

Analysis of 2024 California Correctional Health Care Services Mortality Reviews

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I. Introduction

In April 2006, medical care in California Department of Corrections and Rehabilitation (CDCR) prisons was placed under Federal receivership after the courts found violations of incarcerated persons' Eighth Amendment rights to adequate care. At the time, conditions were so deficient that roughly one person a week was estimated to die from malpractice or neglect.

The Receivership has since transformed prison health care. Beginning in 2015, institutions gradually returned to CDCR management under the Receiver's oversight. Delegations paused during the COVID-19 pandemic but resumed in 2022. By the end of 2024, 31 institutions had been delegated back to CDCR authority. Six institutions remained to be delegated. A [CCHCS fact sheet](#) summarizes this timeline and the list of delegated institutions.

Also in 2015, the system adopted the Complete Care Model, based on the Patient-Centered Health Home framework, as its standard for health care delivery. In 2020, CCHCS and CDCR issued a new [joint vision and mission](#) emphasizing restorative justice, reentry, and public safety.

Vision

We enhance public safety and promote successful community reintegration through education, treatment, and active participation in rehabilitative and restorative justice programs.

Mission

To facilitate the successful reintegration of the individuals in our care back to their communities equipped with the tools to be drug-free, healthy, and employable members of society by providing education, treatment, rehabilitative, and restorative justice programs, all in a safe and humane environment.

In 2017, the statewide implementation of the Electronic Health Records System was completed.

In 2020, the Integrated Substance Use Disorder Treatment Program (ISUDTP), a state-of-the-art program for identifying and treating substance use disorders, was introduced system wide.

In 2023, the concept of a "California Model" was introduced, integrating Scandinavian best practices to address incarceration and prison working-condition challenges. Its redesigned reentry program will be designed to lower recidivism, grounded in four pillars: Dynamic Security, Normalization, Peer Support, and Trauma-Informed Care.

This report presents the demographics of California's prison population, outlines the mortality review process, analyzes causes of death, and examines mortality trends. It highlights opportunities for systemic improvement and reviews quality initiatives affecting mortality outcomes.

Now in its 18th year, this annual report builds on prior CCHCS mortality reviews, available at cchcs.ca.gov/reports/

II. The California State Prison Population in 2024

Population Trends: The Receivership was established in 2006 when California's prison population totaled 171,310. Since then, a combination of federal court mandates, state legislation, and executive actions has significantly reduced the incarcerated population:

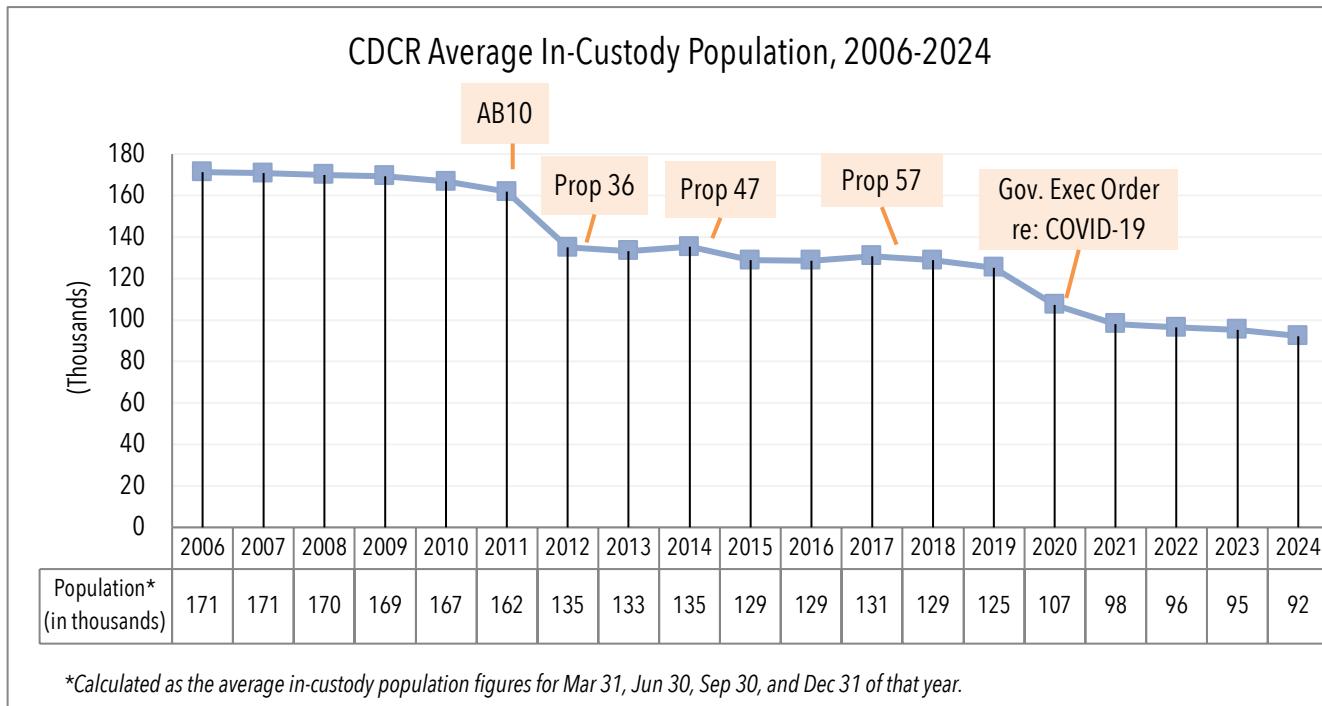
- **Assembly Bill 109 (2011):** Implemented an "Alternate Custody Program," for those convicted of nonviolent offenses serving life sentences.
- **Proposition 36 (2012 - Three Strikes Reform Act):** Allowed re-sentencing for nonviolent offenders serving life sentences.
- **Proposition 47 (2014):** Reclassified certain theft and drug possession felonies as misdemeanors.
- **Proposition 57 (2017):** Expanded early release opportunities for good behavior.
- **COVID-19 Executive Order (2020):** Temporarily suspended the transfer of incarcerated persons from county jails to state prisons.

2024 Quarter-End Populations:

- March 31: 93,220
- June 30: 92,582
- September 30: 92,021
- December 31: 91,358

The 2024 quarter-end average population was 92,295 representing a 46% reduction from 2006. Figure 1 provides an annotated graph of California's prison population from 2006 to 2024.

Figure 1. California State Prison Population 2006-2024



This annotated run chart illustrates the significant decrease in prison population, annotated with the timing of related governmental actions.

Age: Individuals under 45 represented three-fifths (59.9%) of the total prison population. Incarcerated persons 55 and older comprised 20.8% of the CDCR in-custody population in December 2024, compared to 13% in Dec 2015 ([Population Data Points, CDCR Public Dashboard](#)).

Gender: In December 2024, 86,545 (94.7%) of the 91,358 people incarcerated were male; 4,032 (4.4%) were female; and 781 (0.9%) were non-binary ([CDCR Monthly Total Population Report for December 2024](#)).

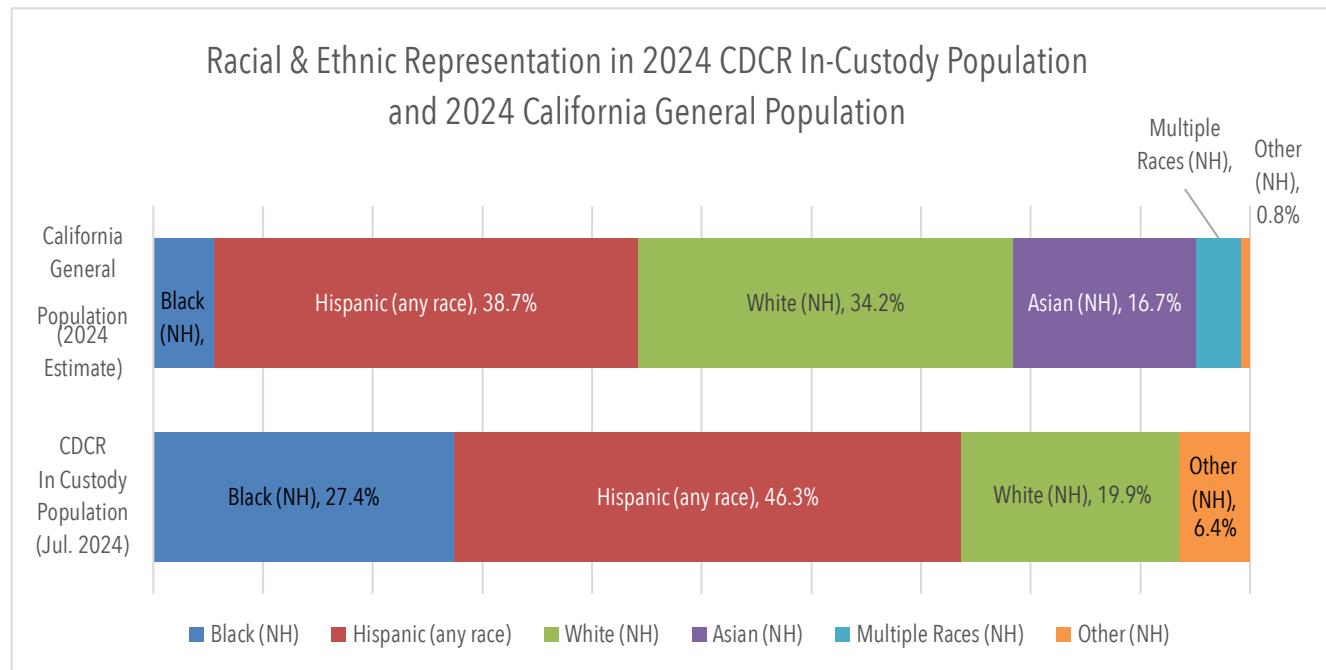
Race/Ethnicity: The in-custody population in December 2024 was 27.4% Black, 46.3% Hispanic, 19.9% White, and 6.4% other races ([Population Data Points, CDCR Public Dashboard](#)).

The [California Department of Finance Demographic Research Unit](#) estimated the 2024 California general adult (18+) population to be 5.5% Black Non-Hispanic, 38.7% Hispanic Any Race, 34.2% White Non-Hispanic, 16.7% Asian Non-Hispanic, 4.1% Multiracial Non-Hispanic, and 0.8% other single races non-Hispanic (including American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander).

Figure 2 shows the overrepresentation of California's Black and Hispanic populations in its prison system. Black overrepresentation is the most significant, comprising 5.5% of the general population

and 27.4% of the prison population. Hispanics are also overrepresented, comprising 38.7% of the general population and 46.3% of the prison population.

Figure 2. Racial/Ethnic Representation in California General Population and CDCR In-Custody Population



A stacked bar chart comparing racial/ethnic representation in California's general and prison populations as described in the narrative. NH=Non-Hispanic.

III. Mortality Review Purpose and Process

The Mortality Review Unit (MRU) evaluates every patient death in California prisons to reduce harm and identify opportunities for improvement (OFIs) in patient safety, healthcare quality, and outcomes. When a death occurs in a prison, the institution generates a preliminary report summarizing clinical events, emergency response, and a provisional cause of death, which is sent to the MRU for independent review.

The review process includes a comprehensive examination of the patient's movement within the prison system, relevant clinical records, autopsy and toxicology reports when available, and other pertinent information. A nurse reviewer assesses at least six months of the patient's medical history, including triage, evaluation, timeliness of care, adherence to evidence-based standards, responses to abnormal labs and imaging, emergency responses, and substance use or mental health history. Opportunities for improvement in healthcare systems or processes are also identified.

A medical provider reviewer evaluates the immediate and underlying causes of death, contributing conditions, and additional OFIs. Each death is classified as expected or unexpected, with or without OFIs. Suicides or suspected suicides receive additional review from the Suicide Prevention and Response Focused Improvement Team (SPRFIT).

All cases are discussed at the Headquarters Mortality Review Discussion Group (MRDG), where consensus is reached on causes of death, contributing factors, and OFIs. The MRDG also identifies potential quality issues (PQIs) involving contracted healthcare providers. Final reviews are shared with institutional and regional healthcare leadership and recorded in the Electronic Health Care Incident Reporting (eHCIR) system. Selected cases are further referred to peer review bodies such as the Nursing Professional Practices Committee (NPPC) and the Health Care Incident Review Committee (HCIRC).

IV. 2024 Study Findings

A. Causes of Death

In 2024, there were 409 deaths among incarcerated persons (Table 1).

Table 1. Causes of Death Among California Incarcerated Persons, 2024

Case Count	Category and Causes
78	Drug Overdose Fentanyl (52): alone (24); fentanyl, methamphetamine (6); fentanyl, ethanol (4); fentanyl, buprenorphine (2); fentanyl, heroin (2); fentanyl, acetyl fentanyl, heroin, xylazine (1); fentanyl, parafluorofentanyl, carfentanyl, levetiracetam (1); fentanyl, 4ANPP, morphine (1); fentanyl, acetyl fentanyl, norfentanyl, morphine sulphate (1); fentanyl, acetyl fentanyl, heroin, xylazine (1); fentanyl, fluorofentanyl, heroin, methamphetamine (1); fentanyl, fluorofentanyl, methamphetamine (1); fentanyl, acetyl fentanyl, methamphetamine (1); fentanyl, methamphetamine, heroin, morphine (1); fentanyl, olanzapine (1); fentanyl, olanzapine, heroin (1); fentanyl, morphine (1); fentanyl, parafluorofentanyl (1); fentanyl, xylazine (1); unspecified drugs (9); methamphetamine (6); opioid (3); multiple unspecified agents (2); buprenorphine (1); cocaine (1); buspirone, clozapine, citalopram, lamotrigine (1); heroin, ethanol (1); methamphetamine, opioids (1); synthetic cannabinoid (1)
77	Cancer lung (11); pancreas (7); bladder (6); colon (6); prostate (6); stomach (5); multiple myeloma (4); lymphoma, B cell (3); leukemia, acute myelogenous (3); leukemia,

Case Count	Category and Causes
	acute lymphoblastic (2); breast (2); esophagus (2); glioma, brain (2); neuroendocrine (2); pharyngeal (2); rectum (2); spindle cell sarcoma (2); squamous cell carcinoma (2); adrenal gland (1); gallbladder (cholangiocarcinoma) (1); gastrointestinal stromal tumor (1); kidney (1); larynx (1); malignant melanoma (1); sarcoma leg (1); testis (1); unknown primary (1)
60	Cardiovascular Disease sudden cardiac arrest (15); congestive heart failure (14); sudden cardiac arrest with known underlying cardiac disease (14); acute myocardial infarction (10); aortic aneurysm rupture (2); aortic arch dissection (1); ascending aorta dissection (1); cardiac tamponade (1); cardiomyopathy (1); coronary artery malformation (1)
36	Homicide homicide (35); homicide by custody (1)
32	Infectious Disease Sepsis (16): <i>secondary to pneumonia</i> (4); <i>secondary to urinary tract infection</i> (4); <i>secondary to aortic valve vegetation</i> (1); <i>secondary to epidural abscess</i> (1); <i>secondary to group B strep</i> (1); <i>secondary to infected aortic valve fistula</i> (1); <i>secondary to influenza A pneumonia</i> (1); <i>secondary to lumbar epidural abscess</i> (1); <i>secondary to pulmonary vasculitis</i> (1); <i>secondary to thigh abscess</i> (1); infective endocarditis (7); pneumonia (4); coccidioidomycosis (2); COVID-19 (2); peritonitis secondary to perforated gastric ulcer (1)
29	Suicide asphyxia (26); exsanguination (3)
24	Advanced Liver Disease hepatocellular carcinoma (12); end stage liver disease (cirrhosis) (10); autoimmune hepatitis (1); sclerosing cholangitis (1)
12	Neurological Disease dementia (7); Parkinson disease (2); amyotrophic lateral sclerosis (1); malignant catatonia (1); seizure disorder (1)
12	Pulmonary interstitial pulmonary fibrosis (6); chronic obstructive pulmonary disease (3); interstitial lung disease (2); pneumonia, aspiration (1)

Case Count	Category and Causes
11	Circulatory System aortic dissection (2); pulmonary embolism (2); aortic occlusion (1); hemoperitoneum secondary to splenic rupture (1); hemorrhagic shock (1); hemorrhagic shock secondary to iliac artery hemorrhage post operative (1); sudden cardiac arrest (1); sudden cardiac arrest secondary to hypertensive emergency (1); UGI hemorrhage duodenal ulcer (1)
9	Gastrointestinal Disease intestinal perforation (2); upper gastrointestinal hemorrhage (2); gastric outlet obstruction (1); incarcerated hernia (1); ischemic bowel (1); sigmoid volvulus, post operative perforation (1); toxic megacolon secondary to Crohn disease (1)
8	Cerebrovascular Disease stroke, ischemic (4); stroke, hemorrhagic (2); subarachnoid hemorrhage secondary to a ruptured aneurysm (1); subdural hematoma (1)
7	Accidental Injury accidental aspiration (2); accidental injury, subdural hematoma (2); accidental flecainide overdose (1); iatrogenic anemia post spinal surgery, patient refused transfusion (1); iatrogenic bowel injury post operative (1)
6	Endocrine/Metabolic/Nutrition/Immunity diabetic ketoacidosis (2); adrenal insufficiency (1); diabetes mellitus (1); diabetic hypoglycemia (1); failure to thrive (1)
3	Auto Immune autoimmune hemolytic anemia (1); systemic lupus erythematosus (1); Wegener granulomatosis (1)
3	Unknown
2	Renal Disease end stage renal disease (1); sepsis secondary to urinary tract infection (1)
409	Grand Total

Drug overdose was again the leading cause, responsible for 78 deaths. Fentanyl was involved in two-thirds of cases (52 of 78), either alone (24 cases) or in combination with other drugs (28 cases).

Cancer was the second leading cause, with 77 deaths. Lung cancer (11 cases) accounted for 14% of all cancer deaths.

Cardiovascular disease caused 60 deaths. Roughly half (29 cases) were due to sudden cardiac death in patients with or without known underlying heart disease. Other causes included congestive heart failure (14), myocardial infarction (8), aortic aneurysm (2), arrhythmia (2), and single cases of cardiomyopathy, aortic arch dissection, ascending aortic rupture, and cardiac tamponade.

Homicides caused 36 deaths, and suicides caused 29 deaths.

Infectious diseases accounted for 32 deaths: sepsis (16), infective endocarditis (7), pneumonia (4), coccidioidomycosis and COVID-19 (2 each), and peritonitis (1).

Advanced or end-stage liver disease (ESLD) caused 24 deaths, half from liver cancer (12). Other causes included hepatitis C cirrhosis (9), and single cases of alcoholic cirrhosis, autoimmune hepatitis, and sclerosing cholangitis.

Circulatory system disease caused 11 deaths, including pulmonary embolism (2) and aortic dissection (2).

Neurological disease caused 12 deaths, led by dementia (7) and Parkinson's disease (2).

Pulmonary disease caused 12 deaths, including pulmonary fibrosis (6) and chronic obstructive pulmonary disease (3).

Gastrointestinal disease caused 9 deaths, including intestinal perforation (3, one iatrogenic) and upper GI hemorrhage (2).

Cerebrovascular disease caused 8 deaths, including ischemic stroke (4) and hemorrhagic stroke (2).

There were 7 accidental deaths: falls (2), aspiration (2), and surgical injury (2). One death was caused by accidental overdose of flecainide.

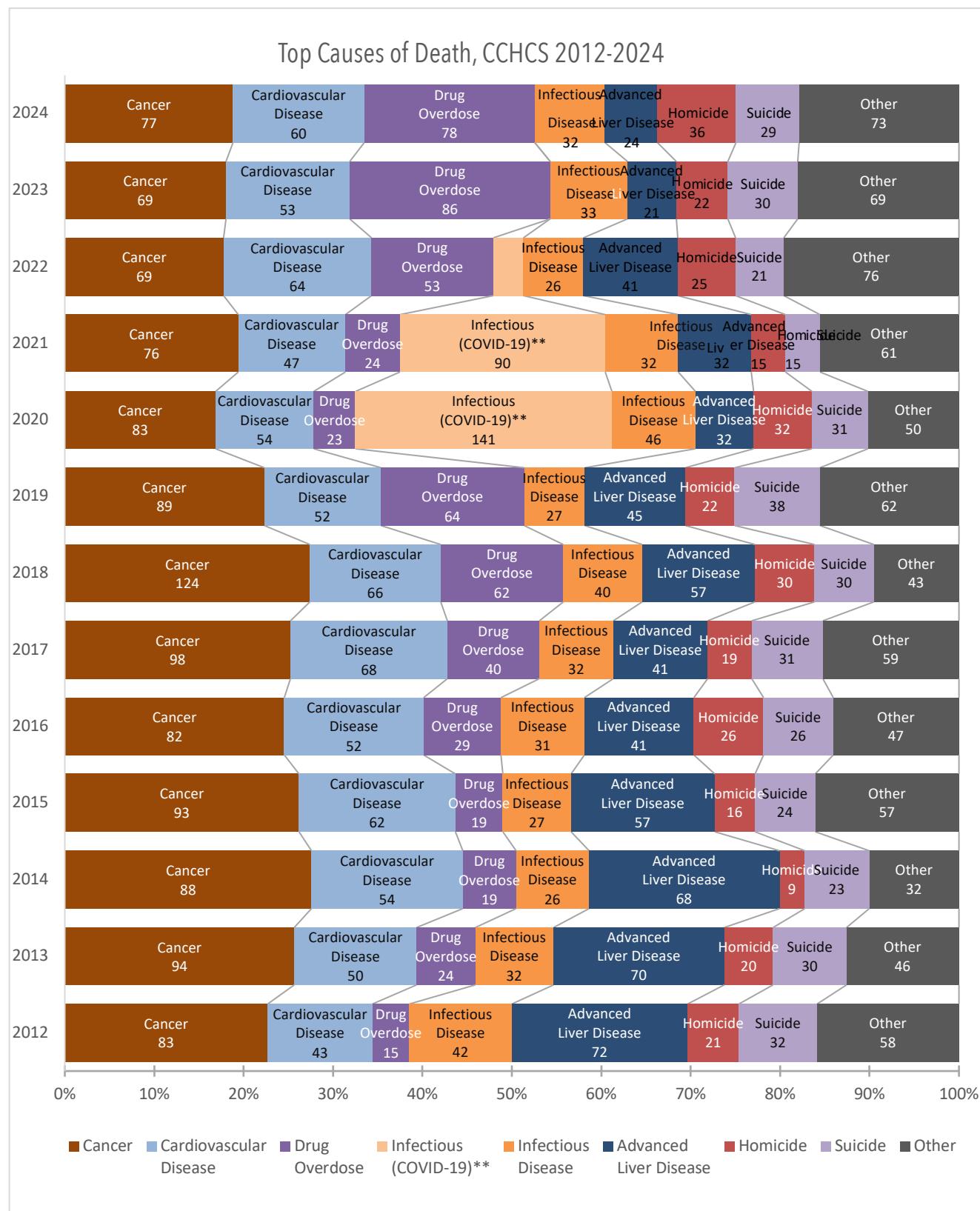
Endocrine, metabolic, or nutritional disease caused 6 deaths, 4 from complications of diabetes mellitus.

Two deaths were caused by end-stage renal disease, and 2 others from autoimmune disease.

There were 3 deaths of unknown cause.

Figure 3 shows the top causes of death in the California prisons from 2012 through 2024. Infectious Disease includes Pneumonia, Sepsis, and HIV/AIDS, which were tracked separately in reports prior to 2015. COVID-19 was its own category from 2020 through 2022, then combined with Infectious Disease in 2023.

Figure 3. Top Causes of Death Among California Incarcerated Persons, 2012-2024



Trends in top causes of death:

- Drug overdose was the leading cause of death for the second year in a row, followed by cancer and cardiovascular disease.
- COVID-19, the leading cause of death in 2020–2021, fell dramatically to only one death in 2023 and two in 2024 following widespread adoption of the COVID-19 vaccination.
- Homicide rose to become the fourth leading cause in 2024, followed by infectious disease and suicide.
- Advanced liver disease, once the second leading cause (2007, 2009–2014), fell to seventh place in 2023 and 2024.

B. Ages at Death

The median age of the 395 male incarcerated persons who died in 2024 was 58 years; the average age of the 14 deceased female incarcerated persons was 47 years (Table 2). The youngest death was at age 21; the oldest at age 90.

In 2024, drug overdoses, suicides, and homicides caused death at an average age of 42 while the average age of death by all other causes was 64.

Table 2. Minimum, Maximum, Average and Median Ages of Decedents, CCHCS, 2024.

	Minimum Age	Maximum Age	Average Age	Median Age
All Deaths	21	90	56.1	58
Female Decedents	28	80	51.2	47
Male Decedents	21	90	56.3	58
Drug Overdose/ Homicide/Suicide	21	80	42.1	41
All Other Causes	23	90	64.2	58

Minimum, maximum, average and median ages of 2024 California prison decedents by gender and cause grouping.

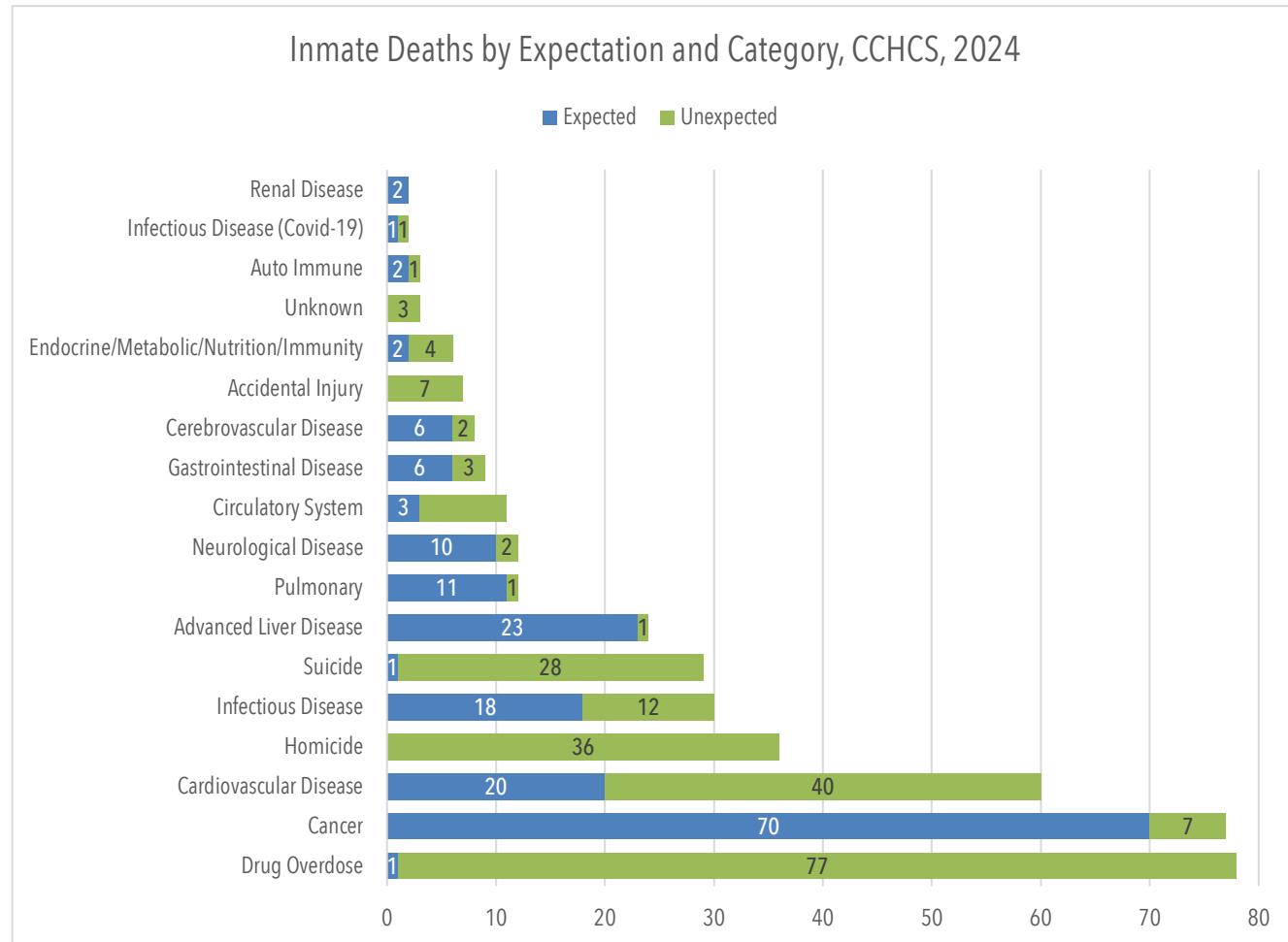
C. Expected and Unexpected Deaths

An *Expected Death* is medically anticipated and related to the natural course of a patient's illness or condition. An *Unexpected Death* is unanticipated and unrelated to disease progression.

In 2024, there were 176 expected deaths, largely from chronic illnesses such as cancer, end-stage liver disease, and advanced cardiovascular, pulmonary, neurologic, and gastrointestinal disease. There were 233 unexpected deaths, including suicides, homicides, and drug overdoses. Sudden cardiac arrest, acute myocardial infarction, and stroke were also unexpected. Rare cases of suicide and homicide were judged to be expected because the patients survived for a significant period of time after the initial event.

Figure 4 compares unexpected and expected deaths in each category.

Figure 4. Deaths by Expectation and Category, CCHCS 2024



A horizontal stacked bar chart showing the breakdown of expected and unexpected deaths for each categoric cause of death.

D. Discussion of mortality trends

This section reviews overall and key-area mortality trends. Comparative data through 2019 are from the U.S. Bureau of Justice Statistics (BJS) , [Mortality in State and Federal Prisons, 2001-2019 – Statistical Tables](#), Table 4 (NCJ 255970, December 2021). Other sources are noted where used.

1. CCHCS mortality rates

The following table shows the number of deaths and the corresponding mortality rates in California prisons from 2006-2024, compared to mortality rates in all U.S. state prisons.

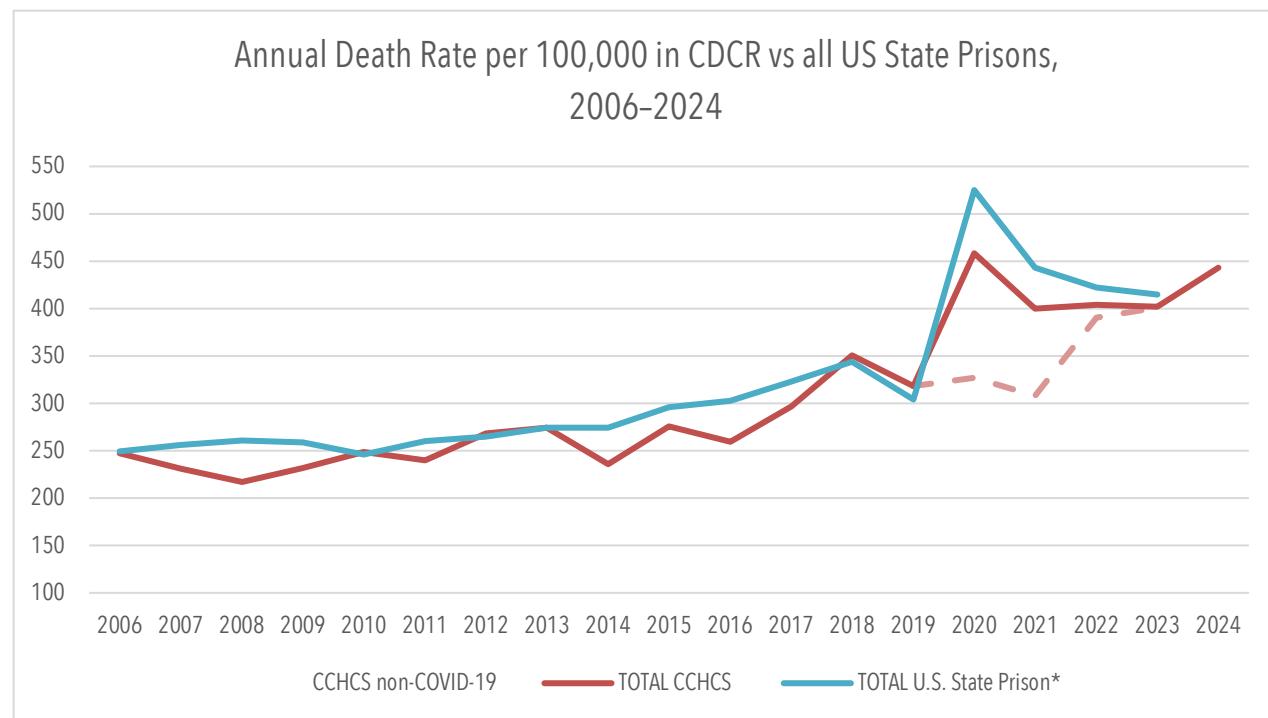
Table 3. Annual Mortality Rates Among California and U.S. State Prisons, 2006-2024

YEAR	Number of Deaths		Population CDCR	Death Rate per 100,000	
	CDCR	CDCR		CDCR	U.S. State Prisons*
2006	424		171,310	248	249
2007	395		170,786	231	258
2008	369		170,022	217	261
2009	393		169,459	232	259
2010	415		166,700	249	246
2011	388		161,843	240	260
2012	362		134,929	268	266
2013	366		133,297	275	274
2014	319		135,225	236	276
2015	355		128,824	276	298
2016	334		128,705	260	304
2017	388		130,807	297	327
2018	452		128,875	351	347
2019	399		125,270	319	330
2020	(all) 492 (COVID-19) 141 (non-COVID-19) 351		107,347	458 131 327	525
2021	(all) 392 (COVID-19) 90 (non-COVID-19) 302		98,077	400 92 308	443

YEAR	Number of Deaths CDCR	Population CDCR	Death Rate per 100,000 CDCR	Death Rate per 100,000 U.S. State Prisons*
2022	389 (COVID-19) 13 (non-COVID-19) 376	96,341	404 13 390	422
2023	383 (COVID-19) 1	95,267	402 1	415
2024	409 (COVID-19) 2	92,295	443 2	NA

*U.S. figures may have been revised by BJS from previously published statistics. Years 2007-2019 from [Mortality in State and Federal Prisons, 2001-2019 – Statistical Tables | December 2021](#); NCJ 300953. Years 2020 and later from Tables 1 and 9, "Prisoners in [2020, 2021, 2022, 2023] – Statistical Tables", NCJ 302776, 305125, 307149, 310197; U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

Figure 5. Annual Death Rates per 100,000, CCHCS vs all U.S. State Prisons 2006-2024



A line chart showing rising trends in annual death rates; based on the numbers in the table above.

The 2024 mortality rate of 443 is the second highest since the onset of the Receivership; the highest being 2020, when the onset of COVID-19 brought the rate to 458.

2. Drug overdose

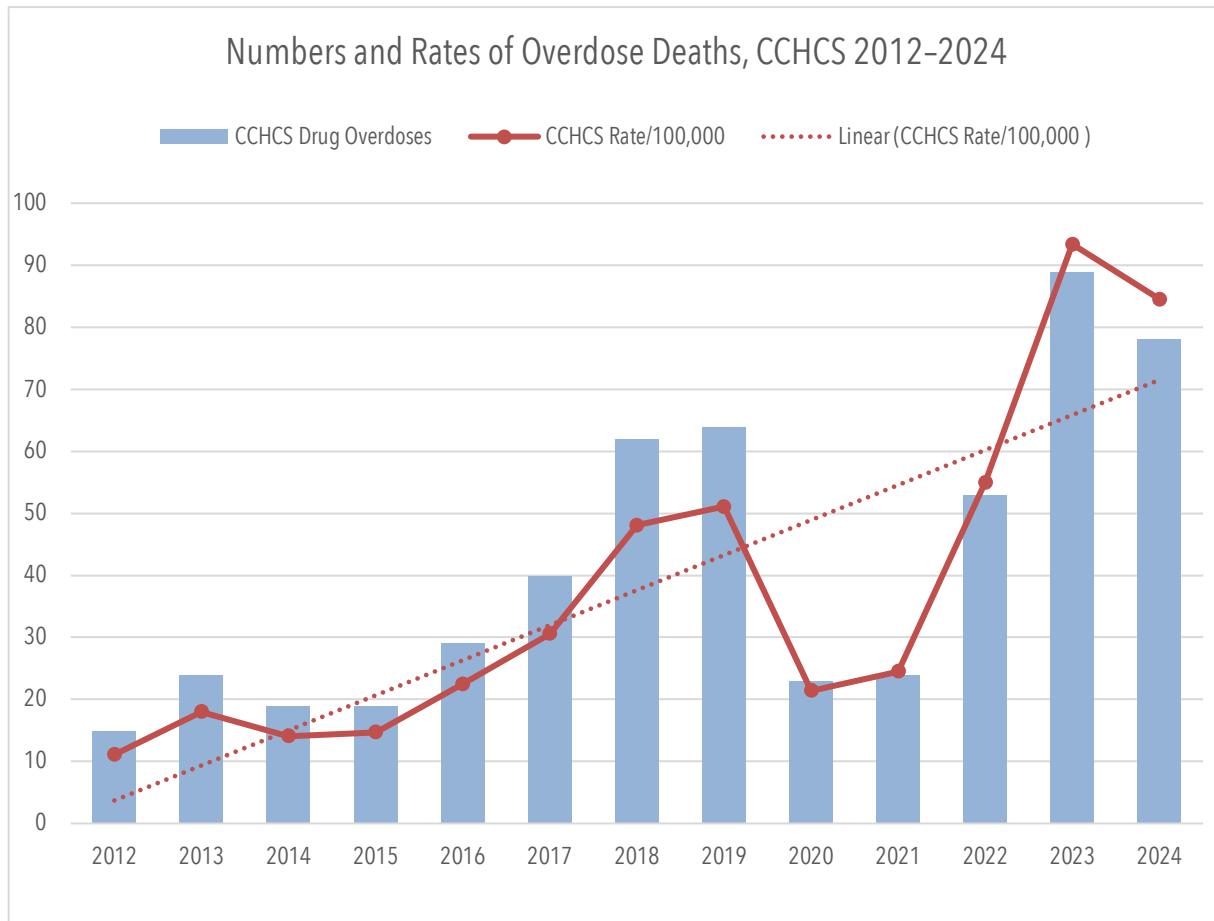
There were 78 overdose deaths in 2024, for a mortality rate of 85/100,000, making overdose again the leading cause of death, as it was in 2023.

Table 4 and Figure 6 show overdose deaths and rates in California prisons (2012-2024). Note that where prior reports included overall U.S. State Prison figures as comparators, they are no longer included due to a lack of availability for years after 2019.

Table 4. Numbers and Rates of Overdose Deaths, CCHCS 2012-2024

Year	CCHCS Drug Overdoses	CCHCS Rate/100,000
2012	15	11
2013	24	18
2014	19	14
2015	19	15
2016	29	23
2017	40	31
2018	62	48
2019	64	51
2020	23	21
2021	24	25
2022	53	55
2023	89	93
2024	78	85

Figure 6. Numbers and Rates of Overdose Deaths, CCHCS 2012-2024



A combination chart illustrates a dramatic rise in drug overdose deaths, despite a significant dip in the years 2020 and 2021.

Despite temporary declines in 2020-2021, overdoses have risen sharply.

Fentanyl was involved in 66.7% of overdose deaths in 2024 (24 cases alone, 28 in combination with other agents). Methamphetamine was implicated by itself in six overdose deaths, and in 12 additional cases combined with fentanyl and/or other drugs. In nine cases, no drug was identified, though clinical evidence supported overdose.

Two prisons accounted for 26 deaths (33% of the total). At 21 other institutions, overdose deaths ranged from one to eight each. Across the remaining ten prisons, no overdose deaths were reported. A single prison reported 33 overdoses over the two-year period 2023-2024, accounting for 20% of the total overdose deaths in those two years.

This rise in the drug overdose death rate mirrors national trends. Drug overdose is now the leading cause of death in the U.S. population aged 18-45, with fentanyl involved in 70% of cases.

According to the Receiver's 58th Triannual Report, submitted in February 2025, 34% of incarcerated persons have opioid use disorder, 29% stimulant use disorder, and 22% alcohol use disorder. The Integrated Substance Use Disorder Treatment Program (ISUDTP) provides screening, Medication-Assisted Treatment (MAT), behavioral interventions, and reentry support. Naloxone is widely available to staff and patients.

By December 2024, 18,727 patients were receiving MAT, up from 16,649 in 2023. However, two factors limiting MAT's potential impact are patient refusals and nonadherence to treatment.

Of the 78 overdose deaths in 2024:

- **Screening:** not done (3), declined (3), negative (19), positive (53)
- **ISUDT Program Referrals:** Of 53 positive screenings, five were eligible but not referred, four refused to participate in ISUDT, and 44 enrolled in ISUDT.
- **MAT:** Of 38 known MAT-eligible patients, 17 refused treatment and 21 enrolled in MAT. Of the 21 enrolled, 17 were nonadherent at time of death (17), four were adherent at time of death.

The ISUDTP has been detailed in prior annual reports. Despite its comprehensive design and implementation, overdose mortality remains high. Overdoses temporarily declined during the pandemic when MAT was introduced but returned to pre-pandemic levels in 2022. By 2023-2024, overdose—primarily fentanyl-related—was again the leading cause of death.

Although the number of overdose deaths decreased slightly in 2024, overdose remained the top cause of mortality.

3. Lung cancer

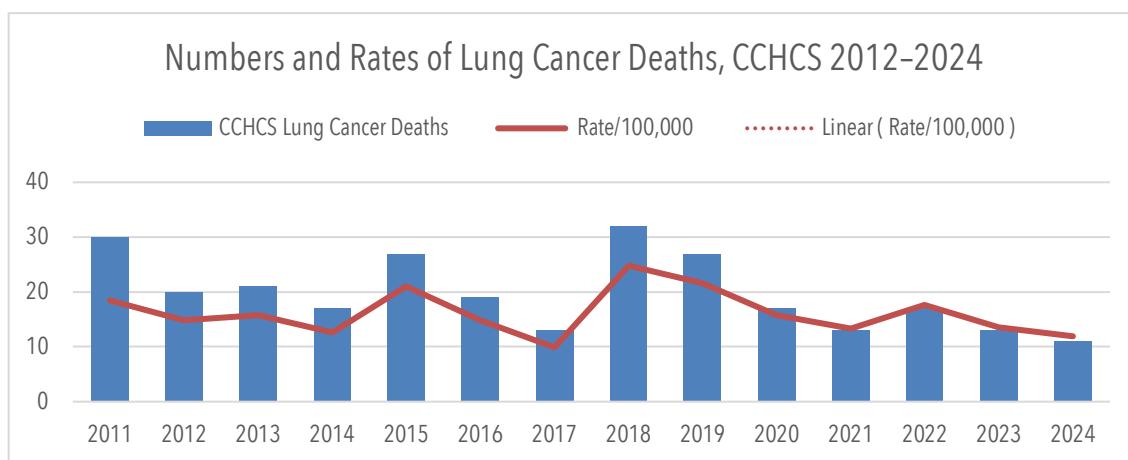
Lung cancer has long been the leading cause of cancer death, both within CCHCS and in the general population. In 2024, lung cancer accounted for 14% of cancer deaths (11 of 77), with a mortality rate of 12 per 100,000.

Table 5 and Figure 7 present lung cancer deaths and mortality rates from 2012 through 2024.

Table 5. Numbers and Rates of Lung Cancer Deaths, CCHCS 2012-2024

Year	CCHCS Lung Cancer Deaths	Rate/100,000
2012	20	15
2013	21	16
2014	17	13
2015	27	21
2016	19	15
2017	13	10
2018	32	25
2019	27	22
2020	17	16
2021	13	13
2022	17	18
2023	13	14
2024	11	12

Figure 7. Numbers and Rates of Lung Cancer Deaths, CCHCS 2012-2024



This chart illustrates the numbers from the previous table, with a recent downward trend and relatively flat linear trend over the full period.

CCHCS adopted the U.S. Preventive Services Task Force recommendation in 2021 to screen heavy smokers aged 50-80 annually with low-dose CT scans. Despite three years of implementation, no significant decline in lung cancer mortality has yet been observed.

4. Cardiovascular disease

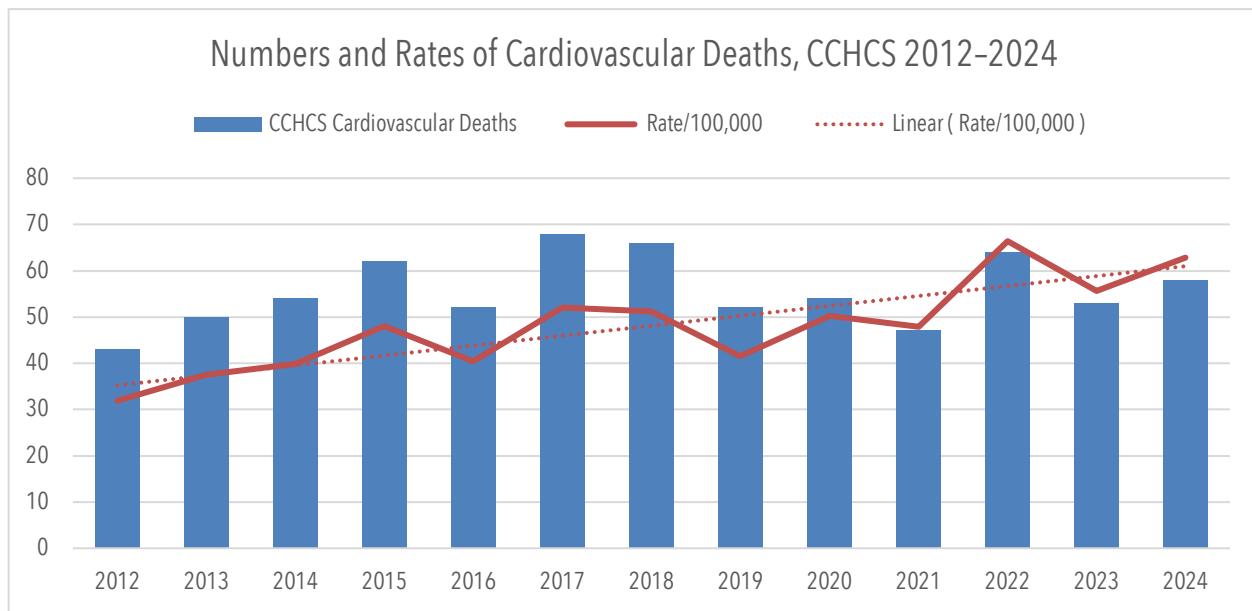
Cardiovascular disease was the third leading cause of death in 2024, with 58 deaths and a mortality rate of 63 per 100,000.

Table 6 and Figure 8 track cardiovascular mortality from 2012 to 2024.

Table 6. Numbers and Rates of Cardiovascular Deaths, CCHCS 2012-2024

Year	CCHCS Cardiovascular Deaths	Rate/100,000
2012	43	32
2013	50	38
2014	54	40
2015	62	48
2016	52	40
2017	68	52
2018	66	51
2019	52	42
2020	54	50
2021	47	48
2022	64	66
2023	53	56
2024	58	63

Figure 8. Numbers and Rates of Cardiovascular Deaths, CCHCS 2012-2024



This chart illustrates the numbers from the previous table and shows an increasing linear trend.

CCHCS Care Guides for chest pain, diabetes, dyslipidemia, and hypertension emphasize cardiac risk assessment, patient education, and appropriate medication management. Increased attention has also been directed toward recognizing red-flag symptoms of acute coronary syndromes and decompensated heart failure.

5. Homicide

In 2024, there were 36 homicides in CCHCS, a mortality rate of 39 per 100,000.

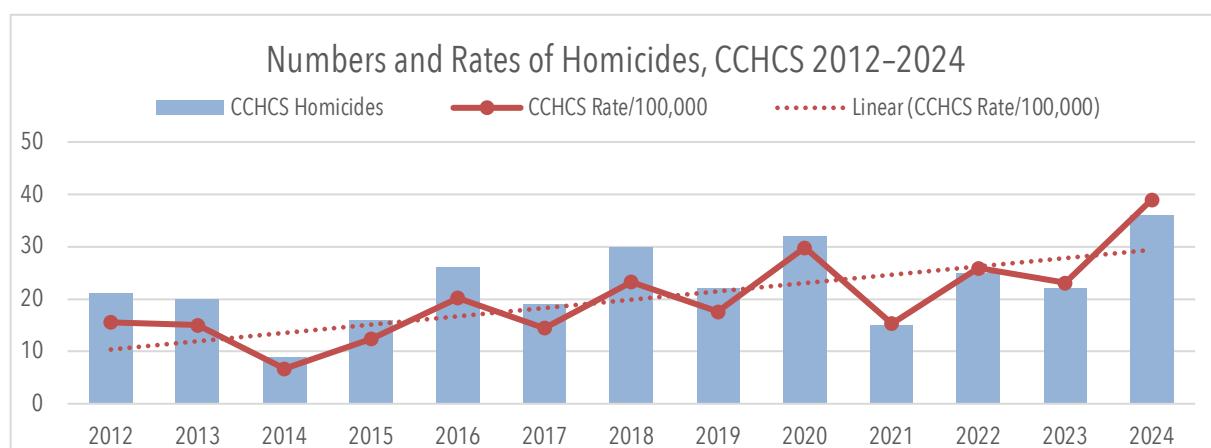
Table 7 and Figure 9 show the numbers of deaths and mortality rates from homicides in CCHCS (2012-2024).

Table 7. Numbers and Rates of Homicides, CCHCS 2012-2024

Year	CCHCS Homicides	CCHCS Rate/100,000
2012	21	16
2013	20	15
2014	9	7
2015	16	12
2016	26	20

Year	CCHCS Homicides	CCHCS Rate/100,000
2017	19	15
2018	30	23
2019	22	18
2020	32	30
2021	15	15
2022	25	26
2023	22	23
2024	36	39

Figure 9. Numbers and Rates of Homicides, CCHCS 2012-2024



A combination bar and line chart illustrating the information in the preceding table.

The Prison Policy Initiative highlighted the high prevalence of prison violence in a [2021 report](#), linking it to gang culture, racism, and the elevated rate of post-traumatic stress disorder among incarcerated men.

For years where comparable national data is available, California prisons reported higher—and more rapidly increasing—homicide rates than the national average. In 2024, the homicide rate reached its highest point since 2006, the first year of federal receivership.

6. Infectious Disease (Including COVID-19)

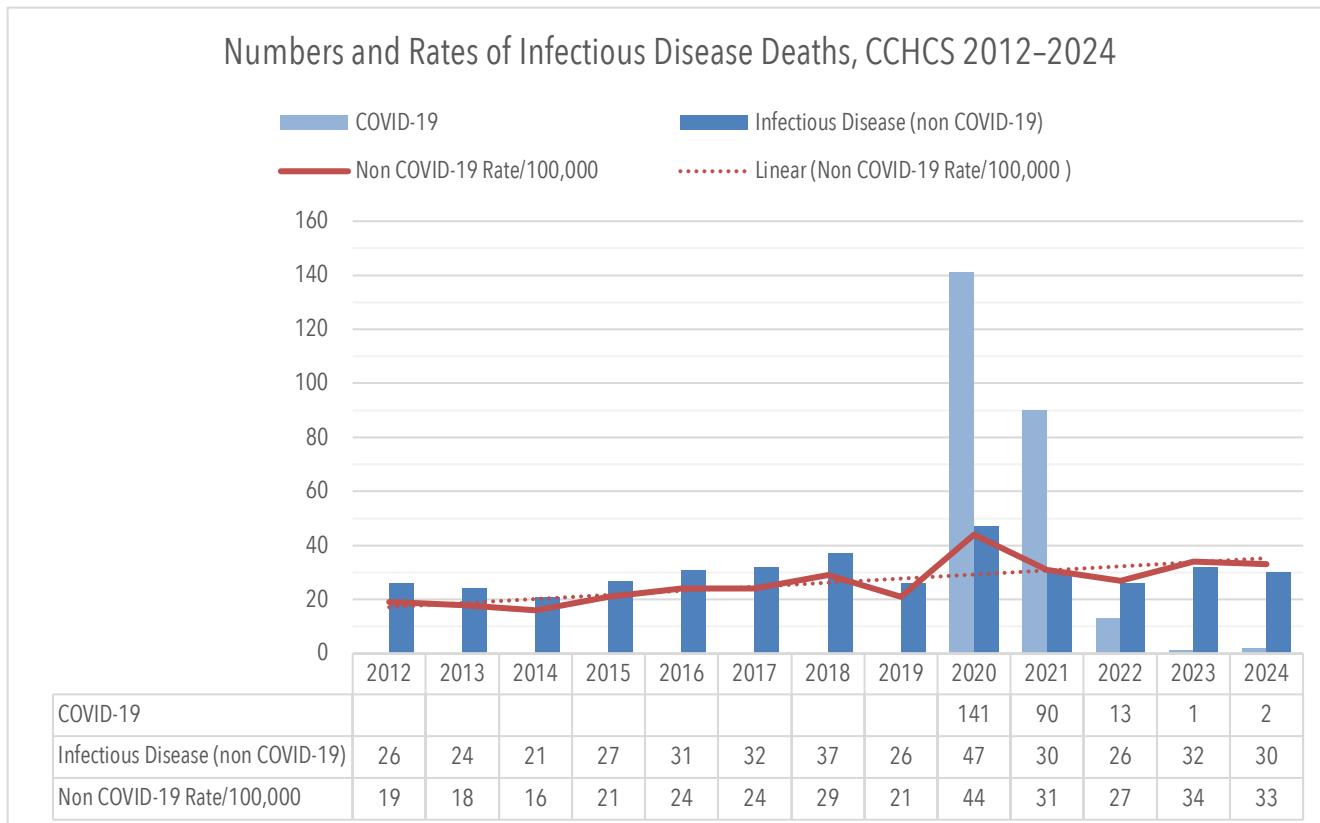
In 2024, there were only two deaths from COVID-19, reflecting broad vaccine uptake among the incarcerated population.

Thirty deaths were attributed to other infectious diseases, primarily sepsis (16 deaths) and infective endocarditis (7 deaths), which together accounted for 77% of non-COVID cases.

- Sepsis: Defined as a dysregulated response to infection leading to multi-organ failure, sepsis mortality in CCHCS ranged from 2 per 100,000 in 2014 to 23 per 100,000 in 2023. This rising incidence partly reflects evolving diagnostic criteria. In 2024, sources of sepsis included urinary tract infections (4 cases) and pneumonia (3 cases).
- Pneumonia: Mortality ranged from 2 per 100,000 in 2015 to 13 per 100,000 in 2020. In 2024, pneumonia caused four deaths, with two additional sepsis cases secondary to pneumonia.
- Infective Endocarditis: Rates fluctuated from zero in 2013-2014 to nine in 2020. In 2024, there were seven direct deaths and one sepsis case secondary to aortic valve vegetation (endocarditis).

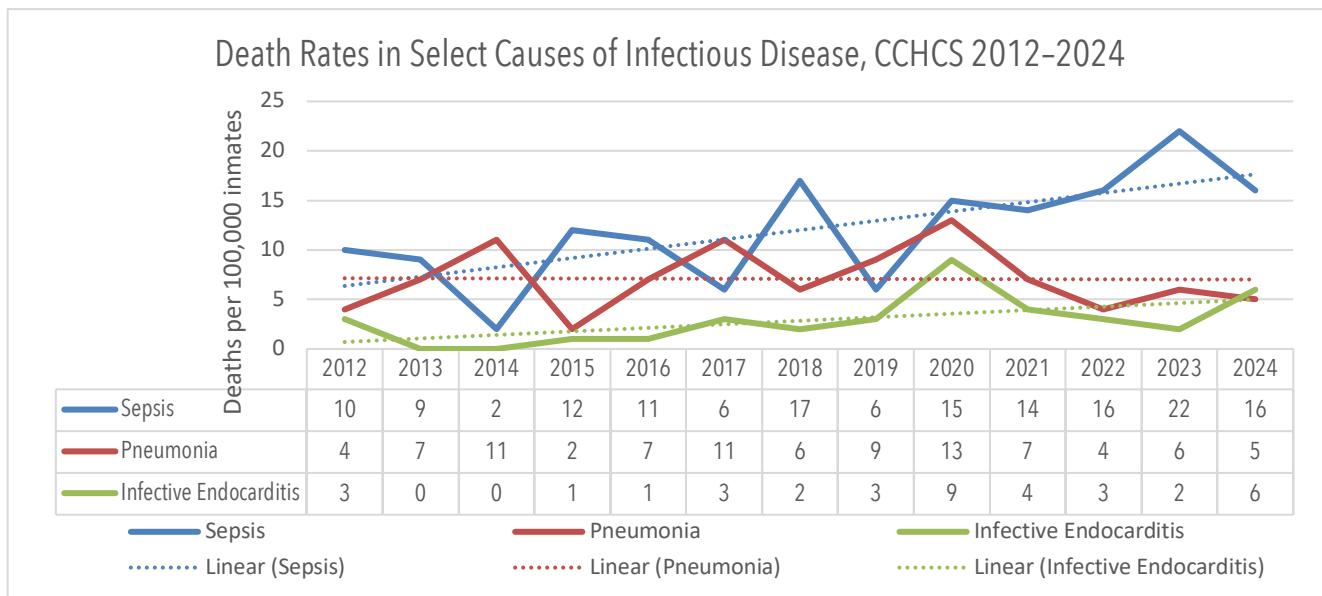
Figures 10 and 11 display mortality trends in infectious diseases from 2012 through 2024.

Figure 10. Numbers and Rates of Infectious Disease Deaths, CCHCS 2012-2024



This chart shows an increasing trend in the rate of non-COVID-19 infectious disease deaths, only partially due to a spike in 2020.

Figure 11. Death Rates in Select Causes of Infectious Disease, CCHCS 2012-2024



This chart shows increasing trends in sepsis and infectious endocarditis death rates, and a flat trend in pneumonia death rates.

7. Suicide

In 2024, there were 29 suicides in California state prisons, yielding a mortality rate of 31 per 100,000. CCHCS suicide rates have risen gradually since 2012. The most recent national comparison (Bureau of Justice Statistics, 2019) reported a prison suicide rate of 27 per 100,000. National rates rose from 15 per 100,000 in 2001-2004 to 22 per 100,000 in 2015-2019; which at the time reflected a steeper increase in rate than in California state prisons. Unfortunately, more recent comparative data was not publicly available.

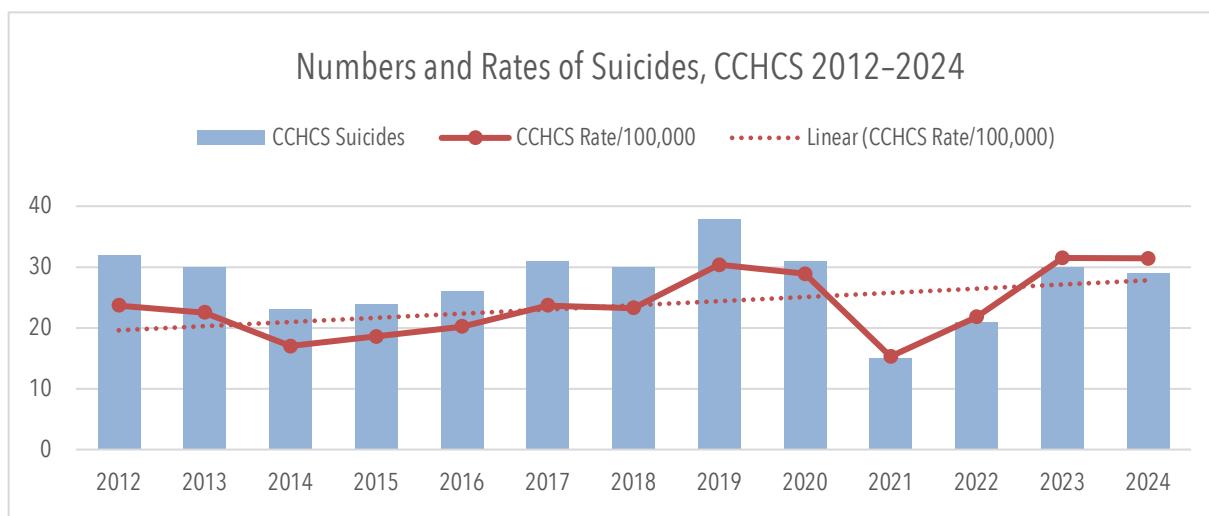
Table 8 and Figure 12 provide suicide trends in CCHCS (2012-2024).

Table 8. Numbers and Rates of Suicide, CCHCS 2012-2024

Year	CCHCS	
	CCHCS Suicides	
2012	32	24
2013	30	23
2014	23	17
2015	24	19
2016	26	20
2017	31	24

Year	CCHCS Suicides	CCHCS
		Rate/100,000
2018	30	23
2019	38	30
2020	31	29
2021	15	15
2022	21	22
2023	30	31
2024	29	31

Figure 12. Numbers and Rates of Suicide, CCHCS 2012-2024



A combination bar and line chart illustrating the information in the preceding table and an increasing linear trend.

A 2020 audit of suicides in CDCR found major deficiencies: 83% of cases involved poor risk assessment, and 87% lacked adequate treatment planning. Suicide prevention remains a system-wide concern, with CDCR emphasizing staff training, improved risk recognition, and stronger collaboration between mental health and medical providers.

Of the 29 suicides in 2024:

- 22 individuals were under active mental health care.
- 10 were enrolled in the Correctional Clinical Case Management System (CCCMS).
- 12 were in the Enhanced Outpatient Program (EOP).
- 7 had no mental health contact.

8. Advanced (end stage) liver disease

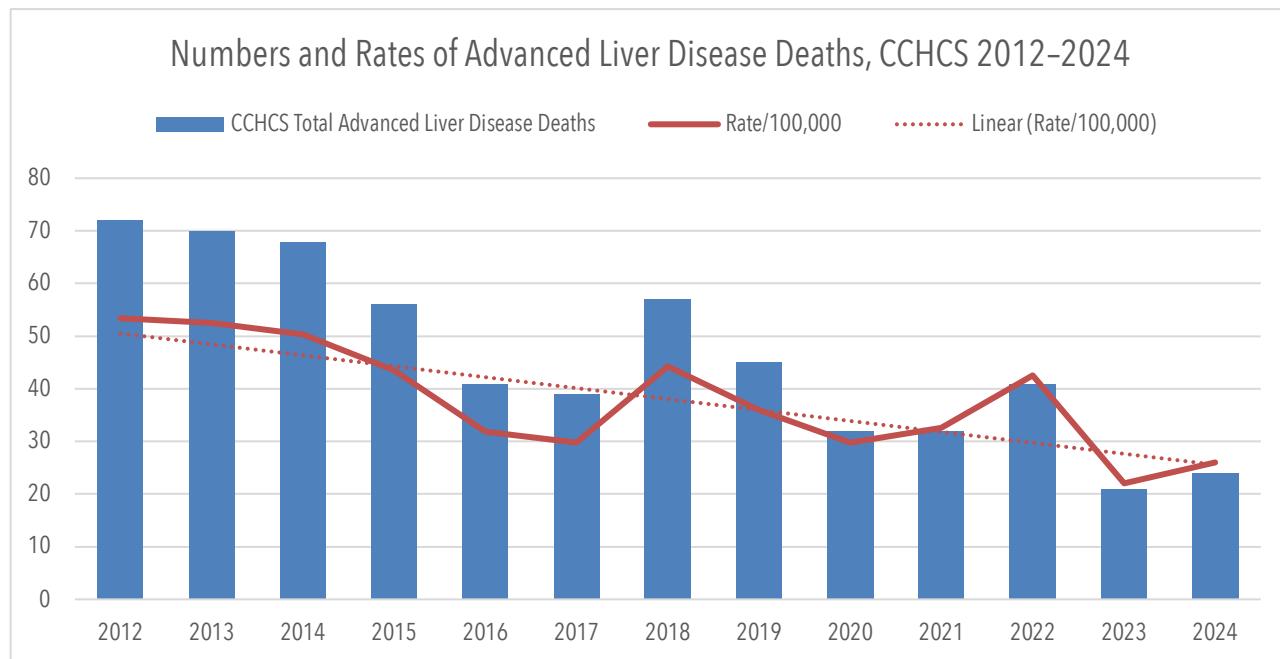
Advanced liver disease (cirrhosis) and its sequelae, including liver cancer, was the seventh leading cause of death in 2024, with 23 deaths and a mortality rate of 25 per 100,000. Among incarcerated individuals, cirrhosis and liver cancer are primarily linked to the high prevalence of chronic hepatitis C virus (HCV) infection associated with intravenous drug use. In 2023, 25.1% of the CCHCS population tested positive for hepatitis C antibodies. Chronic HCV accounted for 17 deaths (74%) from advanced cirrhosis. Other causes included alcoholic cirrhosis (2 deaths), autoimmune hepatitis (1), fatty liver disease (1), and sclerosing cholangitis (1).

Table 9 and Figure 13 present cases, rates, and trends of liver disease deaths from 2012-2024.

Table 9. Numbers and Rates of Advanced Liver Disease Deaths, CCHCS 2012-2024

YEAR	CCHCS Liver Cancer Deaths	CCHCS Cirrhosis Deaths	CCHCS Total Advanced Liver Disease Deaths		Rate/100,000
2012	25	47	72		53
2013	27	43	70		53
2014	21	47	68		50
2015	19	37	56		44
2016	23	18	41		32
2017	18	21	39		30
2018	28	29	57		44
2019	32	13	45		36
2020	18	14	32		30
2021	24	8	32		33
2022	22	19	41		43
2023	10	11	21		22
2024	12	12	24		26

Figure 13. Numbers and Rates of Advanced Liver Disease Deaths, CCHCS, 2012-2024



A combination bar and line chart illustrating the information in the preceding table and a downward linear trend.

CCHCS has implemented comprehensive programs to improve HCV screening and treatment, and prevention of liver cancer and other complications. The [Hepatitis C Care Guide](#) establishes universal antibody screening, confirmatory testing, fibrosis staging, and access to effective antiviral therapy. Education on HCV prevention is provided at entry and annually.

The [ISUDT Second Annual Outcome Report](#) (April 2023) found that patients treated for HCV and maintained on medication for opioid use disorder had a 60% lower reinfection rate than those not on treatment. Another study, [The Hepatitis C Care Cascade in California State Prisons: Screening and Treatment Scale-up and Progress Toward Elimination, 2016-2023](#), reported a nearly 70% decline in active HCV infection between 2018 and 2023. Although the overall prevalence of HCV history has remained stable at 25%, active infections fell from 14% in 2018 to 4.4% in 2023.

The [Liver Cirrhosis Care Guide](#) calls for fibrosis staging to identify candidates for biannual ultrasound screening for liver cancer and recommends measures to detect and manage complications such as esophageal varices and ascites, while avoiding harmful medications.

Performance metrics are tracked through monthly [Health Care Services Dashboards](#). In 2024, HCV care performance remained at 87-88%, while cirrhosis care improved from 86% in January to 91% in December.

Collectively, these initiatives have led to major improvements in care for patients with advanced liver disease, resulting in a 51% reduction in the mortality rate over the past 12 years.

9. Accidental deaths

In 2024, there were seven accidental deaths: two from food aspiration, one from accidental drug toxicity (flecainide), two from falls causing fatal subdural hematomas, and two from postoperative complications—one due to uncontrolled bleeding after refusal of transfusion, and one from an iatrogenic bowel perforation.

E. Opportunities for Improvement in 2024

An *Opportunity for Improvement (OFI)* is any situation in which health care delivery systems or processes can be improved.

The Mortality Review Discussion Group (MRDG) identifies OFIs during each mortality review and forwards them to the appropriate prison or region for follow-up. OFIs may be minor (e.g., inconsistent documentation times) or serious (e.g., a lost specialist recommendation during patient transfer causing delayed diagnosis of a treatable condition). An OFI generally indicates that care may not have aligned with CCHCS policies, CCHCS Care Guide recommendations, or established evidence-based practices.

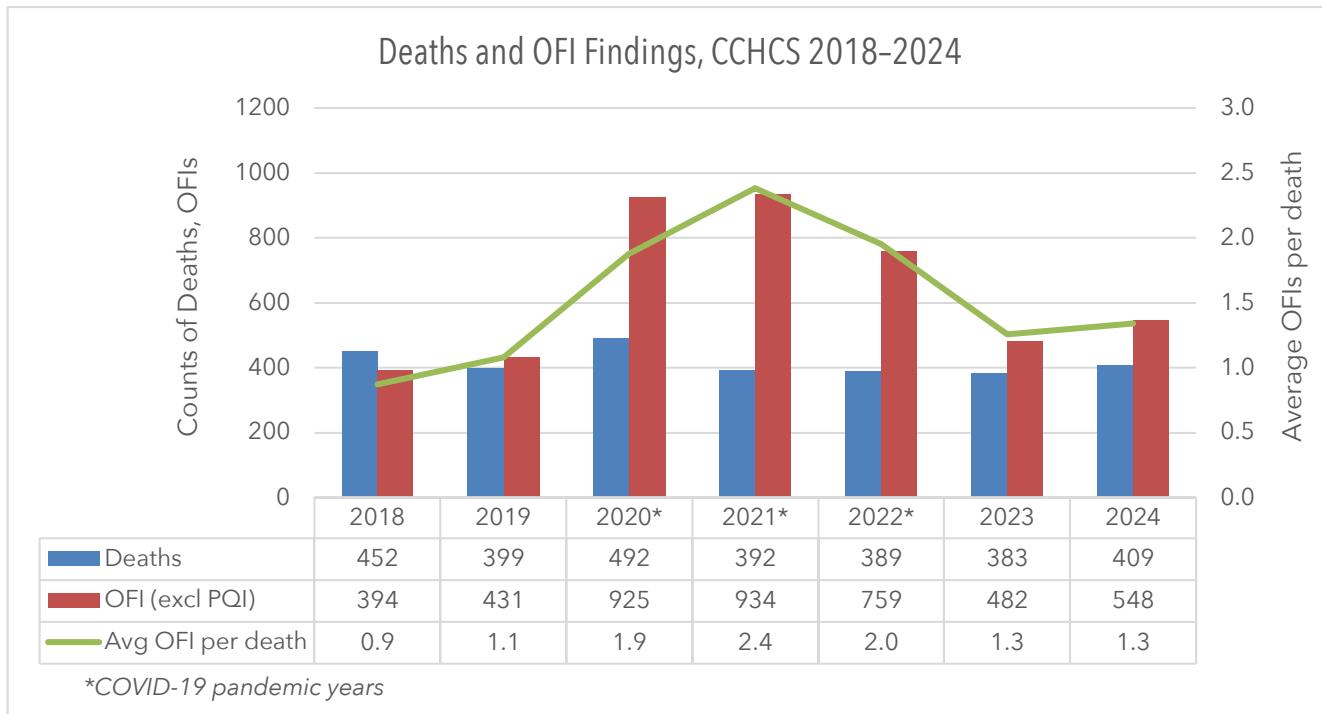
A classification system for OFIs was introduced in 2018 and has been refined annually. That year, the MRDG recorded 392 OFIs, rising to 431 in 2019. During the next three years, the number nearly doubled; example: in 2022, there were 821. In 2023, 482 OFIs were identified—281 in unexpected deaths and 201 in expected deaths.

In 2024, there were 548 OFIs across 409 deaths, averaging 1.3 OFIs per death.

Trend analysis:

- The chart below (Figure 14) shows a sharp increase in OFIs per death during the COVID-19 pandemic, with a peak of 2.4 in 2021.
- Many OFIs from 2020-2021 were linked to compliance with rapidly evolving pandemic policies and processes.
- The rate declined to 2.0 in 2022 and to 1.3 in both 2023 and 2024, approaching pre-pandemic levels.

Figure 14. Deaths and OFIs, CCHCS 2018-2024



This chart shows a significant rise in average OFIs per death coinciding with the COVID pandemic but currently trending downward to near pre-pandemic levels.

OFIs are categorized into nine general groups. Table 10 presents the distribution of OFIs in expected and unexpected deaths, followed by a detailed discussion of each category.

Table 10. Opportunities for Improvement in Expected and Unexpected Deaths, CCHCS, 2024

Opportunities for Improvement	Unexpected Deaths			Deaths	Total
	Deaths	Deaths	Total		
1. Opportunities to improve application of the "Model of Care" as described in the CCHCS Complete Care Model					
a. Access timeframes					
i. Meeting access timeframes for routine care	12	7	19		
ii. Meeting access timeframes for urgent or emergency care	3	1	4		
b. Applying complex care management for improved coordination or continuity	2	5	7		
c. Transferring a patient to a more appropriate level of care	2	6	8		
d. Management of a non-adherent or non-compliant patient	12	4	16		

Opportunities for Improvement	Unexpected Deaths	Expected Deaths	Total
e. Integrated Substance Use Disorder Program referral indicated but not made	14	1	15
2. Opportunities to improve care near the end of life			
a. Physician's Orders for Life Sustaining treatment (POLST) and Do Not Resuscitate (DNR) orders addressed and documented when indicated or changed when a patient's clinical condition changes	7	21	28
b. Honoring POLST and DNR orders	2	9	11
c. Improving pain and other symptom management, especially in cancer care	-	2	2
d. Offering hospice care to terminally ill patients	-	1	1
e. Compassionate release request indicated but not made	-	4	4
3. Opportunities to improve clinical decision making by improved recognition and management of important clinical signs and symptoms	51	25	76
4. Opportunities to improve recognition and action in response to abnormal laboratory, imaging and other diagnostic test results	23	11	34
5. Opportunities to improve adherence to policies and procedures, and adherence to Care Guides for specific diseases, conditions, or risk factors			
a. Fall risk (institution-specific protocols and evidence-based practice)	2	3	5
b. Chronic Wound Management - including prevention of decubitus ulcers	5	4	9
c. Medication Management (multiple care guides and evidence-based practice)	13	4	17
d. Cardiovascular Risk	-	-	-
e. Advanced Liver Disease	-	1	1
f. Preventive Services - Lung Cancer Screening	-	3	3
g. Other Care Guides, protocols and evidence-based practice	30	9	39

Opportunities for Improvement	Unexpected Deaths	Expected Deaths	Total
6. Opportunities to improve communication between primary care teams and various care transitions			
a. Specialty referral	1	3	4
b. Hospital	1	2	3
c. Mental Health	3	1	4
d. Custody	5	-	5
e. Other Primary Care Teams	2	-	2
f. Orders not followed	8	4	12
7. Opportunities to improve medical record documentation			
a. Inadequate or inaccurate record	22	8	30
b. Missing Report	9	4	13
c. Missing Provider notes	3	-	3
d. Missing Nurse notes	4	4	8
e. Legacy Charting (cloning of medical records)	3	2	5
f. Incomplete Problem List	7	6	13
g. Electronic Health Record not closed	-	-	-
8. Opportunities to prevent delays in diagnosis and/or treatment	1	11	12
9. Opportunities to improve the practice and documentation of CCHCS Emergency Protocols			
a. Delay calling 9-1-1	29	5	34
b. Documentation lapse	43	2	45
c. Other	51	3	54
10. Miscellaneous	1	1	2
TOTAL CCHCS Opportunities for Improvement	281	201	482
11. Potential Quality Issue (PQI) referrals	8	12	20

1. Opportunities to improve application of the Complete Care Model

Since 2015, the Complete Care Model (CCM) has been the foundation of health care delivery in CCHCS.

Each patient is assigned to an Interdisciplinary Care Team responsible for continuous, coordinated, and patient-centered care. Teams follow standards for access and prevention, promote wellness, provide episodic and chronic disease management, respond to urgent and emergent needs, and deliver optimal end-of-life care.

Daily team huddles support panel management, using performance dashboards, patient registries, problem lists, and decision support tools such as CCHCS Care Guides. Evidence-based standards for chronic and acute conditions are expected to be followed. The model aims to reduce hospitalizations and emergency visits, improve outcomes, and enhance satisfaction for patients and staff.

a) *Meeting access standards for Routine Care or Urgent/Emergency Care.*

23 total OFIs. (20 routine, 3 urgent/emergency)

CCHCS access standards:

- Nursing triage: RN reviews patient requests (form 7362) within 24 hours; emergent issues require immediate care, urgent issues same-day evaluation, and other concerns next business day.
- Primary care: Urgent visits within 1 day; routine within 14 days; post-hospital discharge within 5 days.
- Specialty care: High priority within 14 days; medium within 45 days; routine within 90 days.

In 2024, 20 OFIs involved delays in scheduling routine appointments, mainly in processing patient requests (form 7362). Three patients were not seen promptly by primary care teams after transfer to new institutions. Of greater concern, three specialty care cases missed standards: one patient with hyperaldosteronism did not see endocrinology, and two cancer patients experienced delays in specialist follow-up. Cases where delays may have led to lapses in care are addressed in a later section.

b) *Applying complex care management for improved care coordination or continuity*

7 total (2 in unexpected deaths, 5 in expected deaths)

Care teams are expected to identify high-risk patients needing coordinated management across specialties, diagnostics, procedures, education, and counseling. Eligible patients include those with cancer, dementia, degenerative neurologic disease, multiple comorbidities, functional impairments, serious mental illness, or frequent hospitalizations. Criteria are outlined in the Health Care Department Operations Manual, section 3.1.6.

In 2024, seven cases reflected missed opportunities for better coordination:

- Two cancer patients (testicular, laryngeal).
- One patient with systemic lupus erythematosus who died of overdose.
- One with repeated falls who died of hemorrhagic stroke.
- One with end-stage renal disease on dialysis who died from sepsis.
- One with dementia and depression who may have benefitted from a capacity evaluation.
- One with advanced liver disease, uncontrolled hypertension, seizure disorder, and poor adherence who died of gastrointestinal hemorrhage.

c) Transferring a patient to a more appropriate level of care.

8 total (2 in unexpected deaths, 6 in expected deaths)

These patients might have benefitted from transfer to higher-level care settings.

d) Management of a nonadherent or noncompliant patients

16 total (12 in unexpected deaths, 4 in expected deaths)

Mental illness and substance use disorders contribute significantly to nonadherence within CCHCS. This leads to repeated rescheduling, delays, and poor outcomes. In 2024, management of nonadherence was cited as an OFI in 16 cases.

e) Integrated Substance Use Disorder Treatment (ISUDT) referrals

15 total (14 in unexpected deaths, 1 in an expected death)

The ISUDT program, launched in 2019 with Care Guide issued in 2020, combines evidence-based strategies, including medication-assisted treatment, to address addiction. Referral is indicated for any patient with substance use disorder (SUD) or at high risk, identified by universal screening.

In 2024, 15 patients with drug or alcohol addiction might have benefitted from ISUDT but were not referred—25 fewer than in 2023. Nine of these patients died of overdose.

2. Opportunities to improve care near the end of life

The principle of patient autonomy requires that physicians offer a Physician Order for Life-Sustaining Treatment (POLST) to patients who are elderly, frail, living with serious chronic conditions, or expected to live less than a year. The primary care team is expected to hold regular discussions about treatment goals and repeat them as conditions change. These discussions may result in “do not resuscitate” orders.

a) *POLST/DNR discussions not initiated*

28 cases (7 unexpected deaths; 21 expected deaths)

A 2022 systemwide initiative aimed to improve end-of-life care through coordinated management of complex patients, thorough documentation of patient preferences, and use of compassionate release when appropriate. In 2024, 28 Opportunities for Improvement (OFIs) involved patients appropriate for POLST discussions. In some cases, no discussion was documented; in others, significant clinical changes occurred without a follow-up conversation.

b) *POLST/DNR not honored*

11 cases (2 unexpected deaths; 9 expected deaths)

In 2024, 11 patients who had limited-treatment directives experienced resuscitation attempts, hospitalizations, or other undesired interventions. This represents improvement compared to 21 OFIs in 2022 and 16 in 2023.

c) *Inadequate pain and symptom management*

2 cases (both expected deaths)

The Care Guide for Pain Management emphasizes identifying pain as a possible sign of malignancy, screening for depression, and appropriate use of medications. In 2024, two patients (with laryngeal and advanced brain cancer) received suboptimal pain or symptom management. This is the second year in a row with only 2 OFIs in this category, a marked decline from 11 OFIs in 2022.

d) Missed opportunity for hospice care

1 case (expected death)

Hospice provides palliative care for patients with life-limiting illness and is available in all inpatient facilities, with a dedicated unit at California Medical Facility. In 2024, there was one OFI for failure to offer hospice—a sizeable decrease from the nine cases in both 2022 and 2023.

e) Compassionate release not pursued

4 cases (all expected deaths)

California law was revised in 2022 to expand eligibility for compassionate release for medically incapacitated or terminally ill patients, provided appropriate community placement exists. In 2024, four patients were identified as candidates where release could have been pursued, compared to 11 OFIs in 2023 and 32 in 2022.

3. Improving Recognition and Management of Key Clinical Signs and Symptoms

76 OFIs in 61 patients (51 in unexpected deaths; 25 in expected deaths)

Certain “red flag” symptoms should trigger urgent evaluation. Examples include:

- Chest pain/shortness of breath → possible acute coronary syndrome
- Unexplained weight loss or abdominal pain → possible cancer
- Atypical headache or mental status change → possible brain tumor or stroke
- Other clear red flags: unilateral leg swelling, jaundice, hematemesis, palpable masses

In 2024, there were 76 OFIs related to incomplete or delayed evaluation of such symptoms (69 in 2023; 96 in 2022). Many of these patients were later diagnosed with significant disease. Table 11 details the OFIs and subsequent diagnoses.

Table 11. Missed Clinical Signs and Symptoms, and Eventual Diagnoses, CCHCS 2024

Clinical Sign or Symptom	Count of OFIs	Eventual Diagnoses (if related to the clinical symptom or sign)
weight loss	8	cancer, pancreas (3); multiple myeloma (2); cancer, testis; cancer, bladder; coccidioidomycosis
depression; anxiety; multiple mental issues	6	suicide (6)
history of illicit drug use	4	drug overdose (4)
chest pain	4	aortic aneurysm; cardiac tamponade; aortic rupture
high blood pressure; falls	3	hemorrhagic stroke; aortic arch dissection; sudden cardiac arrest with possible myocardial infection
abdominal pain	2	intestinal perforation; gastric ulcer
anal pain; hematochezia	2	rectal cancer
altered mental status	2	Parkinson disease; cancer, unknown primary
decreased oxygen saturation	2	chronic obstructive pulmonary disease (2)
positive mental health screen	1	suicide
delusions	1	dementia
dizziness	1	sudden cardiac arrest with cardiac arrhythmia
hematuria	1	cancer, bladder
low back pain	1	lumbar epidural abscess
mental health services request	1	drug overdose
tachycardia	1	infective endocarditis

The analysis of missed clinical signs and symptoms reveals recurring patterns of under-recognized “red flag” presentations leading to serious or fatal outcomes. The most common missed indicator was unexplained weight loss, frequently associated with undiagnosed malignancies such as pancreatic, bladder, and testicular cancer, or multiple myeloma.

Mental health symptoms including depression, anxiety, and multiple psychiatric complaints—were linked to subsequent suicides, underscoring critical gaps in timely mental health

intervention. Patients with a history of illicit drug use often died from overdose, highlighting the need for consistent screening and referral for substance use disorder treatment. Cardiovascular or vascular warning signs, such as chest pain, hypertension, and unexplained falls occasionally led to missed diagnoses of life-threatening conditions including aortic rupture, hemorrhagic stroke, and sudden cardiac arrest. Common gastrointestinal and genitourinary signs and symptoms—such as abdominal pain, hematochezia, and hematuria—were associated with delayed cancer diagnoses. Finally, neurologic and systemic warning symptoms and signs, such as altered mental status, oxygen desaturation, and tachycardia, reflected underlying disease processes that were not fully evaluated at presentation.

Collectively, these findings emphasize the need for clinical vigilance, consistent application of CCHCS Care Guides, and improved interdisciplinary communication to ensure that even subtle or nonspecific symptoms trigger timely and comprehensive diagnostic workups.

4. Improving Response to Abnormal Laboratory and Diagnostic Test Results

34 OFIs in 31 patients (23 unexpected deaths; 11 expected deaths)

Abnormal test results must be flagged, tracked, and acted upon promptly. Results released after hours, during shift changes, or care transitions are at higher risk of being overlooked.

In 2024, there were 34 OFIs in this category (compared with 54 in 2022, and 29 in 2023). Examples include:

- Six patients with positive urine toxicology—laboratory findings that were not pursued—who later died of overdose
- Two patients with abnormal fecal occult blood tests who later died of colon cancer

Many of these lapses contributed to delayed diagnoses or treatments, discussed further in the section on delays.

5. Opportunities to Improve Adherence to CCHCS Clinical Care Guides

74 OFIs: (50 in unexpected deaths; 24 in expected deaths)

The Clinical Care Guides are tools developed by CCHCS to assist clinicians and care teams in patient management. They are evidence-based, well-referenced, reviewed annually, and updated frequently. Each guide includes a summary, decision-support tools, and a section for patient education and self-management. These guides are available on the CCHCS website at cchcs.ca.gov/clinical-resources.

Comparable resources for nursing staff include standard nursing procedures and encounter forms for patients with common conditions such as allergic reactions, asthma, chest pain, constipation, dental or ear problems, nosebleeds, eye conditions, female genitourinary complaints, headaches, hemorrhoids, rashes, altered mental status, musculoskeletal pain, respiratory distress, seizures, wounds, and upper respiratory symptoms.

The following subsections describe OFIs in which recommended practices from these guides were not followed.

a) Fall Risk Mitigation

5 OFIs in 3 patients (2 in one unexpected death; 3 in two expected deaths)

Falls can cause serious injuries that lead to hospitalization, increased morbidity, or death. Care teams should identify patients at risk by assessing mobility, vision, balance, chronic illness, and medications. Patients who fall require frequent reassessment. Preventive measures include adequate lighting, low-height beds, accessible call devices, handrails, mobility support, non-slip footwear, and clear walking paths. In 2024, the cited OFIs involved one patient with amyotrophic lateral sclerosis and one with hemorrhagic stroke.

b) Pressure Injury Prevention and Wound Management

9 OFIs (5 in unexpected deaths; 4 in expected deaths)

Risk factors for pressure injury include immobility, malnutrition, sensory loss, and poor circulation. Patients with stroke, severe arthritis, paralysis, weakness, advanced age, or physical restraints are especially vulnerable, requiring frequent screening and tailored care plans. Pressure injuries increase the risk of infection, sepsis, and death, and are a major source of morbidity in hospitals and long-term care facilities. There were nine of these OFIs in 2024, compared with three in 2023.

c) Medication Management

17 OFIs (13 in unexpected deaths; 4 in expected deaths)

Seventeen OFIs involved medication management issues.

- Suboptimal Suboxone dosing in MAT (3 patients)
- Poor blood pressure control (2)
- Chemotherapy management lapses (2); no serum monitoring in one case, no recommended low-fat diet in another.

- One patient with long QT syndrome received a medication requiring cardiac rhythm monitoring, which was not performed.
- Inadequate seizure management when serum monitoring was refused.
- Lapses in court-ordered directly observed therapy enabling hoarding and overdose.
- One patient missed a single prescribed dose of the antidepressant mirtazapine.

The 17 OFIs in 2024 represent a decline from 30 in 2022 and 22 in 2023.

d) Cardiovascular Risk Management

0 OFIs

All patients aged 18 and older should undergo cardiovascular risk assessment using the American College of Cardiology 10-year risk tool, which considers age, sex, race, cholesterol levels, blood pressure, diabetes, and smoking history. Patients at intermediate or high risk should be evaluated for statin therapy and noninvasive cardiac testing. After five OFIs in 2022-2023, there were none in 2024, indicating improved compliance.

e) Hepatitis C and Liver Cirrhosis

1 OFI (in an expected death)

In 2024, a high-risk patient was not regularly screened and later died of liver cancer.

f) Lung Cancer Screening

3 OFIs (all in expected deaths)

Following the 2021 adoption of the U.S. Preventive Services Task Force recommendation, all heavy smokers aged 55 and older should receive annual low-dose CT scans. There were 8 OFIs in 2022, 4 in 2023, and 3 in 2024, involving high-risk patients who were not screened. Two of these patients died of lung cancer.

g) Other Care Guides, Programs, and Protocols

39 total OFIs in 33 patients (30 in unexpected deaths; 9 in expected deaths)

Thirty-nine OFIs cited deviations from other care guides, nursing standards, or custody protocols. The table below summarizes the affected programs and related causes of death.

Table 12. Other Care Guides, Programs and Protocols OFI and related deaths, CCHCS, 2024

Program or Care Guide	Number of OFIs	Cause of Death
ISUDTP, MAT, and NIDA	8	Drug overdose (7)
Suicide risk/suicide watch	7	Suicide (7)
Cancer screening	3	Breast cancer (1)
COPD management	2	Interstitial lung disease (1)
Diabetes management	1	Diabetic ketoacidosis (1)

Single OFIs were also noted in diverse areas including blood pressure control, chest pain protocol, depression screening, hunger-strike protocol, initial health-screen documentation, renal dialysis, gastrointestinal bleeding prophylaxis, shoulder pain follow-up, specialty care after aortic valve replacement, routine vital-sign monitoring, and renewal of mental-incapacity orders (PC 2602).

6. Opportunities to Improve Communication Between Primary Care Teams and During Care Transitions

30 total (20 in unexpected deaths; 10 in expected deaths)

The accurate transfer of clinical information between care teams during transitions of care is essential for patient safety and continuity. Poor communication between specialists and primary care teams can result in delayed or omitted critical tests, missed diagnoses, or delayed treatment. Similar communication failures may occur within care teams.

In 2024, there were 30 Opportunities for Improvement (OFIs) related to communication:

- Specialist–Primary Care Miscommunication (4 cases)
 - Three involved specialist recommendations that were not implemented.
 - One involved an inappropriate chemotherapy order that had not been recommended by the oncologist.
- Primary Care–Hospital Communication Failures (3 cases)
 - Two involved incomplete information provided to hospitals at transfer.

- One involved a hospital's failure to notify the institution of a patient's death.
- Mental Health–Primary Care Miscommunication (4 cases)
 - Two involved inadequate communication of changes in suicide risk for patients on suicide watch.
 - One involved a lapse in rounding frequency by a psychiatric technician.
 - One patient was lost to Mental Health follow-up after transfer.
- Nursing–Primary Care Communication Issues (3 cases)
 - One RN did not report significant weight loss to a physician.
 - One physician was not informed of a patient who had low blood pressure and significant pain during a dressing change.
 - One patient death was not reported to the primary care provider.
 - An additional case involved RN–RN miscommunication concerning a patient's swollen arm.
- Custody–Primary Care Communication Barriers (2 cases)
 - One case involved custody preventing an RN from responding to an emergency.
 - In another, custody staff refused care on behalf of a patient, contrary to policy.
- Physician Orders Not Followed (12 cases)
 - These included missed orders for follow-up visits, daily weights, wound care, blood pressure monitoring, echocardiography, and medical equipment (a thermal blanket and an abdominal truss).

There were no OFIs related to communication problems within primary care teams.

7. Opportunities to Improve Medical Record Documentation

72 total (48 in unexpected deaths; 24 in expected deaths)

The implementation of the Cerner electronic medical record (EMR) system in 2017 has improved documentation completeness and data sharing across CCHCS. However, documentation lapses persist. In 2024, there were 72 documentation-related OFIs, compared with 43 in 2023 and 139 in 2022.

a) Inadequate or Inaccurate Documentation of Care Within CCHCS

30 total (22 in unexpected deaths; 8 in expected deaths)

b) Incomplete or Missing Documentation of Care

13 total (9 in unexpected deaths; 4 in expected deaths)

When care is provided outside of CCHCS—such as in emergency departments, hospitals, or specialty clinics—records of those encounters may be unavailable, incomplete or missing. In 2024, examples included:

- Two missing consultant reports
- Four missing or incomplete hospital discharge summaries
- One missing MHCBS discharge summary
- One missing care refusal form
- One missing automated external defibrillator (AED) recording

c) Missing Provider Notes

3 total (all in unexpected deaths)

Examples included a missing modified-diet order, a missing “man down” primary care provider note, and a missing routine follow-up note.

d) Missing Nursing Notes

8 total (4 in unexpected deaths; 4 in expected deaths)

Examples included a missing blood pressure entry, three missing RN progress notes during suicide watch protocols, and non-initialed errors in a resuscitation record.

e) Legacy Charting

5 total (3 in unexpected deaths; 2 in expected deaths)

“Legacy charting” refers to the practice of copying and pasting previous documentation into new records, occasionally inserting notes outside their true chronological sequence. This practice, which undermines record accuracy, has decreased significantly over time: five OFIs in 2024 compared with eight in 2023, twelve in 2022, and thirty-four in 2021.

f) Incomplete Problem Lists

13 total (7 in unexpected deaths; 6 in expected deaths)

The problem list should include all known medical and psychiatric conditions and be kept current. In 2024, missing entries included:

- Substance use disorder (2)
- Hepatitis C (2)
- Diabetes mellitus
- Dementia or delirium
- Dysphagia
- Bell's palsy
- Smoking history
- Mental health history
- One case in which the entire problem list was not updated at transfer

Missing diagnoses can have significant implications for ongoing patient management and follow-up care.

Note: Documentation OFIs in this section exclude lapses cited in Emergency Medical Response, POLST/DNR documentation, or the ISUDT program, which are discussed separately.

8. Opportunities to Prevent Delays in Diagnosis or Treatment

12 Total (1 in an unexpected death; 11 in cases of expected death)

In 2024, there were 12 OFIs in 11 cases where delays in diagnosis or treatment were identified in Mortality Review Discussion Group (MRDG) reports.

Table 13. Delayed Diagnoses, CCHCS, 2024

Abnormality or Delay Source	Duration of Delay	Final Diagnosis
Weight loss, hematuria	1 year 9 months	Bladder cancer
Abnormal CT scan	4 months	Lung cancer
Abnormal chest X-ray	1 year	Lung cancer
Abnormal mammogram	3 years	Breast cancer
Abnormal PET scan	5 years	Metastatic sarcoma
Referral to interventional radiology	6 weeks	Lung cancer
Referral to wound care	4 months	Sepsis
Weight loss, hoarseness, ENT referral	1 year	Laryngeal cancer
Scrotal pain and swelling, abdominal mass, urology referral	18 months	Testicular cancer
Surgery referral (7 mo), Oncology referral (11 mo)	18 months	Adrenal cancer
Positive fecal occult blood test (16 mo), positive colon biopsy (6 mo), Oncology referral (5 mo)	27 months	Colon cancer

Delays in diagnosis occurred when clinical “red flags” such as weight loss, hematuria, hoarseness, or scrotal swelling were not promptly evaluated. Four cases involved delayed follow-up of abnormal imaging or laboratory results that ultimately revealed malignancy. Delays in specialist referral also contributed to missed or late diagnoses, including one case leading to fatal sepsis.

These findings emphasize the importance of timely evaluation, effective follow-up systems, and coordinated care, especially when malignancy is suspected or confirmed.

9. Opportunities to Improve Emergency Medical Response (EMR) Practice and Documentation

133 total (123 in unexpected deaths; 10 in expected deaths)

A statewide quality initiative in 2018 led to a redesign of the Emergency Medical Response (EMR) program, aimed at reducing delays, improving documentation, and standardizing clinical emergency care.

In 2024, EMR-related OFIs included:

- Delays in 9-1-1 activation or first responder arrival: 34 cases
- Documentation lapses: 45 cases—primarily nursing documentation problems referred to the Nursing Professional Practices Committee (NPPC)
- Miscellaneous response issues: 54 cases, including: automated external defibrillator (AED) malfunctions or improper use (7); underutilization or omission of naloxone (7); equipment problems, including incorrect use of chest seals and cervical collars (7), airway management difficulties (5); protocol violations, such as failure to activate 9-1-1 or pronouncement of death by non-physicians (4); oxygen not administered, delayed, or administered by untrained staff (4); missed or untreated hypoglycemia (2); CPR administered despite signs of rigor mortis (2)

Overall, there were 29 more OFIs in this category than in 2023, underscoring ongoing opportunities for improvement in emergency readiness, documentation accuracy, and protocol compliance.

10. Miscellaneous

1 OFI (in an expected death)

One miscellaneous OFI was recorded in 2024: an echocardiogram was unnecessarily repeated within one month.

11. Potential Quality Issues (PQIs)

20 total (19 patients): 8 in cases of unexpected death; 11 in cases of expected death

CCHCS defines a Potential Quality Issue (PQI) as any health care incident—regardless of severity—that occurs during treatment by a Healthcare Provider Network facility or provider and requires written referral for review.

In 2024, mortality reviews generated 20 PQIs in 19 patients:

- Premature hospital discharges followed by early readmission: 8 cases
- Inadequate inpatient evaluations: 5 cases, including severe catatonia, large gastric ulcer, and acute or chronic renal failure
- Fatal iatrogenic injuries after surgery: 4 cases
- Inappropriate hospital discharge with uncontrolled hypertension: 1 case
- Hospital-acquired pressure ulcer: 1 case

These represent significant breaches in quality of care, with follow-up and corrective action occurring at the facility to which the PQI was referred.

12. Referrals from the Mortality Review Discussion Group (MRDG) to Quality Review Committees

a) *Referrals to the Nursing Professional Practices Committee (NPPC)*

In 2024, 92 mortality reviews included one or more NPPC referrals. There were 191 referrals in all, representing 35% of the 548 total OFIs. Table 14 summarizes the number of OFIs generated in each of the 21 categories monitored by the NPPC.

Table 14. Occurrences of NPPC referrals

NPPC Ref	NPPC Taxonomy	Referrals
A	Activation of EMS (911)	2
B	Appropriate Nursing Care or Action	20
C	Clinical Supervision Delegation	0
D	Implementation of Provider Orders	12
E	Inter-Facility and Intra-Facility Transfer Process	1
F	Maintenance Utilization of Nursing Equipment/Supply	2
G	MAR Documentation	1
H	Medication Administration	3
I	Multidisciplinary Communication	1
J	Notification to the Provider/Higher Level of Care	7

NPPC Ref	NPPC Taxonomy	Referrals
K	Nursing Assessment	21
L	Nursing Documentation	57
M	Nursing Health Screening Process (RC, RR)	1
N	Patient Disposition Decision	1
O	Patient Education	3
P	Re-evaluation of Effectiveness of Nursing Intervention	0
Q	Response to Urgent/Emergent/Life Threatening Condition	18
R	RI Urgent/Emergent/Life Threatening Condition	7
S	Timely Nursing Care or Action	8
T	Triage 7362 Process	18
U	Use of Standardized Nursing Protocol	7
-	unspecified	1
	Grand Total	191

b) Referrals to the Health Care Incident Review Committee (HCIRC)

The multidisciplinary Health Care Incident Review Committee (HCIRC) reviews all serious health care incidents (Levels 4-6) and makes recommendations regarding potential sentinel events and root cause analyses to promote patient safety and system improvement. In 2024, 59 mortality-related cases were referred to HCIRC. The severity levels of these incidents were not specified in the Mortality Review records.

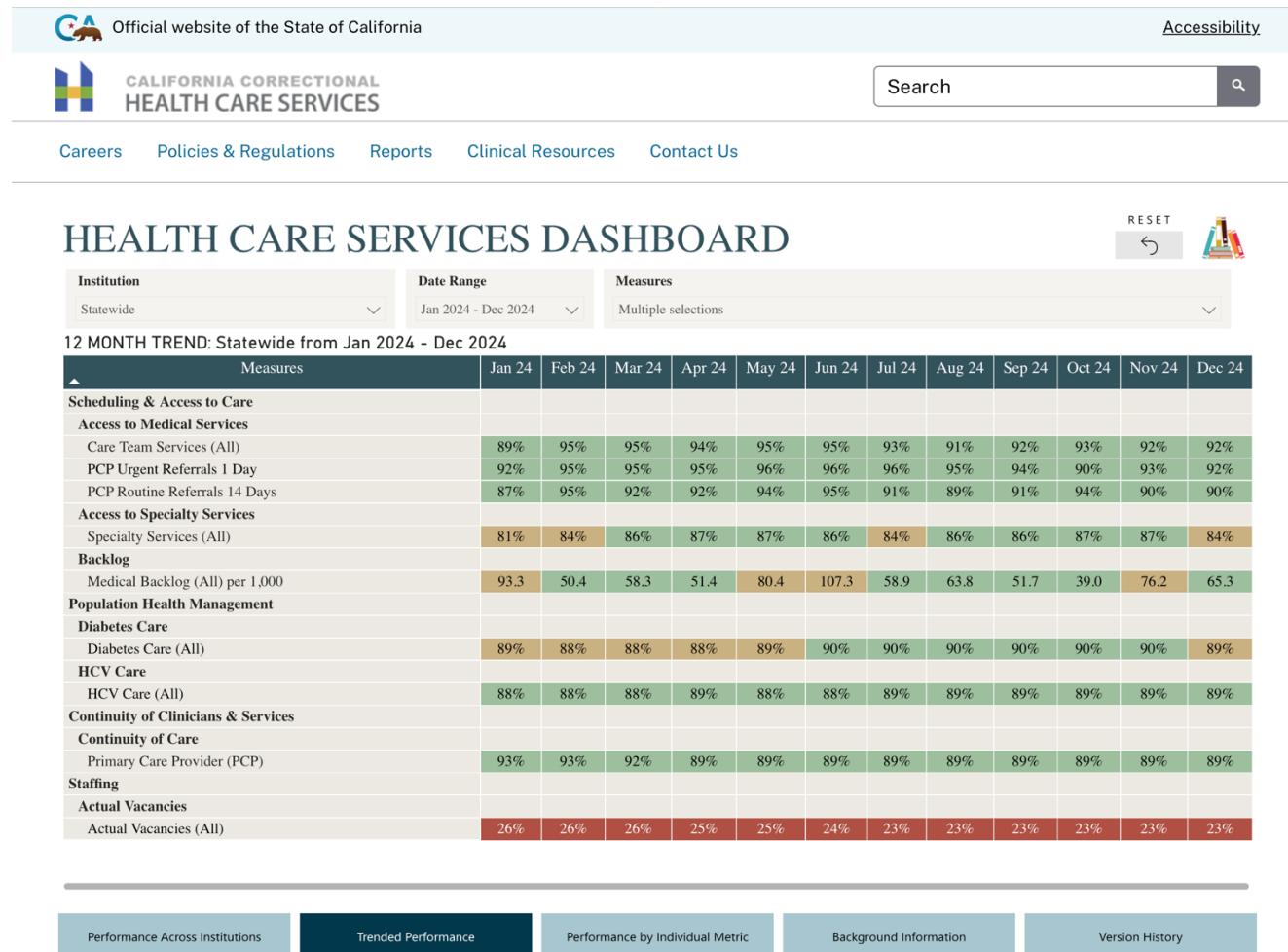
V. Quality Initiatives and Performance Improvement Tools

The Complete Care Model (CCM), established in 2015, remains the foundation of health care delivery in the California Correctional Health Care System (CCHCS). Its core principles—comprehensive, continuous, and patient-centered care—rely on a well-functioning health information system supported by a range of performance improvement tools.

The Health Care Services Dashboard, first implemented in 2012, is continuously refined to enhance oversight and accountability. It tracks adherence to best practices outlined in the CCHCS Care

Guides, allowing leaders and managers to monitor and analyze statewide and institutional performance over time. The dashboard currently includes 286 measures organized into 12 domains, such as Scheduling and Access to Care, Population Health Management, Resource Management, Staffing, and Costs.

Figure 15. Example View of CCHCS Health Care Services Dashboard for 2024



A screenshot of the California Correctional Health Care Services Dashboard showing 12-month trends in selected statewide metrics.

In addition to dashboards, patient registries support targeted monitoring and management in key clinical areas including cancer screening and treatment, advanced liver disease, diabetes, and hypertension. The Care Guides for specific clinical conditions—described earlier—serve as concise, evidence-based references for both clinicians and patients. They are intended for point-of-service use and provide practical guidance for daily patient management. In 2024, a new Care Guide for Chronic Coronary Disease was developed.

Other quality initiatives in 2024 included the Emergency Medical Response Program, the Hepatitis C Treatment Program, the Integrated Substance Use Disorder Treatment Program (including Medication-Assisted Therapy for narcotic addiction), Cancer Screening Programs for breast, cervical, colon, liver, and lung cancer, Adult Immunization Programs for contagious diseases, and the Suicide Prevention and Response Program. The Geriatric and Palliative Care Program addresses the health care needs of an expanding senior population. This program standardizes the approach to dementia and memory care, improves the approach to compassionate release and medical parole, and enhances palliative care and end-of-life services.

Finally, drawing on international best practices in correctional health reform, the developing California Model represents an important evolution in promoting health, dignity, and rehabilitation within the state's correctional system.

VI. Conclusions

The overall mortality rate in 2024 was 443 per 100,000, the highest recorded since the inception of the Receivership in 2006. This increase was driven primarily by persistently high rates of drug overdose deaths, which remained the leading cause of mortality among the incarcerated population. COVID-19-related mortality fell to one case in 2023 and two cases in 2024, marking the end of the pandemic that produced record deaths in 2020 and 2021 and demonstrating the importance of immunization in preventing death from COVID-19 infection. Homicides rose, while deaths due to cancer and cardiovascular disease increased modestly.

Systemwide improvements in care delivery continue to demonstrate the strength of the Complete Care Model (CCM) and the Quality Improvement framework established under the Receivership. The identification and resolution of Opportunities for Improvement (OFIs) have produced measurable progress, including fewer citations for missed substance use disorder referrals and improvements in end-of-life care. These advances reflect effective data monitoring, interdisciplinary collaboration, and adherence to evidence-based clinical standards.

Significant opportunities remain to reduce delays in care and improve the practice and documentation of Emergency Management protocols. Sustained focus on these areas—supported by consistent use of Care Guides, dashboards, and registries—will be essential to ensuring timely, coordinated, and patient-centered care.

The 2024 Mortality Review findings highlight both the progress achieved and the challenges that persist in providing constitutionally adequate health care within California's correctional system. As institutions transition from Receivership to CDCR management, the CCM principles of

comprehensive, continuous, and patient-centered care must remain foundational. By linking mortality review findings to statewide quality initiatives and maintaining a culture of learning, CCHCS can further advance equitable, effective, and patient-centered health care for California's incarcerated population.