z-codes (Table 2).
- Other common subcategory documented on **diabetes claims** were related to **living situations**, such as **living in a residential institution** (**5%**) and **institutional upbringing** (**5%**). (Table 3).

Results

- For both types of claims, Z-codes were **more commonly** used for **children than adults**, per 10,000 of the respective diagnosis and age group claims, at around **43 per 10,000** for children in both diagnosis (Figure 3).
- However, there are **more Z-codes per 10,000 adult asthma claims** than there are Z-codes per 10,000 adult diabetes claims, **10.7 per 10,000 to 3.8 per 10,000**, respectively (Figure 3).

Figure 3. Number of Z-Codes per 10,000 Montana Medicaid Claims with Asthma or Diabetes as Primary Diagnosis, by Child or Adult, 2016-2020

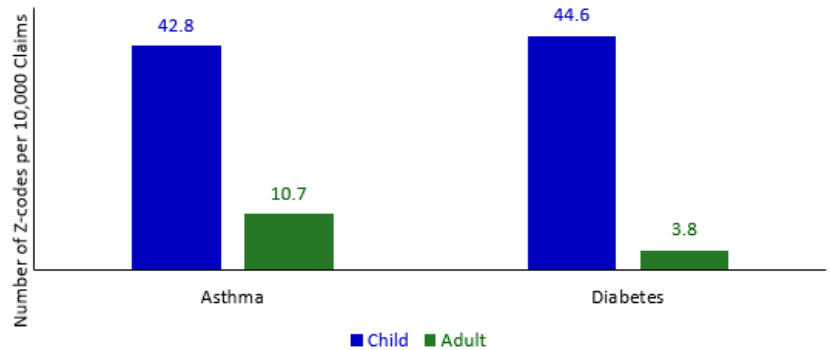
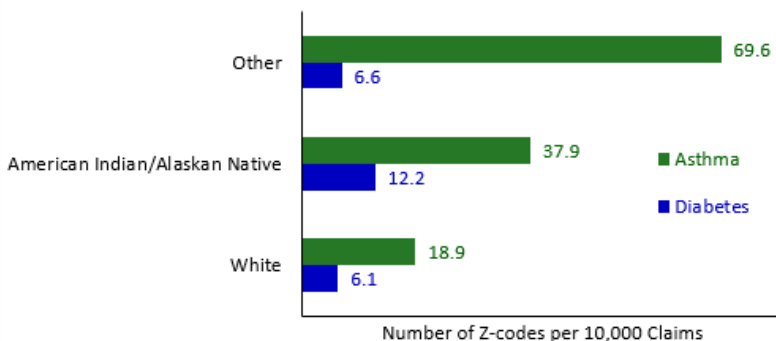


Figure 4. Number of Z-Codes per 10,000 Montana Medicaid Claims with Asthma or Diabetes as Primary Diagnosis, by Race, 2016-2020



- For **asthma**, “**other**” races had the **highest number of Z-codes, 69.6 per 10,000** asthma claims (Figure 4).
- For diabetes **American Indian/Alaskan Native** members had the **highest number of Z-codes, at 12.2 per 10,000** diabetes claims (Figure 4).
- For both asthma and diabetes diagnosis, **white** members had the **lowest number, at 18.9 and 6.1 per 10,000**, respectively (Figure 4).

- Z-codes were **more commonly** used for **males than females** for both asthma and diabetes claims (Figure 5).

Figure 5. Number of Z-Codes per 10,000 Montana Medicaid Claims with Asthma or Diabetes as Primary Diagnosis, by Sex, 2016-2020

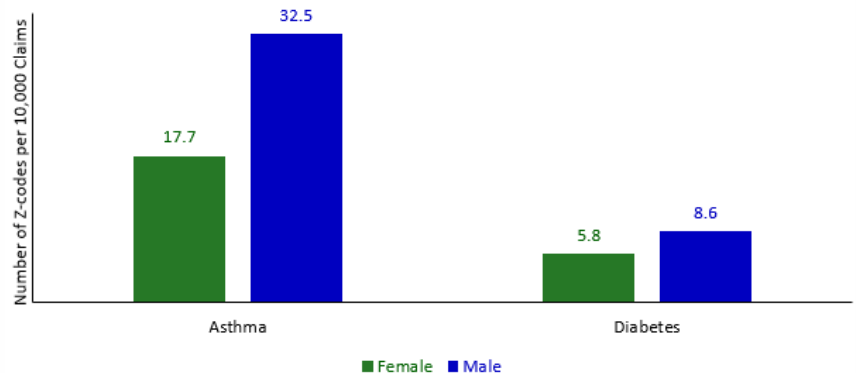


Figure 6: Asthma or Diabetes Primary Claims with Z-Codes per 10,000 Asthma and Diabetes Primary Claims, Montana Medicaid, 2016 –2020

Results

- Geographically, the number of claims with at least one Z-code attached per 10,000 asthma and diabetes claims from 2016 –2020 ranged from **3 to 19 per 10,000** per region (Figure 6).
- The rate of Z-code usage was highest in the following five regions: **2, 6, 8, 9, and 12.** (Figure 6).

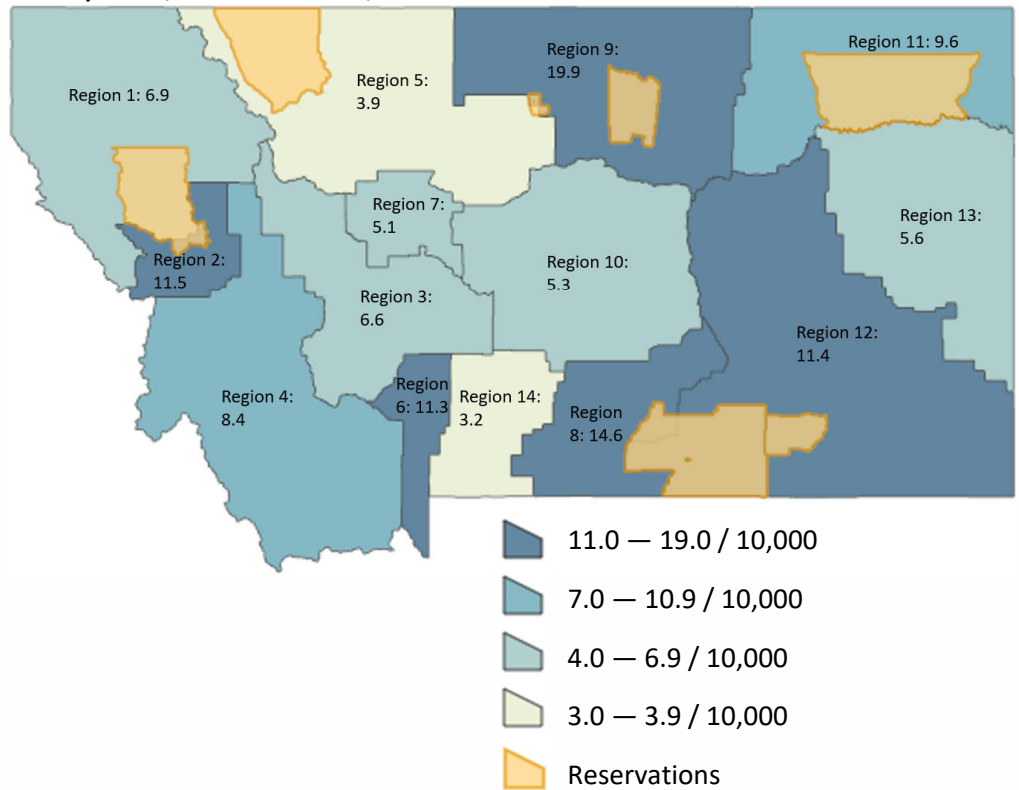
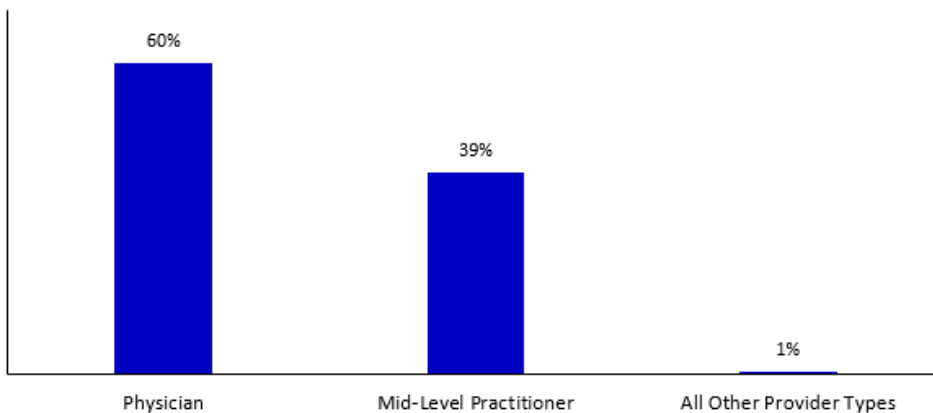


Figure 7. Percent of Z-Codes with Asthma or Diabetes as Primary Diagnosis, by Provider Type, Montana Medicaid, 2016 - 2020



- Nearly all (99%)** of all asthma or diabetes primary claims with Z-codes were submitted by either **physicians or mid level practitioners** (Figure 7).
- While **physicians** provided **60%** of Z-codes, **mid level practitioners** accounted for **1,383** of them (**39%**) (Figure 7).
- The remaining **1%** of Z-codes were submitted by **other provider types** including: **psychiatrist, ambulance services, laboratory care, and podiatrists.**



Discussion

- Z-codes are found in less than 1% of both asthma and diabetes Medicaid claims. Using these codes, when appropriate, should be a regular part of billing and coding in order to better document social determinants of health and how they impact patients' health needs.
- Child in Welfare Custody and Homelessness were the top two specific codes used for both asthma and diabetes claims, which are situations in which providers may want to code since they are unique and may require specific follow-up or other considerations with a care plan.
- Z-codes were more frequently used with Medicaid claims that were associated with children, males, and races other than white for both asthma and diabetes. These demographics may be more likely to experience social conditions that are influencing their asthma or diabetes care and management. Alternatively, providers may be more likely to consider Z-codes when working with patients in these demographic groups. More analyses may need to be done with more diagnoses.
- Since 2018, any clinician involved in a patient's care is able to document Z-codes in their medical record.⁵ However, the vast majority of Z-codes are still documented by either physicians or mid-level practitioners. Additional education can be given to other types of providers to increase their awareness and use of Z-codes.

Limitations

- Medicaid claims are intended solely for billing purposes and diagnosis information included on claims is intended to justify payment. For this reason, diagnosis data on claims may be biased.
- Since nearly all of the Z-codes were assigned by either a physician or a mid-level practitioner, this leads to a bias of demographics, location, and types of Z-codes assigned to visits such as general exams or emergency department visits as opposed to social services or specialist visits, whose visits may have different focuses. Additional analyses may need to be done with separate visit types to determine if a bias exists.
- This report is limited to Montana Medicaid Members, and does not represent Montanans outside of this population.



Clinical Recommendations

- Consider administering a screening tool to identify any SDOH that may be impacting your patients' health, some examples being [The Accountable Health Communities Health-Related Social Needs Screening Tool](#) by the Centers for Medicare & Medicaid Services or the [Social Needs Screening Tool](#) by the American Academy of Family Physicians. Online or privately administered surveys may help with patients not feeling comfortable answering the questions in person.
- Refer patients to appropriate programs to address any identified social needs.
- Increase documentation of Z-codes to support public health surveillance and efforts regarding SDOH.
- Encourage any eligible personnel to add Z-codes to patients' official medical record when appropriate.
- Adhere to the most current evidence-based research on methods of treating patients with SDOH, such as the CDC's [Tools for Putting Social Determinants of Health into Action](#).

For more information contact:

Mary Duthie

Asthma Epidemiologist

(406) 444-7304

Mary.Duthie@mt.gov

Citations

1. ICD - ICD-10-CM - CDC. <https://www.cdc.gov/nchs/icd/icd10cm.htm>. Accessed December 6, 2021.
2. About Social Determinants of Health (SDOH). <https://www.cdc.gov/socialdeterminants/about.html>. Accessed December 6, 2021.
3. Social Determinants of Health - Healthy People 2030 | health.gov. <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>. Accessed December 6, 2021.
4. Using Z Codes: The Social Determinants of Health (SDOH) Data . <https://www.cms.gov/files/document/zcodes-infographic.pdf>. Accessed February 1, 2022.
5. Resource on ICD-10-CM Coding for Social Determinants of Health . <https://www.aha.org/dataset/2018-04-10-resource-icd-10-cm-coding-social-determinants-health>. Accessed December 6, 2021.