

COLORADO END-OF-LIFE OPTIONS ACT, YEAR FIVE 2021 DATA SUMMARY, WITH 2017-2021 TRENDS AND TOTALS

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For more information, visit cdphe.colorado.gov/center-for-health-and-environmental-data/registries-and-vital-statistics/medical-aid-in-dying

Introduction

In 2016, Colorado voters approved Proposition 106, “Access to Medical Aid in Dying,” which amends Colorado statutes to include the Colorado End-of-Life Options Act, Article 48 of Title 25, Colorado Revised Statutes (C.R.S.). This Act allows an eligible terminally-ill individual with a prognosis of six months or less to live to request and self-administer medical aid-in-dying medication in order to voluntarily end his or her life; authorizes a physician to prescribe medical aid-in-dying medication to a terminally ill individual under certain conditions; and creates criminal penalties for tampering with a person’s request for medical aid-in-dying medication or knowingly coercing a person with a terminal illness to request the medication.

This Act requires prescribing physicians and health care professional dispensing aid-in-dying medication to report to the Colorado Department of Public Health and Environment (CDPHE) specific information outlined by the Act. This information is to be used to ensure documentation requirements outlined in the Act are met, as well as to make available to the public an annual statistical report. Rules for reporting were adopted by the Board of Health in 2017 (6 CCR 1009-4, Reporting and Collecting Medical Aid-in-Dying Medication Information).

This report is the fifth annual statistical report published per this Act, and describes Colorado’s participation in End-of-Life Options activities in 2021; incorporates updates to previously-published statistics; and includes summary statistics for the complete five-year period of participation, 2017-2021.

Data Collection and Statistics

Statistics presented in this report reflect patients for whom prescriptions for aid-in-dying medication were written; among those, patients to whom aid-in-dying medications were dispensed; and deaths among patients subsequent to prescription of aid-in-dying medication. Data used for this report are based on required reporting forms and death certificates received by CDPHE. More information about the reporting process and required forms as well as this annual report are available at: cdphe.colorado.gov/center-for-health-and-environmental-data/registries-and-vital-statistics/medical-aid-in-dying.

It is important to note that the Colorado End-of-Life Options Act does not authorize or require the Colorado Department of Public Health and Environment to follow up with physicians who prescribe aid-in-dying medication, patients, or their families to obtain information about use of aid-in-dying medication. Additionally, the Colorado



End-of-Life Options Act requires that the cause of death assigned on a patient’s death certificate be the underlying terminal illness. Thus, statistics in this report for deaths are based on all deaths identified among individuals prescribed aid-in-dying medication, whether or not they used this medication, and noting that death may have been caused by ingestion of medical aid-in-dying medication, the underlying terminal illness or condition, or some other cause.

Since the publication of past annual statistical reports, additional or amended reporting forms from health care providers concerning prescriptions in earlier years may have been submitted to CDPHE throughout 2021. More death certificates associated with patients who were prescribed aid-in-dying medication in the prior year were also received by CDPHE in 2021. This report incorporates this additional information received about patients participating in End-of-Life Options activities in prior years in addition to the new data for 2021.

Participation in End-of-Life Options Activities

In 2021, 222 patients received prescriptions for aid-in-dying medications under the provisions of the Colorado End-of-Life Options Act. This represents an 18% increase in the number of prescriptions compared to 2020. Among those prescribed aid-in-dying medication in 2021, CDPHE has received reports for 156 patients to whom aid-in-dying medication was dispensed. Also among those prescribed aid-in-dying medication, CDPHE has received death certificates for 189 patients through routine vital records registration. Note that not all of these deceased patients were dispensed aid-in-dying medication, and deaths may have been due to ingestion of aid-in-dying medication, the underlying terminal illness or condition, or other causes.

Prescriptions written in 2021 for aid-in-dying medication were provided by 71 unique Colorado physicians. Over the five-year period 2017-2021, prescriptions were provided by 198 unique Colorado physicians. In 2021, the median age of patients prescribed aid-in-dying medication was 73 years (minimum age was in the mid-20’s, maximum age was in the upper-90’s). Among patients prescribed aid-in-dying medication, the most common illnesses or conditions were malignant neoplasms (cancer), progressive neurological disorders (including amyotrophic lateral sclerosis /ALS, progressive supranuclear palsy, Parkinson’s disease and multiple sclerosis), major cardiovascular diseases (including heart disease, stroke and vascular diseases) and chronic lower respiratory diseases (including chronic obstructive pulmonary disease, or COPD) (Table 1).

Table 1. Underlying terminal illnesses/conditions among patients prescribed aid-in-dying medication, 2017-2021.

	2017		2018		2019		2020		2021		2017-2021 Total	
	Count	%	Count	%								
Total number of patients prescribed aid-in-dying medication	72	100	124	100	171	100	188	100	222	100	777	100
Malignant neoplasm - Total	47	65.3	79	63.7	104	60.8	125	66.5	136	61.3	491	63.2
Pancreas	8	11.1	9	7.3	13	7.6	14	7.4	22	9.9	66	8.5
Lung	11	15.3	9	7.3	13	7.6	15	8.0	21	9.5	69	8.9
Central nervous system	1	1.4	4	3.2	8	4.7	10	5.3	13	5.9	36	4.6
Breast	1	1.4	7	5.6	12	7.0	17	9.0	12	5.4	49	6.3
Colon and rectum	4	5.6	5	4.0	7	4.1	15	8	11	5	42	5.4

	2017		2018		2019		2020		2021		2017-2021 Total	
	Count	%	Count	%								
Kidney, bladder and urinary tract	1	1.4	3	2.4	3	1.8	1	0.5	7	3.2	15	1.9
Prostate	7	9.7	4	3.2	5	2.9	9	4.8	6	2.7	31	4.0
Esophagus	2	2.8	4	3.2	1	0.6	5	2.7	5	2.3	17	2.2
Melanoma	1	1.4	4	3.2	3	1.8	1	0.5	4	1.8	13	1.7
Lymphoma	0	0.0	0	0.0	2	1.2	0	0.0	4	1.8	6	0.8
Head and neck	6	8.3	5	4.0	8	4.7	5	2.7	3	1.4	27	3.5
Ovary	2	2.8	5	4.0	4	2.3	3	1.6	3	1.4	17	2.2
Bladder	0	0.0	0	0.0	1	0.6	2	1.1	3	1.4	6	0.8
Endometrium	0	0.0	3	2.4	5	2.9	5	2.7	2	0.9	15	1.9
Multiple myeloma	0	0.0	2	1.6	3	1.8	1	0.5	2	0.9	8	1.0
Stomach	0	0.0	1	0.8	3	1.8	1	0.5	2	0.9	7	0.9
Leukemia	0	0.0	1	0.8	2	1.2	1	0.5	1	0.5	5	0.6
Cervix	0	0.0	1	0.8	0	0.0	1	0.5	1	0.5	3	0.4
Bone	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	1	0.1
Bile duct	1	1.4	2	1.6	1	0.6	4	2.1	0	0.0	8	1.0
Liver	0	0.0	0	0.0	2	1.2	3	1.6	0	0.0	5	0.6
Other cancers	2	2.8	10	8.1	8	4.7	12	6.4	13	5.9	45	5.8
Progressive neurological disorders - Total	12	16.7	27	21.8	33	19.3	27	14.4	40	18.0	139	17.9
Amyotrophic lateral sclerosis	9	12.5	14	11.3	19	11.1	12	6.4	23	10.4	77	9.9
Progressive supranuclear palsy	0	0.0	5	4.0	1	0.6	4	2.1	3	1.4	13	1.7
Parkinson's disease	1	1.4	4	3.2	5	2.9	3	1.6	6	2.7	19	2.4
Multiple sclerosis	0	0.0	2	1.6	1	0.6	0	0.0	1	0.5	4	0.5
Other progressive neurological or neurodegenerative disorder	2	2.8	2	1.6	7	4.1	8	4.2	7	3.2	26	3.3
Cardiovascular disease	7	9.7	6	4.8	13	7.6	16	8.5	14	6.3	56	7.2
Chronic lower respiratory disease	5	6.9	7	5.6	9	5.3	12	6.4	10	4.5	43	5.5
Chronic liver disease	0	0.0	0	0.0	1	0.6	1	0.5	5	2.3	7	0.9
Interstitial lung disease	1	1.4	0	0.0	4	2.3	1	0.5	6	2.7	12	1.5
Cerebrovascular disease	0	0.0	2	1.6	1	0.6	2	1.1	2	0.9	7	0.9
Chronic kidney disease	0	0.0	2	1.6	2	1.2	0	0.0	1	0.5	5	0.6
Other illnesses/conditions	0	0.0	1	0.8	4	2.3	4	2.1	8	3.6	17	2.2



In 2021, aid-in-dying medications were dispensed by 24 unique pharmacists in Colorado. Medications dispensed included combinations of diazepam, digoxin, morphine sulfate, and propranolol (DDMP or DDMP2), substitution of propranolol with amitriptyline (DDMA), or DDMA with addition of phenobarbital (DDMAPh). Secobarbital has not been prescribed or dispensed in Colorado for medical aid-in-dying since 2018; while DDMAPh began to be used commonly in early 2021. (Table 2)

Table 2. Categories of medications dispensed to patients prescribed aid-in-dying medication, 2017-2021.

	2017		2018		2019		2020		2021		Total 2017-2021	
	Count	%	Count	%								
Total number of patients to whom aid-in-dying medication was dispensed	56	100	85	100	137	100	149	100	156	100	583	100
Secobarbital	23	41.1	26	30.6	0	0.0	0	0.0	0	0.0	49	8.4
DDMP/DDMP2 combination	32	57.1	59	69.4	87	63.5	79	53.0	32	20.5	289	49.6
DDMA combination	0	0.0	0	0.0	49	35.8	67	45.0	67	42.9	183	31.4
DDMAPh combination	0	0.0	0	0.0	0	0.0	3	2.0	57	36.5	60	10.3
Other (morphine sulfate alone, or in some other combination)	1	1.8	0	0.0	1	0.7	0	0.0	0	0.0	2	0.3

Characteristics of Patients Prescribed Aid-in-Dying Medication Who Have Died

Among patients who died following an aid-in-dying prescription written in 2021, the median duration of time between the date of prescription and date of death was 18 days (minimum of zero days, maximum of approximately eight months). Table 3 presents characteristics of patients who have been prescribed aid-in-dying medication, and for whom a death certificate was subsequently registered with CDPHE. Again, it is important to note that these statistics reflect all deaths identified among individuals prescribed aid-in-dying medication, whether or not they used this medication, and irrespective of whether their death was caused by ingestion of medication, the underlying terminal illness or condition, or some other cause.

Table 3. Summary of patients who died following prescription of aid-in-dying medication, 2017-2021.

	2017		2018		2019		2020		2021		Total 2017-2021	
	Count	%	Count	%								
Total number of decedents prescribed aid-in-dying medication	71	100	118	100	165	100	178	100	189	100	721	100
Sex												
Female	32	45.1	61	51.7	80	48.5	93	52.2	88	46.6	354	49.1
Male	39	54.9	57	48.3	85	51.5	85	47.8	101	53.4	367	50.9
Age group												
18-34	0	0.0	1	0.8	2	1.2	0	0.0	2	1.1	5	0.7
35-44	1	1.4	2	1.7	1	0.6	2	1.1	6	3.2	12	1.7
45-54	2	2.8	12	10.2	14	8.5	10	5.6	10	5.3	48	6.7
55-64	10	14.1	21	17.8	32	19.4	37	20.8	22	11.6	122	16.9

	2017		2018		2019		2020		2021		Total 2017-2021	
	Count	%	Count	%								
65-74	23	32.4	41	34.7	54	32.7	45	25.3	63	33.3	226	31.3
75-84	22	31.0	25	21.2	36	21.8	50	28.1	54	28.6	187	25.9
85+	13	18.3	16	13.6	26	15.8	34	19.1	32	16.9	121	16.8
Race/ethnicity												
White, non-Hispanic	67	94.4	110	93.2	159	96.4	170	95.5	176	93.1	682	94.6
White, Hispanic	3	4.2	7	5.9	2	1.2	3	1.7	7	3.7	22	3.1
Black/African American	0	0.0	1	0.8	1	0.6	1	0.6	0	0.0	3	0.4
Asian/Pacific Islander	1	1.4	0	0.0	3	1.8	4	2.2	5	2.6	13	1.8
Other or not stated	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	1	0.1
Marital status												
Married	35	49.3	60	50.8	73	44.2	84	47.2	81	42.9	333	46.2
Divorced	19	26.8	23	19.5	55	33.3	44	24.7	54	28.6	195	27
Widow/widower	16	22.5	21	17.8	22	13.3	40	22.5	39	20.6	138	19.1
Never been married	1	1.4	14	11.9	15	9.1	9	5.1	13	6.9	52	7.2
Unknown or not stated	0	0.0	0	0.0	0	0.0	1	0.6	2	1.1	3	0.4
Educational attainment												
8th grade or less	1	1.4	1	0.8	2	1.2	4	2.2	1	0.5	9	1.2
9th-12th grade, no diploma or no GED completed	1	1.4	1	0.8	3	1.8	7	3.9	4	2.1	16	2.2
High school graduate or GED completed	18	25.4	24	20.3	37	22.4	35	19.7	35	18.5	149	20.7
Some college credit but no degree	13	18.3	21	17.8	22	13.3	25	14.0	17	9.0	98	13.6
Associate's degree	9	12.7	7	5.9	14	8.5	19	10.7	16	8.5	65	9.0
Bachelor's degree	19	26.8	25	21.2	46	27.9	52	29.2	58	30.7	200	27.7
Master's degree	3	4.2	24	20.3	26	15.8	25	14.0	41	21.7	119	16.5
Doctorate or professional degree	7	9.9	15	12.7	15	9.1	9	5.1	17	9.0	63	8.7
Unknown	0	0.0	0	0.0	0	0.0	2	1.1	0	0.0	2	0.3
Region of residence (county location)												
Denver Metro Area	45	63.4	78	66.1	99	60.0	96	53.9	126	66.7	444	61.6
Other Front Range Counties	17	23.9	22	18.6	38	23.0	43	24.2	37	19.6	157	21.8
Other Counties	9	12.7	18	15.3	28	17.0	37	20.8	26	13.8	118	16.4
Unknown	0	0.0	0	0.0	0	0.0	2	1.1	0	0.0	2	0.3
Region of residence (population density)												
Frontier Counties	2	2.8	6	5.1	5	3.0	5	2.8	5	2.6	23	3.2
Rural Counties	6	8.5	11	9.3	20	12.1	28	15.7	18	9.5	83	11.5
Urban Counties	63	88.7	101	85.6	140	84.8	143	80.3	166	87.8	613	85.0
Unknown	0	0.0	0	0.0	0	0.0	2	1.1	0	0.0	2	0.3



	2017		2018		2019		2020		2021		Total 2017-2021	
	Count	%	Count	%								
Place of death												
Residence	59	83.1	102	86.4	131	79.4	152	85.4	162	85.7	606	84.0
Nursing home/long-term care facility	9	12.7	6	5.1	12	7.3	11	6.2	18	9.5	56	7.8
Hospice facility	0	0.0	3	2.5	11	6.7	8	4.5	6	3.2	28	3.9
Hospital inpatient	0	0.0	1	0.8	3	1.8	1	0.6	1	0.5	6	0.8
Other or unknown	3	4.2	6	5.1	8	4.8	6	3.4	2	1.1	25	3.5
Hospice enrollment status												
Under hospice care	63	88.7	101	85.6	130	78.8	155	87.1	163	86.2	612	84.9
Not under hospice care or unknown	8	11.3	16	13.6	35	21.2	23	12.9	26	13.8	108	15.0
Unknown	0	0.0	1	0.8	0	0.0	0	0.0	0	0.0	1	0.1

'Denver Metro Area' includes Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas and Jefferson Counties.

'Other Front Range' includes El Paso, Larimer, Pueblo and Weld Counties.

'Rural counties' represent a non-metropolitan county with no cities over 50,000 residents.

'Frontier counties' represent counties with population density of 6 or fewer residents per square mile.

'Region of residence (population density)' based on current designations from the Colorado Rural Health Center, <https://coruralhealth.org/resources/maps-resource>.

'Place of death - Other/unknown' includes outpatient facilities, emergency departments or unspecified locations.

Monitoring Compliance with Reporting Requirements

To comply with the Colorado End-of-Life Options Act, physicians who prescribe aid-in-dying medication, and those health care providers who dispense such medication, must submit documentation to CDPHE per rules promulgated by the Colorado Board of Health.

Physicians who prescribe aid-in-dying medication must submit:

- Attending/prescribing physician form
- Patient's completed written request for medical aid-in-dying medication
- Written confirmation of mental capacity from a licensed mental health provider (if applicable)
- Consulting physician's written confirmation of diagnosis and prognosis

Health care providers who dispense aid-in-dying medication must submit:

- Medication dispensing form

Table 4 contains a summary of documentation received by CDPHE concerning patients who were prescribed aid-in-dying medication. This information is based on reporting forms and supplemental documentation received by CDPHE as of February 1, 2022.

Table 4. Documentation received for patients participating in the Colorado End-of-Life Options Act, 2017-2021.

Form/Document	2017	2018	2019	2020	2021	Total 2017-2021
	Count	Count	Count	Count	Count	Count
Attending/prescribing physician form	63	108	147	160	189	667
Patient's completed written request	50	89	128	154	184	605
Mental health provider's confirmation	1	0	1	3	0	5
Consulting physicians written confirmation	30	85	127	153	184	579
Medication dispensing form	56	85	137	149	156	583
Death certificate	71	118	165	178	189	721

While reporting of the required documentation (including prescribing forms, patients' written requests, consulting physicians' written confirmations, and mental health provider confirmation when applicable) may be incomplete, attending/prescribing forms received contained physicians' signed attestations that all requirements of the Colorado End-of-Life Options Act have been met, and that required documentation is complete and contained in patients' records. Efforts continue to educate physicians and other health care providers about reporting requirements.

Additional instructions for reporting, including specific regulations and forms, and past reports are available on the Colorado Medical Aid in Dying website at <https://cdphe.colorado.gov/center-for-health-and-environmental-data/registries-and-vital-statistics/medical-aid-in-dying>.

Confidentiality

Colorado's End-of-Life Options Act states that the information reported to CDPHE is not a public record and is not available for public inspection. To comply with that statutory mandate, CDPHE will not disclose any information that identifies patients, physicians, pharmacists, family members, witnesses or other participants in activities covered by the Colorado End-of-Life Options Act. The information presented in this report is limited to such categories within a reporting field to ensure that confidentiality is preserved.