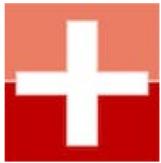


Insurance Collaboration to Save Lives

seek answers, save lives, mitigate loss

**The FDA's call for "all hands on deck" for
the "catastrophic" decline in U.S. longevity
and how proactive insurance leaders can help**



Disclaimer

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Who is the Collaboration? Our volunteers include...



Josh Stirling, MBA, JD **Founder of the Insurance Collaboration to Save Lives**, attorney, advisor, former chief ins. officer, managing director & #1 ranked ins. equity analyst



Teresa R. Winer, F.S.A., M.A.A.A. **L&H Actuary for the State of Georgia's Commissioner of Insurance**, ICSL treasurer and board member, former VP & two-term SOA board member



Kate Hendricks, MD, MPH TM. **Medical advisory team at ICSL**, former medical officer at the Centers for Disease Control and Prevention and Texas Department of State Health Services



Steve Cyboran, ASA, MAAA, FCA, CEBS, CEO @ Humaculture, Inc., actuary and behavioral health expert, ICSL product team leader



Mitch Bagley, MBA, **Insurance Collaboration to Save Lives board member** and marketing leader, former insurance broker



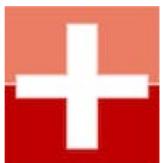
Richard H. Watts, MS, **Board member at Farmers Group, Inc.**, Apaly Health and Roost, advisor PE & VC backed ventures, and former President of Direct at Progressive Insurance.



Part I

The FDA's call for “all-hands-on-deck” for the “catastrophic” decline in U.S. longevity

& what's driving this tragedy?



The FDA has sounded an alarm on “catastrophic” mortality



Dr. Robert M. Califf  

@DrCaliff_FDA

...

We are facing extraordinary headwinds in our public health with a major decline in life expectancy. The major decline in the U.S. is not just a trend. I'd describe it as catastrophic.

1:52 PM · Nov 30, 2023 · **20.6K** Views

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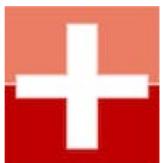
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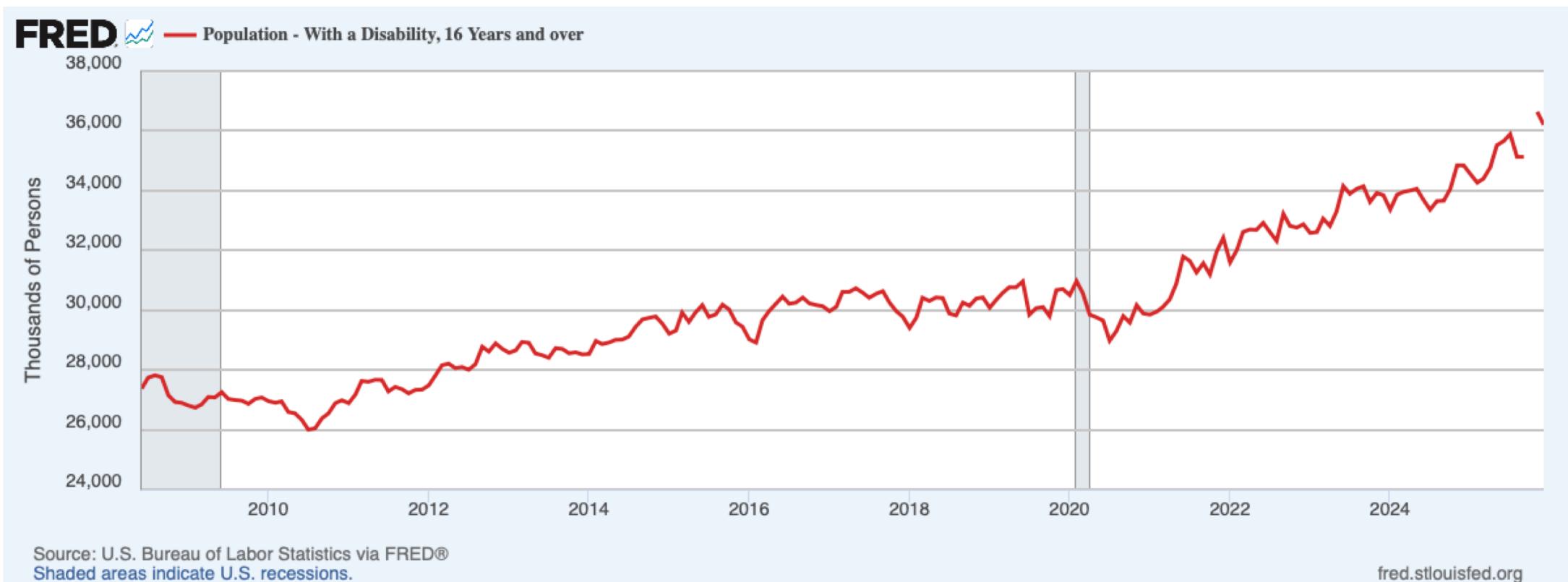
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Dr. Robert M. Califf is the Commissioner of the U.S. Food and Drug Administration



Disability is running at all-time highs

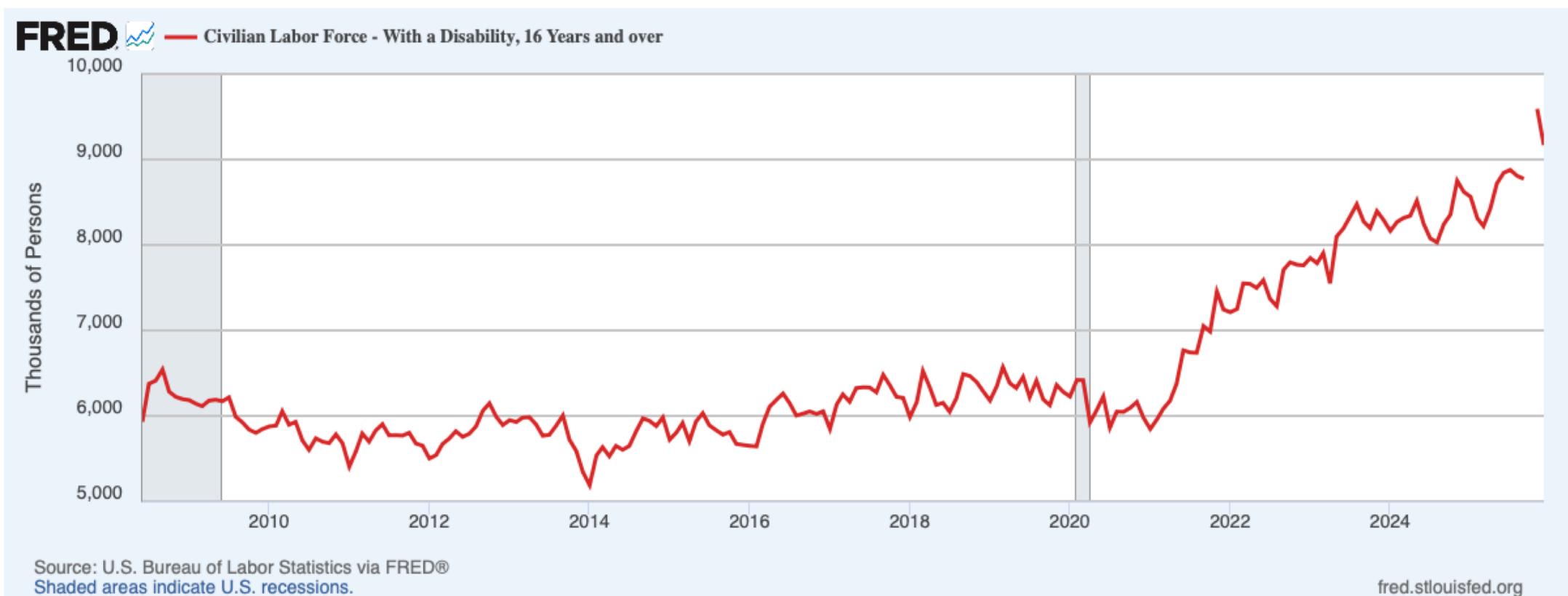
Since COVID ~6mm more reported disabled

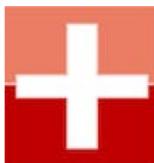




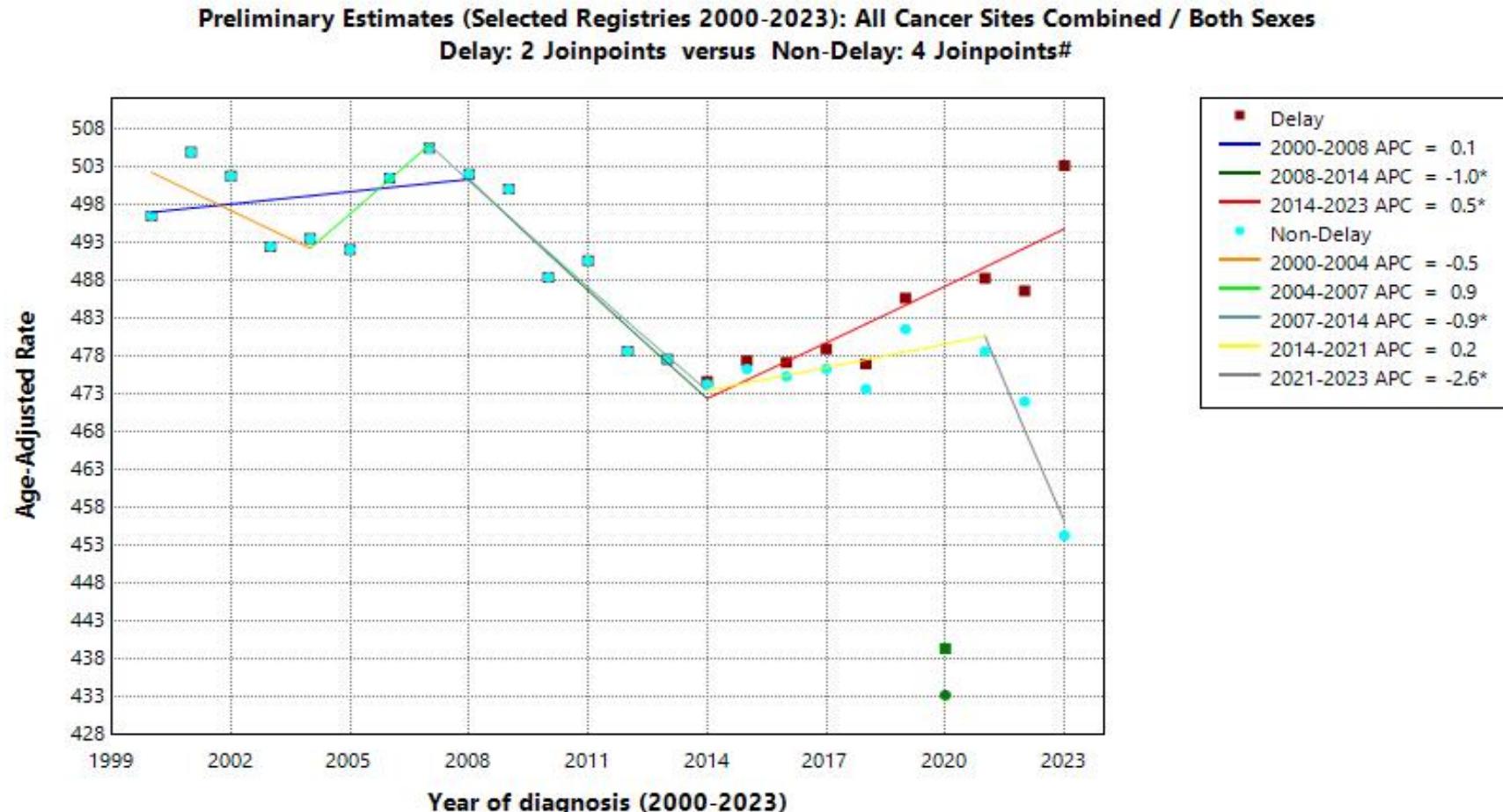
Civilian labor force disability has risen at a tragic rate

The rate among workers is up **+42%**





NIH SEER data shows U.S cancer incidence rates are rising



* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

The following Observed Y Value was excluded from the model fitting: 2020

Final Selected Model: Delay - 2 Joinpoints, Non-Delay - 4 Joinpoints.



Our team analyzed mortality and found five troubling trends



Cardiac & Circulatory

Rates for many cardiac & circulatory linked causes up **8-36%+**

But mortality from trad'l coronary artery disease is down 7%



Neurological & Nervous system

Rates for many key neuro/nervous causes up **16-39%+**

Including a shift younger for dementia e.g. **+22% for 65-74**



Metabolic & Digestive

Rates for many key metabolic & digestive causes up **10-137%+**

Nutrition too little, too much, can't digest & higher co-morbidity



Cancer

Rates for many key cancers have risen by **10-50%+**

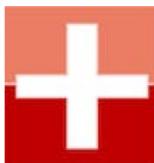
Nearly all cancers rising except for lung, breast, colon



External causes

Rate of accidents, assault, OD's up **11-30%+**

Self harm is down among young, up among old



#1 Cardiac & Circulatory

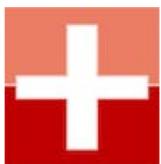
Cardiac & Circulatory Underlying Cause of Death per CDC

5yr change in rate	All	25-54	65+
Hypertensive	+36%	+12-17%	+30-38%
Rheumatic	+25%	+34-40%	+13-30%
Liver	+17%	+10-59%	+12-19%
Anemia	+11%	+24-127%	-1 to+9%
Strokes	+8%	-6 to+14%	+1-3%
Kidney	+5%	+8-43%	-1-3%
Pulmonary	+5%	-6 to+1%	-3 to+8%
Other heart	+2%	-7 to+3%	-5 to+3%
Arteries	-1%	+24-34%	-15 to 0%
Veins & Lymph	-1%	-7 to+15%	-13 to+5%
Ischemic (CAD)	-7%	-7 to -8%	-9 to -14%

U.S. Mortality Trends Map (Underlying Cause of Death)

Total Five Year Change
Change in Underlying Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Age	All											All Ages		
	< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85+ years			
deaths (000s)	16	2	3	28	59	94	154	361	611	783	872	2,984		
Underlying Cause of Death, ranked by 2023 count														
1 C00-C97 Malignant neoplasms	598	20%		0.73	0.92	1.04	0.89	0.98	0.90	0.89	0.93	0.95	0.99	1.00
2 I20-I25 Ischaemic heart diseases	348	12%			0.53	0.93	0.98	0.92	0.93	0.91	0.89	0.86	0.93	
3 I30-I51 Other forms of heart disease	213	7%	0.30		0.84	0.93	1.03	1.02	1.04	1.03	0.98	0.95	1.02	
4 G30-G31 Other degenerative diseases of the nervous system	177	6%				0.85	1.00	1.18	1.22	1.14	1.10	1.16		
5 W00-X59 Other external causes of accidental injury	166	6%	1.21	1.23	1.32	1.19	1.27	1.58	1.48	1.56	1.38	1.15	1.12	1.36
6 I60-I69 Cerebrovascular diseases	160	5%	1.14		3.38	0.94	1.14	1.09	1.05	1.03	1.01	1.03	1.08	
7 J40-J47 Chronic lower respiratory diseases	144	5%		0.78	0.57	1.63	1.09	0.93	0.71	0.84	0.86	0.83	0.82	0.89
8 I10-I15 Hypertensive diseases	132	4%			0.71	1.17	1.15	1.12	1.17	1.30	1.34	1.38	1.36	
9 F01-F09 Organic, including symptomatic, mental disorders	110	4%				0.55	1.03	1.00	0.91	0.86	0.91			
10 E10-E14 Diabetes mellitus	93	3%				1.05	1.38	1.08	1.08	1.07	1.01	1.03	1.02	1.10
11 K70-K76 Diseases of liver	65	2%				1.59	1.48	1.10	1.04	1.12	1.17	1.19	1.17	
12 N17-N19 Renal failure	53	2%				1.43	1.16	1.13	1.08	0.99	0.97	0.97	1.05	
13 U00-U49 Provisional assignment of new diseases of uncertain	50	2%												
14 X60-X84 Intentional self-harm	47	2%				0.74	0.92	1.05	1.05	0.95	0.91	0.95	1.05	1.12
15 A30-A49 Other bacterial diseases	45	2%		1.00	1.13	1.56	1.19	1.07	1.15	1.06	1.00	0.93	0.99	1.04
16 J09-J18 Influenza and pneumonia	43	1%		0.46	1.18	1.01	0.70	0.91	0.91	0.72	0.78	0.81	0.74	0.61
17 G20-G25 Extrapyramidal and movement disorders	42	1%							1.34	1.09	1.10	1.09	1.05	1.16
18 V01-V99 Transport accidents	40	1%	0.94	1.17	1.09	1.09	1.11	1.23	1.07	1.08	1.10	1.01	1.00	1.11
19 E70-E88 Metabolic disorders	36	1%	1.31	1.08	0.13	0.47	1.40	1.17	1.27	1.34	1.32	1.35		
20 J80-J84 Other respiratory diseases principally affecting the in	25	1%				0.69	0.94	0.88	0.93	0.94	1.01	1.07		
21 I70-I78 Diseases of arteries, arterioles and capillaries	23	1%				0.88	1.24	1.32	1.34	1.03	1.00	0.91	0.85	0.99
22 K55-K63 Other diseases of intestines	23	1%				0.80	0.91	1.72	1.19	1.14	1.11	1.04	0.98	1.11
23 E40-E46 Malnutrition	22	1%				0.41	2.22	2.01	2.00	2.21	2.23	2.37		
24 X85-Y09 Assault	21	1%	0.77	0.73	2.25	1.20	1.11	1.26	1.25	1.17	1.14	0.95	0.67	1.18
25 J60-J70 Lung diseases due to external agents	20	1%				1.41	1.61	1.09	1.05	1.05	1.02	0.97	0.86	0.99
26 J96-J98 Other diseases of the respiratory system	19	1%	0.56			1.08	1.23	1.03	1.08	1.07	1.14	1.16		
27 I26-I28 Pulmonary heart disease and diseases of pulmo	19	1%	0.76			0.80	0.94	0.94	1.01	1.01	0.97	0.96	1.08	1.05
28 F10-F19 Mental and behavioural disorders due to psychoactive	19	1%				0.42	1.28	1.73	1.25	1.27	1.51	1.22	1.11	1.37
29 R95-R99 Ill-defined and unknown causes of mortality	14	0%	1.00	1.32	1.07	1.43	1.45	1.54	1.37	1.14	1.06	0.85	0.66	1.07
30 N30-N39 Other diseases of urinary system	14	0%				1.07	0.95	0.96	1.23	1.17	1.13	1.01	1.14	
31 R50-R68 General symptoms and signs	13	0%				1.01	0.98	1.27	1.07	1.27	1.20	1.11	0.86	1.01
32 G90-G98 Other disorders of the nervous system	13	0%	0.30			0.96	1.12	1.07	0.89	0.90	0.93	1.02	1.14	1.02
33 D37-D48 Neoplasms of uncertain or unknown behaviour	13	0%				1.31	1.05	0.69	0.77	0.95	0.93	0.94	0.95	1.00
34 K90-K92 Other diseases of the digestive system	10	0%					1.38	1.24	0.96	1.05	1.07	1.03	0.90	1.03
35 K80-K86 Disorders of gallbladder, biliary tract and pancreas	10	0%					1.38	1.19	1.28	1.14	1.13	1.10	1.05	1.16
36 E65-E68 Obesity and other hyperalimentation	9	0%					1.47	1.29	1.14	1.18	1.09	1.04	1.12	1.23
37 G10-G14 Systemic atrophies primarily affecting the central ner	9	0%						2.07	1.26	0.93	0.99	0.98	0.99	0.88
38 A00-A09 Infectious diseases	7	0%	0.91					0.56	1.16	1.08	0.92	0.89	0.78	0.75
39 K20-K31 Diseases of oesophagus, stomach and duodenum	6	0%						0.81	0.83	0.97	1.41	1.23	1.01	1.18
40 G35-G37 Demyelinating diseases of the central nervous system	5	0%						0.83	0.80	0.88	0.95	0.95	1.34	1.18
41 G40-G47 Episodic and paroxysmal disorders	5	0%				2.45	1.19	1.22	1.21	1.07	1.08	1.19	1.20	1.28
42 D60-D64 Aplastic and other anaemias	4	0%						2.27	1.24	1.20	1.08	1.09	0.99	1.11
43 Y10-Y34 Event of undetermined intent	4	0%	1.92		1.34	0.89	0.80	0.96	0.72	0.86	1.12	1.08	0.62	0.88
44 M80-M94 Osteopathies and chondropathies	4	0%						0.68	1.61	1.40	1.37	1.39	1.04	1.30
45 B20-B24 Human immunodeficiency virus (HIV) disease	4	0%						1.07	0.89	0.58	0.82	1.07	1.53	0.84
46 I05-I09 Chronic rheumatic heart diseases	4	0%				0.23	1.40	1.34	1.37	1.30	1.13	1.17		1.25
47 I80-I89 Diseases of veins, lymphatic vessels and lymph	3	0%				0.96	1.15	1.12	0.93	0.87	1.05	0.87	0.95	0.99
48 L00-L08 Infections of the skin and subcutaneous tissue	3	0%						2.62	1.97	1.29	1.21	1.23	1.24	1.34
49 G80-G83 Cerebral palsy and other paralytic syndromes	3	0%				0.82	1.23	1.21	1.36	1.11	1.13	1.13	1.41	1.19
50 Y85-Y89 Sequelae of external causes of morbidity and mortali	3	0%				2.41	1.83	2.02	1.38	1.58	1.20	1.80	2.00	1.82
various All other UCDs not in top 50 individual sub chapters	73	2%	0.96	0.91	1.03	1.12	1.17	1.11	0.88	0.87	0.97	1.02	0.96	0.99
Grand Total	2,984	100%	0.97	1.15	1.09	1.09	1.16	1.24	1.05	1.00	1.01	1.01	1.06	



#1 Cardiac & Circulatory

Cardiac & Circulatory Contributing Cause of Death per CDC

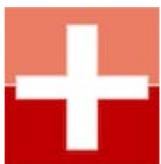
5yr change in rate	All	25-54	65+
Hypertensive	+31%	+20-29%	+25-27%
Veins & Lymph	+28%	+14-39%	+19-27%
Anemia	+25%	+33-38%	+10-23%
Kidney	+24%	+33-47%	+13-18%
Coagulation	+23%	+19-26%	+11-20%
Pulmonary	+23%	+7-10%	+14-28%
Other urinary	+19%	+20-32%	+7-21%
Liver	+18%	+6-45%	+14-29%
Strokes	+13%	-12 to +17%	+6-10%
Other heart	+8%	+0 to 12%	+2-3%
Arteries	+6%	-2 to +6%	-1 to +4%
Ischemic (CAD)	-1%	-2 to +4%	-2 to -6%

U.S. Mortality Trends Map (Multiple Cause of Death)

Total Five Year Change
Change in Contributing Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Note
MCD per UCD 3.36

Age	Age										Age													
	< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	All Ages	deaths (000s)	35	5	9	86	205	339	540	1,253	2,108	2,658	2,778	10,016
	0.3%	0.1%	0.1%	0.9%	2.1%	3.4%	5.4%	12.5%	21.0%	26.5%	100%		0.3%	0.1%	0.1%	0.9%	2.1%	3.4%	5.4%	12.5%	21.0%	26.5%	27.7%	100%
Multiple Cause of Death, ranked by # of 2023 MCDs																								
1 I30-I51 Other forms of heart disease	1,258	13%	0.87	0.93	0.89	0.89	1.00	1.12	1.05	1.06	1.05	1.03	1.02	1.08										
2 C00-C97 Malignant neoplasms	884	9%	0.59	0.83	0.83	0.88	1.01	0.96	0.95	0.99	1.03	1.06	1.07											
3 I10-I15 Hypertensive diseases	698	7%			1.02	1.27	1.29	1.20	1.21	1.25	1.26	1.27	1.31											
4 I20-I25 Ischaemic heart diseases	625	6%			0.58	0.98	1.04	0.96	0.97	0.94	0.94	0.92	0.99											
5 F10-F19 Mental and behavioural disorders due to psychoactive substances	466	5%					1.14	1.29	1.53	1.13	1.06	1.00	0.91	0.93	1.08									
6 J95-J98 Other diseases of the respiratory system	447	4%	0.93	1.19	1.06	1.14	1.18	1.30	1.13	1.12	1.12	1.15	1.17	1.21										
7 R50-R68 General symptoms and signs	341	3%	1.06	0.80	0.98	1.10	1.23	1.31	1.22	1.16	1.20	1.13	0.98	1.14										
8 E10-E14 Diabetes mellitus	341	3%					0.92	1.29	1.12	1.11	1.11	1.07	1.13	1.16										
9 J40-J47 Chronic lower respiratory diseases	339	3%			0.38	0.74	1.04	1.21	1.02	0.86	0.96	0.97	0.95	0.94	1.02									
10 I60-I69 Cerebrovascular diseases	299	3%	0.70	1.14	0.96	0.86	0.88	1.17	1.13	1.12	1.10	1.06	1.08	1.13										
11 N17-N19 Renal failure	262	3%	0.94	4.14	2.23	1.14	1.46	1.47	1.33	1.26	1.18	1.15	1.13	1.24										
12 A30-A49 Other bacterial diseases	261	3%	0.83	1.37	1.30	0.97	1.18	1.27	1.14	1.10	1.08	1.08	1.00	1.13										
13 F01-F09 Organic, including symptomatic, mental disorders	251	3%					0.76	1.75	0.92	1.14	1.11	1.03	0.97	1.03										
14 T36-T50 Poisoning by drugs, medicaments and biological substances	237	2%			2.25		7.35	1.13	1.28	1.61	1.54	1.73	2.07	1.43	0.86	1.52								
15 E70-E89 Metabolic disorders	234	2%	1.10	0.55	1.28	0.48	0.95	1.39	1.35	1.34	1.40	1.39												
16 W00-X59 Other external causes of accidental injury	224	2%	1.10	0.90	0.99	1.17	1.27	1.55	1.41	1.47	1.29	1.11	1.07	1.30										
17 G30-G31 Other degenerative diseases of the nervous system	212	2%							1.11	1.17	1.19	1.12	1.09											
18 R00-R09 Symptoms and signs involving the circulatory and respiratory systems	171	2%	1.07	0.78	0.81	1.07	0.98	1.17	1.13	1.12	1.17	1.16	1.11	1.20										
19 J09-J18 Influenza and pneumonia	165	2%	1.00	1.36	0.84	0.82	1.06	1.14	1.01	1.02	1.04	0.99	0.85	1.00										
20 K70-K76 Diseases of liver	149	1%	1.04			0.77	1.45	1.37	1.06	1.01	1.14	1.25	1.29	1.18										
21 I70-I78 Diseases of arteries, arterioles and capillaries	91	1%					0.98	1.05	1.06	1.03	1.04	1.01	0.99											
22 E40-E46 Malnutrition	86	1%					0.62	1.53	1.60	1.34	1.52	1.75	1.79	1.90	1.86									
23 T08-T14 Injuries to unspecified part of trunk, limb or body region	83	1%	0.84	0.95	1.45	1.23	1.24	1.32	1.19	1.13	1.11	1.20	1.19	1.22										
24 I26-I28 Pulmonary heart disease and diseases of pulmonary circulation	82	1%	0.75	0.99	1.10	0.96	1.07	1.08	1.10	1.13	1.14	1.14	1.17	1.28	1.23									
25 S00-S09 Injuries to the head	80	1%	0.71	0.80	1.00	0.98	1.05	1.13	1.03	1.00	0.99	1.10	1.13											
26 U00-U49 Provisional assignment of new diseases of uncertain etiology	78	1%																						
27 G90-G98 Other disorders of the nervous system	71	1%	1.07	0.76	0.95	1.04	1.09	1.19	1.02	1.02	1.03	1.08	1.19											
28 D60-D64 Aplastic and other anemias	68	1%					0.61	1.38	1.36	1.33	1.27	1.23	1.20	1.10	1.25									
29 J60-J70 Lung diseases due to external agents	68	1%					0.77	1.20	1.52	1.29	1.11	1.10	1.08	0.97	0.89	1.03								
30 R10-R19 Symptoms and signs involving the digestive system and liver	67	1%	0.86			1.09	0.94	1.43	1.33	1.26	1.22	1.21	1.12	1.04	1.17									
31 G20-G25 Extrapyramidal and movement disorders	63	1%																						
32 E65-E68 Obesity and other hyperalimentation	63	1%						1.18	1.31	1.29	1.28	1.25	1.14	1.10	1.05	1.17								
33 J80-J84 Other respiratory diseases principally affecting the interstitium	61	1%	1.17	0.74	1.02	0.95	0.88	1.04	0.94	1.01	1.02	1.12	1.15	1.14										
34 K55-K63 Other diseases of intestines	58	1%	0.68			0.38	1.42	1.36	1.20	1.16	1.14	1.10	1.07	1.02	1.15									
35 N30-N39 Other diseases of urinary system	55	1%					1.39	1.32	1.29	1.20	1.21	1.21	1.15	1.07	1.19									
36 X60-X84 Intentional self-harm	48	0%					0.63	0.90	1.02	0.92	0.90	0.94	0.90	0.94	1.05	1.09	0.97	0.89	0.88	0.97				
37 R95-R99 Ill-defined and unknown causes of mortality	44	0%	0.99	1.22	1.05	1.17	1.34	1.38	1.20	1.03	0.96	0.95	0.83	1.02										
38 G40-G47 Episodic and paroxysmal disorders	42	0%	1.69	1.18	1.73	1.35	1.32	1.27	1.23	1.19	1.27	1.42	1.46	1.39										
39 K90-K92 Other diseases of the digestive system	41	0%					1.98	1.53	1.49	1.03	1.03	1.09	1.09	0.96	1.10									
40 V01-V99 Transport accidents	38	0%					0.85	0.92	1.04	1.07	1.17	1.01	1.01	1.03	0.93	0.89	1.05							
41 E00-E07 Disorders of thyroid gland	34	0%					1.07	1.14	1.33	1.31	1.32	1.19	1.09	1.09	1.22									
42 I80-I89 Diseases of veins, lymphatic vessels and lymph nodes	32	0%					1.03	1.39	1.36	1.14	1.15	1.27	1.26	1.19	1.28									
43 K20-K31 Diseases of oesophagus, stomach and duodenum	29	0%							1.45	1.10	1.11	1.08	1.22	1.19	1.08	1.08	1.08	1.08	1.08	1.08	1.08			
44 T86-T78 Other and unspecified effects of external causes	28	0%	1.19	1.11	0.78	0.76	0.91	1.04	0.94	0.98	1.12	1.10	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
45 T00-T07 Injuries involving multiple body regions	28	0%					0.73	0.99	1.10	1.07	1.23	1.11	1.05	1.06	1.13	1.12	1.11							
46 J80-J84 Other diseases of pleura	26	0%	0.77					2.02	1.06	1.25	1.38	1.30	1.29	1.26	1.29	1.35								
47 F30-F39 Mood (affective) disorders	26	0%						0.72	0.96	1.18	1.08	1.12	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23			
48 M00-M25 Arthropathies	24	0%							1.38	1.14	1.02	1.06	1.06	0.99	0.99	0.98	0.98	0.98	0.98	0.98	0.98			
49 T51-T65 Toxic effects of substances chiefly nonmedicinal as to s	24	0%	0.64	0.74	1.07	1.19	1.27	1.04	1.18	1.16	1													



#2 Nervous & Neurological

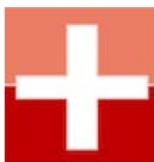
Nervous & Neurological Underlying Cause of Death per CDC

5yr change in rate	All	25-54	65+
Episodic disorders	+23%	+7 to 22%	+19 to 28%
Cerebral & paralysis	+19%	+11-36%	+13 to 41%
Movement disorders	+16%	+9-34%	+5-10%
Other degenerative	+16%	-15 to +17%	+10-22%
Demylenating CNS	+9%	-12 to -20%	-5 to +34%
Systemic CNS	+5%	-7 to +107%	-12-1%
Other disorders	+2%	-11 to +12%	-7 to +14%

U.S. Mortality Trends Map (Underlying Cause of Death)

Total Five Year Change
Change in Underlying Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Age	All Ages, All Causes, (All) & (All)														
	< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years					
deaths (000s)										All Ages					
	16	2	3	28	59	94	154	361	611	783	872	2,984			
Underlying Cause of Death, ranked by 2023 count										All Ages					
1 C00-C97 Malignant neoplasms	598	20%		0.73	0.92	1.04	0.89	0.98	0.90	0.89	0.93	0.95	0.99	1.00	
2 I20-I25 Ischaemic heart diseases	348	12%			0.53	0.93	0.98	0.92	0.93	0.91	0.89	0.86	0.93		
3 I30-I51 Other forms of heart disease	213	7%		0.30		0.84	0.93	1.03	1.02	1.04	1.03	0.98	0.95	1.02	
4 G30-G31 Other degenerative diseases of the nervous system	177	6%				0.85	1.00	1.18	1.22	1.14	1.10	1.16			
5 W00-X59 Other external causes of accidental injury	166	6%	1.21	1.23	1.32	1.19	1.27	1.58	1.48	1.56	1.36	1.15	1.12	1.36	
6 I60-I69 Cerebrovascular diseases	160	5%	1.14		3.38	0.94	1.14	1.09	1.05	1.03	1.01	1.03	1.08		
7 J40-J47 Chronic lower respiratory diseases	144	5%	0.78	0.57	1.63	1.09	0.93	0.71	0.84	0.86	0.83	0.82	0.89		
8 I10-I15 Hypertensive diseases	132	4%			0.71	1.17	1.15	1.12	1.17	1.30	1.34	1.38			
9 F01-F09 Organic, including symptomatic, mental disorders	110	4%					0.55	1.03	1.00	0.91	0.86	0.91			
10 E10-E14 Diabetes mellitus	93	3%				1.05	1.38	1.08	1.07	1.01	1.03	1.02			
11 K70-K78 Diseases of liver	65	2%					1.59	1.48	1.10	1.04	1.12	1.17	1.19	1.17	
12 N17-N19 Renal failure	53	2%					1.43	1.16	1.13	1.08	0.99	0.97	0.97	1.05	
13 U00-U49 Provisional assignment of new diseases of uncertain	50	2%				0.74	0.92	1.05	1.05	0.95	0.91	0.95	1.05	1.12	
14 X60-X84 Intentional self-harm	47	2%		1.00	1.13	1.56	1.19	1.07	1.15	1.06	1.00	1.03	0.99	0.91	1.04
15 A30-A49 Other bacterial diseases	45	2%			1.00	1.13	1.56	1.19	1.07	1.15	1.06	1.00	1.03	0.99	1.04
16 J09-J18 Influenza and pneumonia	43	1%	0.46	1.18	1.01	0.70	0.91	0.91	0.72	0.78	0.81	0.74	0.61	0.74	
17 G20-G25 Extrapyramidal and movement disorders	42	1%							1.34	1.09	1.10	1.09	1.05	1.16	
18 V01-V99 Transport accidents	40	1%	0.94	1.17	1.09	1.09	1.11	1.23	1.07	1.08	1.10	1.01	1.00	1.11	
19 E70-E88 Metabolic disorders	36	1%			1.31	1.08	0.13	0.47	1.40	1.17	1.27	1.34	1.32	1.35	1.38
20 J80-J84 Other respiratory diseases principally affecting the in	25	1%					0.69	0.94	0.88	0.93	0.94	1.01	1.07		
21 I70-I78 Diseases of arteries, arterioles and capillaries	23	1%				0.88	1.24	1.32	1.34	1.03	1.00	0.91	0.85	0.99	
22 K55-K63 Other diseases of intestines	23	1%				0.80	0.91	1.72	1.19	1.14	1.11	1.04	0.98	1.11	
23 E40-E46 Malnutrition	22	1%				0.41	2.22	2.01	2.00	2.21	2.23	2.37			
24 X85-Y09 Assault	21	1%	0.77	0.73	2.25	1.20	1.11	1.26	1.25	1.17	1.14	0.95	0.67	1.18	
25 J60-J70 Lung diseases due to external agents	20	1%				1.41	1.61	1.09	1.05	1.05	1.02	0.97	0.86	0.99	
26 J96-J98 Other diseases of the respiratory system	19	1%	0.56			1.08	1.23	1.03	1.08	1.07	1.14	1.16	1.18		
27 I26-I28 Pulmonary heart disease and diseases of pulmonary	19	1%	0.76			0.80	0.94	0.94	1.01	1.03	0.97	0.96	1.08		
28 F10-F19 Mental and behavioural disorders due to psychoactive	19	1%				0.42	1.28	1.73	1.25	1.27	1.51	1.22	1.11	1.37	
29 R95-R99 Ill-defined and unknown causes of mortality	14	0%	1.00	1.32	1.07	1.43	1.45	1.54	1.37	1.14	1.06	0.85	0.66	1.07	
30 N30-N39 Other diseases of urinary system	14	0%				1.07	0.95	0.96	1.23	1.17	1.13	1.01	1.14		
31 R50-R58 General symptoms and signs	13	0%				1.01	0.98	1.27	1.07	1.27	1.20	1.11	0.86	1.01	
32 G90-G98 Other disorders of the nervous system	13	0%	0.30		0.96	1.12	1.07	0.89	0.90	0.93	1.02	1.14	1.02		
33 D37-D48 Neoplasms of uncertain or unknown behaviour	13	0%			1.31	1.05	0.69	0.77	0.95	0.93	0.94	0.95	1.00		
34 K90-K92 Other diseases of the digestive system	10	0%				1.38	1.24	0.96	1.05	1.07	1.03	0.90	1.03		
35 K80-K86 Disorders of gallbladder, biliary tract and pancreas	10	0%				1.38	1.19	1.28	1.14	1.13	1.10	1.05			
36 E65-E68 Obesity and other hyperalimentation	9	0%				1.47	1.29	1.14	1.18	1.09	1.04	1.12	1.23	1.15	
37 G10-G14 Systemic atrophies primarily affecting the centri	9	0%					2.07	1.26	0.93	0.99	0.99	0.88	1.05		
38 A00-A09 Intestinal infectious diseases	7	0%	0.91				0.56	1.16	1.08	0.92	0.89	0.78	0.75	0.86	
39 K20-K31 Diseases of oesophagus, stomach and duodenum	6	0%					0.81	0.83	0.97	1.41	1.23	1.01			
40 G35-G37 Demyelinating diseases of the central nervous s	5	0%				0.83	0.80	0.88	0.95	0.95	1.34	1.18	1.09		
41 G40-G47 Episodic and paroxysmal disorders	5	0%	2.45	1.19	1.22	1.21	1.07	1.08	1.19	1.20	1.28	1.23			
42 D60-D64 Aplastic and other anaemias	4	0%					2.27	1.24	1.20	1.08	1.09	0.99	1.11		
43 Y10-Y34 Event of undetermined intent	4	0%	1.92	1.34	0.89	0.80	0.96	0.72	0.86	1.12	1.08	0.62	0.88		
44 M80-M94 Osteopathies and chondropathies	4	0%					0.68	1.61	1.40	1.37	1.39	1.04	1.30		
45 B20-B24 Human immunodeficiency virus (HIV) disease	4	0%				1.07	0.89	0.58	0.82	1.07	1.53	0.84			
46 I05-I09 Chronic rheumatic heart diseases	4	0%				0.23	1.40	1.34	1.37	1.30	1.13	1.17			
47 I80-I89 Diseases of veins, lymphatic vessels and lymph nod	3	0%				0.96	1.15	1.12	0.93	0.87	1.05	0.87	0.95	0.99	
48 L00-L08 Infections of the skin and subcutaneous tissue	3	0%					2.62	1.97	1.29	1.21	1.23	1.24	1.34		
49 G80-G83 Cerebral palsy and other paralytic syndromes	3	0%			0.82	1.23	1.21	1.36	1.11	1.11	1.13	1.41	1.19		
50 Y85-Y89 Sequelae of external causes of morbidity and mortali	3	0%			2.41	1.83	2.02	1.38	1.58	2.00	1.80	2.00	1.82		
various All other UCDs not in top 50 individual sub chapters	73	2%	0.96	0.91	1.03	1.12	1.17	1.11	0.88	0.87	0.97	1.02	0.96	0.99	
Grand Total			2,984	100%	0.97	1.15	1.09	1.09	1.16	1.24	1.05	1.00	1.01	1.00	



#2 Nervous & Neurological

Nervous & Neurological Contributing Cause of Death per CDC

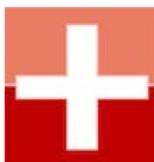
5yr change in rate	All	25-54	65+
Episodic disorders	+39%	+23-32%	+27-46%
Movement disorders	+17%	+25%	+5-11%
Other degenerative	+15%	+11%	+9-19%
Other disorders	+12%	+2-19%	+3-19%

U.S. Mortality Trends Map (Multiple Cause of Death)

Total Five Year Change
Change in Contributing Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Note
MCD per UCD 3.36

Age	Multiple Cause of Death, ranked by # of 2023 MCDs										All Ages			
	< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years				
deaths (000s)	35	5	9	86	205	339	540	1,253	2,108	2,658	2,778	10,016		
	0.3%	0.1%	0.1%	0.9%	2.1%	3.4%	5.4%	12.5%	21.0%	26.5%	27.7%	100%		
1 I30-I51 Other forms of heart disease	1,258	13%	0.87	0.93	0.89	0.89	1.00	1.12	1.05	1.06	1.05	1.03	1.02	1.08
2 C00-C97 Malignant neoplasms	884	9%	0.59	0.83	0.83	0.88	1.01	0.96	0.95	0.99	1.03	1.06	1.07	
3 I10-I15 Hypertensive diseases	698	7%					1.02	1.27	1.29	1.20	1.21	1.25	1.26	1.27
4 I20-I25 Ischaemic heart diseases	625	6%					0.58	0.98	1.04	0.96	0.97	0.94	0.94	0.99
5 F10-F19 Mental and behavioural disorders due to psychoactive si	466	5%					1.14	1.29	1.53	1.13	1.06	1.00	0.91	1.08
6 J95-J98 Other diseases of the respiratory system	447	4%	0.93	1.19	1.06	1.14	1.18	1.30	1.13	1.12	1.12	1.15	1.17	1.21
7 R50-R69 General symptoms and signs	341	3%	1.06	0.80	0.98	1.10	1.23	1.31	1.22	1.16	1.20	1.13	0.98	1.14
8 E10-E14 Diabetes mellitus	341	3%					0.92	1.29	1.12	1.11	1.11	1.07	1.13	1.16
9 J40-J47 Chronic lower respiratory diseases	339	3%					0.38	0.74	1.04	1.21	1.02	0.86	0.96	0.97
10 I60-I69 Cerebrovascular diseases	299	3%	0.70	1.14	0.96	0.86	0.88	1.17	1.13	1.12	1.10	1.06	1.08	1.13
11 N17-N19 Renal failure	262	3%	0.94	4.14	2.23	1.14	1.46	1.47	1.33	1.26	1.18	1.15	1.13	1.24
12 A30-A49 Other bacterial diseases	261	3%	0.83	1.37	1.30	0.97	1.18	1.27	1.14	1.10	1.08	1.08	1.00	1.13
13 F01-F09 Organic, including symptomatic, mental disorders	251	3%					0.76	1.75	0.92	1.14	1.11	1.03	0.97	1.03
14 T36-T50 Poisoning by drugs, medicaments and biological substa	237	2%	2.25		7.35	1.13	1.28	1.61	1.54	1.73	2.07	1.43	0.86	1.52
15 E70-E89 Metabolic disorders	234	2%	1.10	0.55	1.28	0.48	0.95	1.39	1.35	1.34	1.40	1.40	1.39	1.46
16 W00-X59 Other external causes of accidental injury	224	2%	1.10	0.90	0.99	1.17	1.27	1.55	1.41	1.47	1.29	1.11	1.07	1.30
17 G30-G31 Other degenerative diseases of the nervous system	212	2%							1.11	1.17	1.19	1.12	1.09	1.15
18 R00-R09 Symptoms and signs involving the circulatory and respir	171	2%	1.07	0.78	0.81	1.07	0.98	1.17	1.13	1.12	1.17	1.16	1.11	1.20
19 J09-J18 Influenza and pneumonia	165	2%	1.00	1.36	0.84	0.82	1.06	1.14	1.01	1.02	1.04	0.99	0.85	1.00
20 K70-K76 Diseases of liver	149	1%	1.04				0.77	1.45	1.37	1.06	1.01	1.14	1.25	1.29
21 I70-I78 Diseases of arteries, arterioles and capillaries	91	1%						0.98	1.05	1.06	1.03	1.04	1.01	0.99
22 E40-E46 Malnutrition	86	1%						0.62	1.53	1.60	1.34	1.52	1.75	1.79
23 T08-T14 Injuries to unspecified part of trunk, limb or body region	83	1%	0.84	0.95	1.45	1.23	1.24	1.32	1.19	1.13	1.11	1.20	1.19	1.22
24 I26-I29 Pulmonary heart disease and diseases of pulmonary cir	82	1%	0.75	0.99	1.10	0.96	1.07	1.09	1.10	1.13	1.14	1.17	1.28	1.23
25 S00-S09 Injuries to the head	80	1%	0.71	0.80	1.00	0.98	1.05	1.13	1.03	1.00	0.99	1.10	1.13	1.08
26 U00-U49 Provisional assignment of new diseases of uncertain eti	78	1%												
27 G90-G98 Other disorders of the nervous system	71	1%	1.07	0.76	0.95	1.04	1.09	1.19	1.02	1.02	1.03	1.08	1.19	1.12
28 D60-D64 Aplastic and other anaemias	68	1%						0.61	1.38	1.36	1.33	1.27	1.23	1.20
29 J60-J70 Lung diseases due to external agents	68	1%					0.77	1.20	1.52	1.29	1.11	1.10	1.08	0.89
30 R10-R19 Symptoms and signs involving the digestive system and	67	1%	0.86		1.09	0.94	1.43	1.33	1.26	1.22	1.21	1.12	1.04	1.17
31 G20-G25 Extrapyramidal and movement disorders	63	1%							1.25	1.14	1.10	1.11	1.05	1.17
32 E65-E68 Obesity and other hyperalimentation	63	1%						1.18	1.31	1.29	1.28	1.25	1.27	1.46
33 J80-J84 Other respiratory diseases principally affecting the inter	61	1%	1.17	0.74	1.02	0.95	0.88	1.04	0.94	1.01	1.02	1.12	1.15	1.14
34 K55-K63 Other diseases of intestines	58	1%	0.68					0.38	1.42	1.36	1.20	1.16	1.14	1.07
35 N30-N39 Other diseases of urinary system	55	1%						1.39	1.32	1.29	1.20	1.21	1.21	1.15
36 X60-X84 Intentional self-harm	48	0%					0.63	0.90	1.02	1.03	0.92	0.90	0.94	1.09
37 R95-R99 Ill-defined and unknown causes of mortality	44	0%	0.99	1.22	1.05	1.17	1.34	1.38	1.20	1.03	0.96	0.95	0.83	1.02
38 G40-G47 Episodic and paroxysmal disorders	42	0%	1.69	1.18	1.73	1.35	1.32	1.27	1.23	1.19	1.27	1.42	1.46	1.39
39 K90-K92 Other diseases of the digestive system	41	0%						1.98	1.53	1.49	1.03	1.03	1.09	1.06
40 V01-V99 Transport accidents	38	0%					0.85	0.92	1.04	1.07	1.17	1.01	1.03	0.93
41 E00-E07 Disorders of thyroid gland	34	0%						1.07	1.14	1.33	1.31	1.32	1.19	1.09
42 I80-I89 Diseases of veins, lymphatic vessels and lymph nodes,	32	0%						1.03	1.39	1.36	1.14	1.15	1.27	1.26
43 K20-K31 Diseases of oesophagus, stomach and duodenum	29	0%							1.45	1.10	1.11	1.08	1.22	1.19
44 T66-T78 Other and unspecified effects of external causes	28	0%	1.19	1.11	0.78	0.76	0.91	1.04	0.94	0.98	1.12	1.10	0.99	0.98
45 T00-T07 Injuries involving multiple body regions	28	0%					0.73	0.99	1.10	1.07	1.23	1.11	1.05	1.13
46 J90-J94 Other diseases of pleura	26	0%	0.77					2.02	1.06	1.25	1.38	1.30	1.29	1.26
47 F30-F39 Mood [affective] disorders	26	0%						0.72	0.96	1.18	1.08	1.12	1.23	1.21
48 M00-M25 Arthropathies	24	0%								1.38	1.14	1.02	1.06	0.99
49 T51-T65 Toxic effects of substances chiefly nonmedicinal as to s	24	0%					0.64	0.74	1.07	1.19	1.27	1.04	1.16	1.00
50 D65-D69 Coagulation defects, purpura and other haemorrhagic cc	23	0%	1.43					1.12	1.26	1.39	1.19	1.11	1.20	1.11
various All other MCDs not in top 50	594	6%	0.98	0.76	1.06	1.00	0.94	1.04	0.91	0.96	1.05	1.09	1.07	1.08
Grand Total	10,016	0%	0.99	0.97	0.99	1.05	1.16	1.30	1.12	1.09	1.09	1.08	1.14	



#3 Metabolic & Digestive

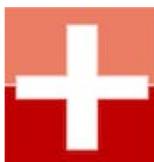
Metabolic & Digestive Underlying Cause of Death per CDC

5yr change in rate	All	25-54	65+
Malnutrition	+137%	-59 to +122%	+121-137%
Metabolic disorder	+38%	-53 to +40%	+32-35%
Oesop, stomach etc	+18%	-17-19%	+1-41%
Obesity	+15%	+18-29%	+4-23%
Other intestines	+11%	-9 to +72%	-2 to +11%
Diabetes mellitus	+10%	+8-38%	+1-3%
Other digestive	+3%	-4 to +38%	-10 to +7%

U.S. Mortality Trends Map (Underlying Cause of Death)

Total Five Year Change
Change in Underlying Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Age	deaths (000s)	All Ages													
		< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years				
Underlying Cause of Death, ranked by 2023 count															
1 C00-C97	Malignant neoplasms	598	20%	0.73	0.92	1.04	0.89	0.98	0.90	0.89	0.93	0.95	0.99	1.00	
2 I20-I25	Ischaemic heart diseases	348	12%		0.53	0.93	0.98	0.92	0.93	0.91	0.89	0.86	0.93		
3 I30-I51	Other forms of heart disease	213	7%	0.30		0.84	0.93	1.03	1.02	1.04	1.03	0.98	0.95	1.02	
4 G30-G31	Other degenerative diseases of the nervous system	177	6%			0.85	1.00	1.18	1.22	1.14	1.10	1.16			
5 W00-X59	Other external causes of accidental injury	166	6%	1.21	1.23	1.32	1.19	1.27	1.58	1.48	1.56	1.38	1.15	1.12	1.36
6 I60-I69	Cerebrovascular diseases	160	5%	1.14		3.38	0.94	1.14	1.09	1.05	1.03	1.01	1.03	1.08	
7 J40-J47	Chronic lower respiratory diseases	144	5%	0.78	0.57	1.63	1.09	0.93	0.71	0.84	0.86	0.83	0.82	0.89	
8 I10-I15	Hypertensive diseases	132	4%			0.71	1.17	1.15	1.12	1.17	1.30	1.34	1.38	1.36	
9 F01-F09	Organic, including symptomatic, mental disorders	110	4%				0.55	1.03	1.00	0.91	0.86	0.91			
10 E10-E14	Diabetes mellitus	93	3%				1.05	1.38	1.08	1.08	1.07	1.01	1.03	1.02	1.10
11 K70-K76	Diseases of liver	65	2%				1.59	1.48	1.10	1.04	1.12	1.17	1.19	1.17	
12 N17-N19	Renal failure	53	2%				1.43	1.16	1.13	1.08	0.99	0.97	0.97	1.05	
13 U00-U49	Provisional assignment of new diseases of uncertain	50	2%												
14 X60-X84	Intentional self-harm	47	2%			0.74	0.92	1.05	1.05	0.95	0.91	0.95	1.05	1.12	0.99
15 A30-A49	Other bacterial diseases	45	2%	1.00	1.13	1.56	1.19	1.07	1.15	1.06	1.00	1.03	0.99	0.91	1.04
16 J09-J18	Influenza and pneumonia	43	1%	0.46	1.18	1.01	0.70	0.91	0.91	0.72	0.78	0.81	0.74	0.61	0.74
17 G20-G25	Extrapyramidal and movement disorders	42	1%					1.34	1.09	1.10	1.09	1.05			
18 V01-V99	Transport accidents	40	1%	0.94	1.17	1.09	1.09	1.11	1.23	1.07	1.08	1.10	1.01	1.00	1.11
19 E70-E88	Metabolic disorders	36	1%		1.31	1.08	0.13	0.47	1.40	1.17	1.27	1.34	1.32	1.35	1.38
20 J80-J84	Other respiratory diseases principally affecting the in	25	1%				0.69	0.94	0.88	0.93	0.94	1.01	1.07		
21 I70-I78	Diseases of arteries, arterioles and capillaries	23	1%				0.88	1.24	1.32	1.34	1.03	1.00	0.91	0.85	0.99
22 K55-K63	Other diseases of intestines	23	1%			0.80	0.91	1.72	1.19	1.14	1.11	1.04	0.98	1.11	
23 E40-E46	Malnutrition	22	1%			0.41	2.22	2.01	2.00	2.21	2.23	2.37			
24 X85-Y09	Assault	21	1%	0.77	0.73	2.25	1.20	1.11	1.26	1.25	1.17	1.14	0.95	0.67	1.18
25 J60-J70	Lung diseases due to external agents	20	1%			1.41	1.61	1.09	1.05	1.05	1.02	0.97	0.86	0.99	
26 J96-J98	Other diseases of the respiratory system	19	1%	0.56		1.08	1.23	1.03	1.08	1.07	1.14	1.16	1.18		
27 I26-I28	Pulmonary heart disease and diseases of pulmonary	19	1%	0.76		0.80	0.94	0.94	1.01	1.03	0.97	0.96	1.08	1.05	
28 F10-F19	Mental and behavioural disorders due to psychoactive	19	1%			0.42	1.28	1.73	1.25	1.27	1.51	1.22	1.11	1.37	
29 R95-R99	III-defined and unknown causes of mortality	14	0%	1.00	1.32	1.07	1.43	1.45	1.54	1.37	1.14	1.06	0.85	0.66	1.07
30 N30-N39	Other diseases of urinary system	14	0%			1.07	0.95	0.96	1.23	1.17	1.13	1.01	1.14		
31 R50-R68	General symptoms and signs	13	0%			1.01	0.98	1.27	1.07	1.27	1.20	1.11	0.86	1.01	
32 G90-G98	Other disorders of the nervous system	13	0%	0.30		0.96	1.12	1.07	0.89	0.90	0.93	1.02	1.14	1.02	
33 D37-D48	Neoplasms of uncertain or unknown behaviour	13	0%			1.31	1.05	0.69	0.77	0.95	0.93	0.94	0.95	1.00	
34 K90-K92	Other diseases of the digestive system	10	0%			1.38	1.24	0.96	1.05	1.07	1.03	0.90	1.03	1.03	
35 K80-K86	Disorders of gallbladder, biliary tract and pancreas	10	0%			1.38	1.19	1.28	1.14	1.13	1.10	1.05			
36 E65-E68	Obesity and other hyperalimentation	9	0%		1.47	1.29	1.14	1.18	1.09	1.04	1.12	1.23	1.15		
37 G10-G14	Systemic atrophies primarily affecting the central ner	9	0%			2.07	1.26	0.93	0.99	0.98	0.99	0.88	1.05		
38 A00-A09	Intestinal infectious diseases	7	0%	0.91		0.56	1.16	1.08	0.92	0.89	0.78	0.75	0.86		
39 K20-K31	Diseases of oesophagus, stomach and duodenum	6	0%			0.81	0.83	0.97	1.41	1.23	1.01	1.18			
40 G35-G37	Demyelinating diseases of the central nervous system	5	0%			0.83	0.80	0.88	0.95	0.95	1.34	1.18	1.09		
41 G40-G47	Episodic and paroxysmal disorders	5	0%			2.45	1.19	1.22	1.21	1.07	1.08	1.19	1.20	1.28	1.23
42 D60-D64	Aplastic and other anaemias	4	0%				2.27	1.24	1.20	1.08	1.09	0.99			
43 Y10-Y34	Event of undetermined intent	4	0%	1.92		1.34	0.89	0.80	0.96	0.72	0.86	1.08	0.62	0.88	
44 M80-M94	Osteopathies and chondropathies	4	0%				0.68	1.61	1.40	1.37	1.39	1.04	1.30		
45 B20-B24	Human immunodeficiency virus [HV] disease	4	0%			1.07	0.89	0.58	0.82	1.07	1.53	0.84			
46 I05-I09	Chronic rheumatic heart diseases	4	0%			0.23	1.40	1.34	1.37	1.30	1.13	1.17	1.25		
47 I80-I89	Diseases of veins, lymphatic vessels and lymph nod	3	0%			0.96	1.15	1.12	0.93	0.87	1.05	0.87	0.95	0.99	
48 L00-L08	Infections of the skin and subcutaneous tissue	3	0%				2.62	1.97	1.29	1.21	1.23	1.24	1.34		
49 G80-G83	Cerebral palsy and other paralytic syndromes	3	0%			0.82	1.23	1.21	1.36	1.11	1.13	1.13	1.41	1.19	
50 Y85-Y89	Sequelae of external causes of morbidity and mortali	3	0%			2.41	1.83	2.02	1.38	1.58	2.00	1.80	2.00	1.82	
various	All other UCDs not in top 50 individual sub chapters	73	2%	0.96	0.91	1.03	1.12	1.17	1.11	0.88	0.87	0.97	1.02	0.96	0.99
Grand Total		2,984	100%	0.97	1.15	1.09	1.16	1.24	1.05	1.00	1.01	1.01	1.00	1.06	



#3 Metabolic & Digestive

Metabolic & Digestive *Contributing Cause of Death per CDC*

5yr change in rate	All	25-54	65+
Malnutrition	+86%	+34-60%	+75-90%
Metabolic disorder	+46%	-5 to +39%	+39-40%
Obesity	+35%	+28-31%	+27-74%
Thyroid	+22%	+7-33%	+9-32%
Diabetes mellitus	+18%	+11-29%	+7-16%
Digestive system	+17%	+26-43%	+4-21%

U.S. Mortality Trends Map (Multiple Cause of Death)

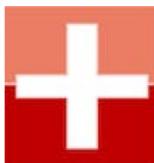
Total Five Year Change

Year-to-Year Change

Change in Contributing Causes of
2023 Indexed to 2018
All Ages, All Causes (All) & (All)

Note

		Age	All Ages															
			< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85+ years	All Ages				
		deaths (000s)	35	5	9	86	205	339	540	1,253	2,108	2,658	2,778	10,016				
			0.3%	0.1%	0.1%	0.9%	2.1%	3.4%	5.4%	12.5%	21.0%	26.5%	27.7%	100%				
Multiple Cause of Death, ranked by # of 2023 MCDs																		
1	I30-I51	Other forms of heart disease	1,258	13%	0.87	0.93	0.89	0.89	1.00	1.12	1.05	1.06	1.05	1.03	1.02	1.08		
2	C00-C97	Malignant neoplasms	884	9%	0.59	0.83	0.83	0.88	1.01	0.96	0.95	0.99	1.03	1.06	1.07			
3	I10-I15	Hypertensive diseases	698	7%				1.02	1.27	1.29	1.20	1.21	1.25	1.26	1.27	1.31		
4	I20-I25	Ischaemic heart diseases	625	6%				0.58	0.98	1.04	0.96	0.97	0.94	0.94	0.92	0.99		
5	F10-F19	Mental and behavioural disorders due to psychoactive substances	466	5%				1.14	1.29	1.53	1.13	1.06	1.00	0.91	0.93	1.08		
6	J95-J98	Other diseases of the respiratory system	447	4%	0.93	1.19	1.06	1.14	1.18	1.30	1.13	1.12	1.12	1.15	1.17	1.21		
7	R50-R68	General symptoms and signs	341	3%	1.06	0.80	0.98	1.10	1.23	1.31	1.22	1.16	1.20	1.13	0.98	1.14		
8	E10-E14	Diabetes mellitus	341	3%				0.92	1.29	1.12	1.11	1.11	1.07	1.13	1.16	1.18		
9	J40-J47	Chronic lower respiratory diseases	339	3%				0.38	0.74	1.04	1.21	1.02	0.86	0.96	0.97	0.95	0.94	1.02
10	I60-I69	Cerebrovascular diseases	299	3%	0.70	1.14	0.96	0.86	0.88	1.17	1.13	1.12	1.10	1.06	1.08	1.13		
11	N17-N19	Renal failure	262	3%	0.94	4.14	2.23	1.14	1.46	1.47	1.33	1.26	1.18	1.15	1.13	1.24		
12	A30-A49	Other bacterial diseases	261	3%	0.83	1.37	1.30	0.97	1.18	1.27	1.14	1.10	1.08	1.08	1.00	1.13		
13	F01-F09	Organic, including symptomatic, mental disorders	251	3%				0.76	1.75	0.92	1.14	1.11	1.03	0.97	1.03			
14	T36-T50	Poisoning by drugs, medicaments and biological substances	237	2%	2.25			7.35	1.13	1.28	1.61	1.54	1.73	2.07	1.43	0.86	1.52	
15	E70-E89	Metabolic disorders	234	2%	1.10	0.55	1.28	0.48	0.95	1.39	1.35	1.34	1.40	1.40	1.39	1.46		
16	W00-X59	Other external causes of accidental injury	224	2%	1.10	0.90	0.99	1.17	1.27	1.55	1.41	1.47	1.29	1.11	1.07	1.30		
17	G30-G31	Other degenerative diseases of the nervous system	212	2%						1.11	1.17	1.19	1.12	1.09	1.15			
18	R00-R09	Symptoms and signs involving the circulatory and respiratory systems	171	2%	1.07	0.78	0.81	1.07	0.98	1.17	1.13	1.12	1.17	1.16	1.11	1.20		
19	J09-J18	Influenza and pneumonia	165	2%	1.00	1.36	0.84	0.82	1.06	1.14	1.01	1.02	1.04	0.99	0.85	1.00		
20	K70-K76	Diseases of liver	149	1%	1.04			0.77	1.45	1.37	1.06	1.01	1.14	1.25	1.29	1.18		
21	I70-I78	Diseases of arteries, arterioles and capillaries	91	1%				0.98	1.05	1.06	1.03	1.04	1.01	0.99	1.06			
22	E40-E46	Malnutrition	86	1%				0.62	1.53	1.60	1.34	1.52	1.75	1.79	1.90	1.86		
23	T08-T14	Injuries to unspecified part of trunk, limb or body region	83	1%	0.84	0.95	1.45	1.23	1.24	1.32	1.19	1.13	1.11	1.20	1.19	1.22		
24	I26-I28	Pulmonary heart disease and diseases of pulmonary circulation	82	1%	0.75	0.99	1.10	0.96	1.07	1.08	1.10	1.13	1.14	1.17	1.28	1.23		
25	S00-S09	Injuries to the head	80	1%	0.71	0.80	1.00	0.98	1.05	1.13	1.03	1.00	0.99	1.10	1.13	1.08		
26	U00-U49	Provisional assignment of new diseases of uncertain etiology	78	1%														
27	G90-G98	Other disorders of the nervous system	71	1%	1.07	0.76	0.95	1.04	1.09	1.19	1.02	1.02	1.03	1.08	1.19	1.12		
28	D60-D64	Aplastic and other anaemias	68	1%				0.61	1.38	1.36	1.33	1.27	1.23	1.20	1.10	1.25		
29	J60-J70	Lung diseases due to external agents	68	1%				0.77	1.20	1.52	1.29	1.11	1.10	1.08	0.97	1.03		
30	R10-R19	Symptoms and signs involving the digestive system	67	1%	0.86	1.09	0.94	1.43	1.33	1.26	1.22	1.21	1.12	1.04	1.07			
31	G20-G25	Extrapyramidal and movement disorders	63	1%							1.25	1.14	1.10	1.11	1.05	1.17		
32	E65-E68	Obesity and other hyperalimentation	63	1%						1.18	1.31	1.29	1.28	1.25	1.27	1.46	1.74	1.35
33	J80-J84	Other respiratory diseases principally affecting the interstitium	61	1%	1.17	0.74	1.02	0.95	0.88	1.04	0.94	1.01	1.02	1.12	1.15	1.14		
34	K55-K63	Other diseases of intestines	58	1%	0.68			0.38	1.42	1.36	1.20	1.16	1.14	1.07	1.02	1.15		
35	N30-N39	Other diseases of urinary system	55	1%				1.39	1.32	1.29	1.20	1.21	1.21	1.15	1.07	1.19		
36	X60-X84	Intentional self-harm	48	0%				0.63	0.90	1.02	1.03	0.92	0.90	0.94	1.05	1.09	0.97	
37	R95-R99	Ill-defined and unknown causes of mortality	44	0%	0.99	1.22	1.05	1.17	1.34	1.38	1.20	1.03	0.96	0.95	0.83	1.02		
38	G40-G47	Episodic and paroxysmal disorders	42	0%	1.69	1.18	1.73	1.35	1.32	1.27	1.23	1.19	1.27	1.42	1.46	1.39		
39	K90-K92	Other diseases of the digestive system	41	0%				1.98	1.53	1.49	1.03	1.03	1.09	1.09	0.96	1.10		
40	V01-V99	Transport accidents	38	0%				0.85	0.92	1.04	1.07	1.17	1.01	1.01	0.93	0.89	1.05	
41	E00-E07	Disorders of thyroid gland	34	0%						1.07	1.14	1.33	1.31	1.32	1.19	1.09	1.22	
42	I80-I89	Diseases of veins, lymphatic vessels and lymph nodes	32	0%						1.03	1.39	1.36	1.14	1.15	1.27	1.26	1.19	
43	K20-K31	Diseases of oesophagus, stomach and duodenum	29	0%						1.45	1.10	1.11	1.08	1.22	1.19	1.08	1.20	
44	T66-T78	Other and unspecified effects of external causes	28	0%	1.19	1.11	0.78	0.76	0.91	1.04	0.94	0.98	1.12	1.10	0.99	0.98		
45	T00-T07	Injuries involving multiple body regions	28	0%	0.73	0.99	1.10	1.07	1.23	1.11	1.05	1.06	1.13	1.12	1.11			
46	J90-J94	Other diseases of pleura	26	0%	0.77			2.02	1.06	1.25	1.38	1.30	1.29	1.26	1.29	1.35		
47	F30-F39	Mood [affective] disorders	26	0%				0.72	0.96	1.18	1.08	1.12	1.23	1.23	1.12	1.20		
48	M00-M25	Arthropathies	24	0%						1.38	1.14	1.02	1.06	0.99	0.89	1.01		
49	T51-T65	Toxic effects of substances chiefly nonmedicinal as to side effects	24	0%	0.64	0.74	1.07	1.19	1.27	1.04	1.18	1.16	1.00	0.85	1.14			
50	D65-D69	Coagulation defects, purpura and other haemorrhagic conditions	23	0%	1.43			1.12	1.26	1.39	1.19	1.11	1.20	1.11	1.20	1.23		
various	All other MCDs not in top 50		594	6%	0.98	0.76	1.06	1.00	0.94	1.04	0.91	0.96	1.05	1.09	1.07	1.08		
Grand Total			10,016	0%	0.99	0.97	0.99	1.05	1.16	1.30	1.12	1.09	1.09	1.08	1.14			



#4 Cancer

Cancer selected Underlying Cause of Death per CDC

5yr change in rate	All	25-54	65+
Lower lobe lung	+63%	9%	+37-100%
Upper lobe lung	+49%	-6%	+33-65%
Oropharynx	+48%	+20%	+38-59%
Dig. Sys. ill defined.	+31%	+23-71%	+20-27%
Multiple sites, prim.	+25%	+27-178%	+16-18%
Lymphoma	+24%	+21-173%	+5-24%
Endom/uterine	+23%	+13-131%	+15-22%
Rectum	+18%	-15 to+21%	+4-14%
Unspecified site	+8%	-7 to+4%	+2-4%
Pancreas, prim.	+6%	-1-4%	-1 to+1%
Breast, primary	-4%	-5-12%	-10-13%
Colon, primary	-8%	-10 to+2%	-12-20%
Lung, primary	-11%	-30 to+4%	-11-17%

U.S. Mortality Trends Map (Underlying Cause of Death)										Codes that may be rising			
Total Five Year Change													
Change in Underlying Cause of Death Rate													
2023 Indexed to 2018													
All Ages, All Causes, (All) & (All)													
		Age		<1 year		1-4 years		5-14 years		15-24 years			
		deaths (000s)		na		0		1		3			
				na		0%		0%		2%			



#4 Cancer

Cancer selected Contributing Cause of Death per CDC

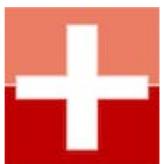
5yr change in rate	All	25-54	65+
Retroper., 2ndary	+60%	+6-58%	+48-51%
Lymph, primary	+59%	+0-43%	+43-86%
Digestive, 2ndary	+57%	+50-86%	+37-84%
Adrenal, 2ndary	+40%	-24 to+28%	+27-47%
Bone, 2ndary	+30%	+6-23%	+20-35%
Endo/uterine, prim.	+25%	+0-50%	+16-25%
Liver, 2ndary	+23%	+17-34%	+13-25%
Multiple sites, prim.	+23%	+20-128%	+15-16%
Brain & CNS, 2ndary	+13%	+3-30%	+6-17%
Pancreas, prim.	+7%	-11 to+7%	-1 to+2%
Breast, primary	+2%	-3-10%	-8 to+5%
Colon, primary	-6%	-7 to+2%	-10-17%
Lung, primary	-9%	-4-28%	-7-15%

U.S. Mortality Trends Map (Multiple Cause of Death)

Total Five Year Change
Change in Contributing Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

Note
MCD per UCD 1.52

Age	deaths (000s)	All Ages												
		< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years			
Multiple Cause of Death, ranked by # of 2023 MCDs														
1	C34.9	Bronchus or lung, unspecified - Malignant neoplasms	139	15%			0.96	0.89	0.72	0.81	0.85	0.86	0.92	0.91
2	C50.9	Breast, unspecified - Malignant neoplasms	54	6%			0.96	0.97	0.90	0.90	0.92	1.03	1.05	1.02
3	C25.9	Pancreas, unspecified - Malignant neoplasms	50	6%			1.07	0.89	0.99	0.98	0.99	1.02	1.01	1.07
4	C61	Malignant neoplasm of prostate	49	5%					0.86	0.96	1.02	1.05	1.07	1.11
5	C18.9	Colon, unspecified - Malignant neoplasms	43	5%			0.93	1.02	0.98	0.96	0.87	0.83	0.90	0.94
6	C78.7	Secondary malignant neoplasm of liver - Malignant neoplasms	40	4%			1.16	1.34	1.24	1.17	1.09	1.13	1.20	1.25
7	C80	Malignant neoplasm without specification of site	36	4%			0.80	0.99	1.06	0.99	0.99	1.05	1.06	1.11
8	C79.5	Secondary malignant neoplasm of bone and bone marrow - Malignant neoplasms	33	4%	0.48	0.88	1.06	1.23	1.20	1.12	1.20	1.26	1.35	
9	C78.0	Secondary malignant neoplasm of lung - Malignant neoplasms	31	3%	0.45	1.20	1.11	1.24	1.15	1.10	1.13	1.22	1.30	
10	C67.9	Bladder, unspecified - Malignant neoplasms	23	3%			0.87	0.81	0.86	0.97	0.99	1.07	1.06	1.06
11	C79.3	Secondary malignant neoplasm of brain and cerebral meninges - Malignant neoplasms	23	2%	0.79	1.05	1.30	1.19	1.03	1.01	1.06	1.14	1.17	1.13
12	C64	Malignant neoplasm of kidney, except renal pelvis	18	2%	0.86	0.63	0.94	0.93	0.98	0.98	1.02	1.06	1.06	1.06
13	C15.9	Oesophagus, unspecified - Malignant neoplasms	17	2%			0.94	0.99	0.94	0.87	0.94	1.00	1.03	1.01
14	C71.9	Brain, unspecified - Malignant neoplasms	16	2%	6.55	1.05	0.89	1.40	0.81	0.86	1.00	0.90	0.92	0.97
15	C90.0	Multiple myeloma - Malignant neoplasms	15	2%			0.72	0.78	0.81	0.84	0.95	1.08	0.98	0.98
16	C22.0	Liver cell carcinoma - Malignant neoplasms	15	2%			1.01	0.72	0.72	1.16	1.26	1.33	1.08	1.08
17	C56	Malignant neoplasm of ovary	14	2%			1.02	0.96	0.87	0.84	0.85	0.90	0.96	0.93
18	C79.8	Secondary malignant neoplasm of other specified sites - Malignant neoplasms	13	1%			0.80	1.06	0.90	0.97	0.98	1.11	1.12	1.08
19	C92.0	Acute myeloid leukaemia - Malignant neoplasms	12	1%	0.88	0.23	0.68	0.92	0.85	0.77	0.87	0.92	0.92	1.03
20	C78.6	Secondary malignant neoplasm of retroperitoneum and peritoneum - Malignant neoplasms	12	1%			1.06	1.86	1.58	1.49	1.51	1.48	1.58	1.60
21	D46.9	Myelodysplastic syndrome, unspecified - Uncertain neoplasms	11	1%			0.77	0.89	0.83	0.89	0.93	0.95		
22	C20	Malignant neoplasm of rectum	10	1%			0.61	1.22	1.20	1.17	1.15	1.13	1.07	1.20
23	C22.1	Intrahepatic bile duct carcinoma - Malignant neoplasms	10	1%			0.86	1.14	1.16	1.18	1.21	1.20	1.27	1.28
24	C16.9	Stomach, unspecified - Malignant neoplasms	10	1%			0.96	0.88	0.95	0.92	0.90	0.85	0.93	0.94
25	C85.9	Non-Hodgkin lymphoma, unspecified type	10	1%			0.64	0.89	0.82	0.70	0.75	0.77	0.81	0.82
26	C54.1	Endometrium - Malignant neoplasms	9	1%			1.00	1.50	1.17	1.06	1.16	1.22	1.25	1.25
27	C43.9	Malignant melanoma of skin, unspecified - Malignant neoplasms	9	1%			0.85	0.90	0.88	0.84	0.93	0.94	0.95	0.97
28	C22.9	Liver, unspecified - Malignant neoplasms	8	1%			0.64	0.74	0.68	0.90	0.93	0.96	0.91	
29	C77.9	Lymph node, unspecified - Malignant neoplasms	8	1%			1.21	1.00	1.43	1.38	1.43	1.55	1.88	1.59
30	C91.1	Chronic lymphocytic leukaemia - Malignant neoplasms	8	1%					0.70	0.95	0.90	1.07	1.08	1.09
31	C78.2	Secondary malignant neoplasm of pleura - Malignant neoplasms	7	1%			0.76	1.07	1.41	1.29	1.20	1.38	1.31	1.37
32	C97	Malignant neoplasms of independent (primary) multiple sites	7	1%			1.20	2.28	1.32	1.07	1.16	1.15	1.26	
33	C83.3	Non-Hodgkin lymphoma, large cell (diffuse)	6	1%			0.97	1.25	1.15	1.11	1.14	1.30	1.33	1.31
34	C78.8	Secondary malignant neoplasm of other and unspecified digestive organs - Malignant neoplasms	6	1%					1.85	1.50	1.38	1.37	1.51	1.84
35	C55	Malignant neoplasm of uterus, part unspecified	6	1%					0.98	1.03	1.07	0.93	0.98	1.04
36	C85.1	B-cell lymphoma, unspecified - Malignant neoplasms	5	1%					0.45	0.87	0.90	0.99	1.07	1.12
37	C53.9	Cervix uteri, unspecified - Malignant neoplasms	5	0%					0.68	1.02	0.90	0.96	1.02	0.97
38	C19	Malignant neoplasm of rectosigmoid junction	4	0%					0.36	1.18	1.09	1.15	1.20	1.09
39	C32.9	Larynx, unspecified - Malignant neoplasms	4	0%					0.94	0.74	0.79	0.91	1.00	0.95
40	C44.9	Malignant neoplasm of skin, unspecified - Malignant neoplasms	4	0%					0.94	1.31	1.08	1.18	1.16	1.22
41	C49.9	Connective and soft tissue, unspecified - Malignant neoplasms	4	0%	2.69	0.58	0.75	0.92	0.90	0.86	0.89	0.92	0.96	
42	C02.9	Tongue, unspecified - Malignant neoplasms	3	0%					0.82	0.92	0.93	1.09	1.25	1.24
43	C73	Malignant neoplasm of thyroid gland	3	0%					1.23	0.97	0.98	1.07	1.11	1.14
44	C95.9	Leukaemia, unspecified - Malignant neoplasms	3	0%					0.34	1.87	1.21	0.98	0.88	0.96
45	C34.1	Upper lobe, bronchus or lung - Malignant neoplasms	3	0%					0.93	1.54	1.32	1.28	1.63	1.48
46	C79.7	Secondary malignant neoplasm of adrenal gland - Malignant neoplasms	3	0%					0.76	1.13	1.28	1.27	1.47	1.40
47	C23	Malignant neoplasm of gallbladder	2	0%					0.37	0.97	0.82	0.96	0.95	0.99
48	D47.1	Chronic myeloproliferative disease - Uncertain neoplasms	2	0%						1.04	1.00	0.96	1.10	1.05
49	C26.9	Ill-defined sites within the digestive system - Malignant neoplasms	2	0%					1.45	1.15	1.14	1.29	1.28	1.20
50	C44.4	Skin of scalp and neck - Malignant neoplasms	2	0%					0.83	0.99	1.11	1.17	1.14	1.15
various	All other MCDs not in top 50		16	2%					0.71	0.98	0.75	0.73	0.75	0.89
Grand Total			907	100%					0.56	0.83	0.82	0.88	0.95	0.95
Grand Total ex. C34.9 Bronchus or lung, unspecified - Malignant neoplasms			768	85%					0.87	1.03	1.01	0.97	1.02	1.05



#5 External Causes

External selected

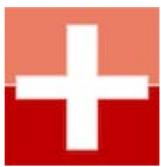
Underlying Cause of Death per CDC

5yr change in rate	All	<25	25-54	65+
Seq. of ext. cause	+82%	141%	+38-102%	+80-100%
Disorders due to psycho. Drugs	+37%	-58%	+25-73%	+11-51%
Other external (largely overdoses)	+36%	+19-32%	+27-56%	+12-38%
Assault	+18%	-27 to +125%	+11-26%	-33 to +14%
Transport accidents	+11%	-6% +17%	+7 to 23%	-0 to +10%
Intentional self harm	-1%	-8 -26%	-5 to +5%	-5 to +12%
Undetermined event	-12%	-11 to +92%	-4 -28%	-38% to +12%

U.S. Mortality Trends Map (Underlying Cause of Death)

Total Five Year Change
Change in Underlying Cause of Death Rate
2023 Indexed to 2018
All Ages, All Causes, (All) & (All)

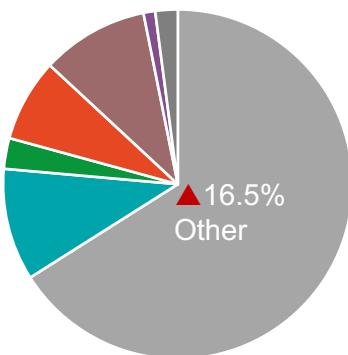
Age	All Ages														
	< 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years					
deaths (000s)	16	2	3	28	59	94	154	361	611	783	872	2,984			
	1%	0%	0%	1%	2%	3%	5%	12%	20%	26%	29%	100%			
Underlying Cause of Death, ranked by 2023 count															
1 C00-C97 Malignant neoplasms	598	20%		0.73	0.92	1.04	0.89	0.98	0.90	0.89	0.93	0.95	0.99	1.00	
2 I20-I25 Ischaemic heart diseases	348	12%			0.53	0.93	0.98	0.92	0.93	0.91	0.89	0.86	0.93		
3 I30-I51 Other forms of heart disease	213	7%	0.30		0.84	0.93	1.03	1.02	1.04	1.03	0.98	0.95	1.02		
4 G30-G31 Other degenerative diseases of the nervous system	177	6%				0.85	1.00	1.18	1.22	1.14	1.10	1.16			
5 W00-X59 Other external causes of accidental injury	166	6%	1.21	1.23	1.32	1.19	1.27	1.58	1.48	1.56	1.38	1.15	1.12	1.36	
6 I60-I69 Cerebrovascular diseases	160	5%	1.14		3.38	0.94	1.14	1.09	1.05	1.03	1.01	1.03	1.08		
7 J40-J47 Chronic lower respiratory diseases	144	5%	0.78	0.57	1.63	1.09	0.93	0.71	0.84	0.86	0.83	0.82	0.89		
8 I10-I15 Hypertensive diseases	132	4%			0.71	1.17	1.15	1.12	1.17	1.30	1.34	1.38	1.36		
9 F01-F09 Organic, including symptomatic, mental disorders	110	4%				0.55	1.03	1.00	0.91	0.86	0.91	0.91	0.86	0.91	
10 E10-E14 Diabetes mellitus	93	3%				1.05	1.38	1.08	1.08	1.01	1.03	1.02	1.10		
11 K70-K76 Diseases of liver	65	2%				1.59	1.48	1.10	1.04	1.12	1.17	1.19	1.17		
12 N17-N19 Renal failure	53	2%				1.43	1.16	1.13	1.08	0.99	0.97	0.97	1.05		
13 U00-U49 Provisional assignment of new diseases of uncertain etiology	50	2%													
14 X60-X84 Intentional self-harm	47	2%	0.74	0.92	1.05	1.05	0.95	0.91	0.95	1.05	1.12	0.99			
15 A30-A49 Other bacterial diseases	45	2%	1.00	1.13	1.56	1.19	1.07	1.15	1.06	1.00	1.03	0.99	0.91	1.04	
16 J09-J18 Influenza and pneumonia	43	1%	0.46	1.18	1.01	0.70	0.91	0.91	0.72	0.78	0.81	0.74	0.61	0.74	
17 G20-G25 Extrapyramidal and movement disorders	42	1%				1.34	1.09	1.10	1.09	1.05	1.16				
18 V01-V99 Transport accidents	40	1%	0.94	1.17	1.09	1.09	1.11	1.23	1.07	1.08	1.10	1.01	1.00	1.11	
19 E70-E88 Metabolic disorders	36	1%			1.31	1.08	0.13	0.47	1.40	1.17	1.27	1.34	1.32	1.35	1.38
20 J80-J84 Other respiratory diseases principally affecting the interstitium	25	1%				0.69	0.94	0.88	0.93	0.94	0.91	1.01	1.07		
21 I70-I78 Diseases of arteries, arterioles and capillaries	23	1%				0.88	1.24	1.32	1.34	1.03	1.00	0.91	0.85	0.99	
22 K55-K63 Other diseases of intestines	23	1%				0.80	0.91	1.72	1.19	1.14	1.11	1.04	0.98	1.11	
23 E40-E46 Malnutrition	22	1%				0.41	2.22	2.01	2.00	2.21	2.23	2.37	2.37		
24 X85-Y09 Assault	21	1%	0.77	0.73	2.25	1.20	1.11	1.26	1.25	1.17	1.14	0.95	0.67	1.18	
25 J60-J70 Lung diseases due to external agents	20	1%				1.41	1.61	1.09	1.05	1.05	1.02	0.97	0.86	0.99	
26 J98-J98 Other diseases of the respiratory system	19	1%	0.56			1.08	1.23	1.03	1.08	1.07	1.14	1.16	1.18		
27 I26-I28 Pulmonary heart disease and diseases of pulmonary circulation	19	1%	0.76			0.80	0.94	0.94	1.01	1.03	0.97	0.96	1.08	1.05	
28 F10-F19 Mental and behavioural disorders due to psychoactive	19	1%	0.42	1.28	1.73	1.25	1.27	1.51	1.22	1.11	1.37				
29 R95-R99 Ill-defined and unknown causes of mortality	14	0%	1.00	1.32	1.07	1.43	1.45	1.54	1.37	1.14	1.06	0.85	0.66	1.07	
30 N30-N39 Other diseases of urinary system	14	0%				1.07	0.95	0.96	1.23	1.17	1.13	1.01	1.14		
31 R50-R68 General symptoms and signs	13	0%				1.01	0.98	1.27	1.07	1.27	1.20	1.11	0.86	1.01	
32 G90-G98 Other disorders of the nervous system	13	0%	0.30			0.96	1.12	1.07	0.89	0.90	0.93	1.02	1.14	1.02	
33 D37-D48 Neoplasms of uncertain or unknown behaviour	13	0%				1.31	1.05	0.69	0.77	0.95	0.93	0.94	0.95	1.00	
34 K90-K92 Other diseases of the digestive system	10	0%				1.38	1.24	0.96	1.05	1.07	1.03	0.90	1.03		
35 K80-K86 Disorders of gallbladder, biliary tract and pancreas	10	0%				1.38	1.19	1.28	1.14	1.13	1.10	1.05			
36 E65-E68 Obesity and other hyperalimentation	9	0%				1.47	1.29	1.14	1.18	1.09	1.04	1.12	1.23	1.15	
37 G10-G14 Systemic atrophies primarily affecting the central nervous system	9	0%				2.07	1.26	0.93	0.99	0.98	0.99	0.88	1.05		
38 A00-A09 Intestinal infectious diseases	7	0%	0.91			0.56	1.16	1.08	0.92	0.89	0.78	0.75	0.86		
39 K20-K31 Diseases of oesophagus, stomach and duodenum	6	0%				0.81	0.83	0.97	1.41	1.23	1.01	1.18			
40 G35-G37 Demyelinating diseases of the central nervous system	5	0%				0.83	0.80	0.88	0.95	1.34	1.18	1.09			
41 G40-G47 Episodic and paroxysmal disorders	5	0%			2.45	1.19	1.21	1.07	1.08	1.19	1.20	1.28			
42 D60-D64 Aplastic and other anaemias	4	0%				2.27	1.24	1.20	1.08	1.09	0.99	1.11			
43 Y10-Y34 Event of undetermined intent	4	0%	1.92	1.34	0.89	0.80	0.96	0.72	0.86	1.12	1.08	0.62	0.88		
44 M80-M94 Osteopathies and chondropathies	4	0%				0.68	1.61	1.40	1.37	1.39	1.04	1.30			
45 B20-B24 Human immunodeficiency virus [HIV] disease	4	0%				1.07	0.89	0.58	0.82	1.07	1.53				
46 I05-I09 Chronic rheumatic heart diseases	4	0%				0.23	1.40	1.34	1.37	1.30	1.13	1.17			
47 I80-I89 Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	3	0%				0.96	1.15	1.12	0.93	0.87	1.05	0.87	0.95	0.98	
48 L00-L08 Infections of the skin and subcutaneous tissue	3	0%				2.62	1.97	1.29	1.21	1.23	1.24	1.34			
49 G80-G83 Cerebral palsy and other paralytic syndromes	3	0%	0.82	1.23	1.21	1.36	1.11	1.13	1.13	1.41	1.19				
50 Y85-Y89 Sequela of external causes of morbidity and mortality	3	0%	2.41	1.83	2.02	1.38	1.58	2.00	1.80	2.00	1.82				
various All other UCDs not in top 50 individual sub chapters	73	2%	0.96	0.91	1.03	1.12	1.17	1.11	0.88	0.87	0.97	1.02	0.96	0.99	
Grand Total	2,984	100%	0.97	1.15	1.09	1.16	1.24	1.05	1.00	1.01	1.00	1.06			



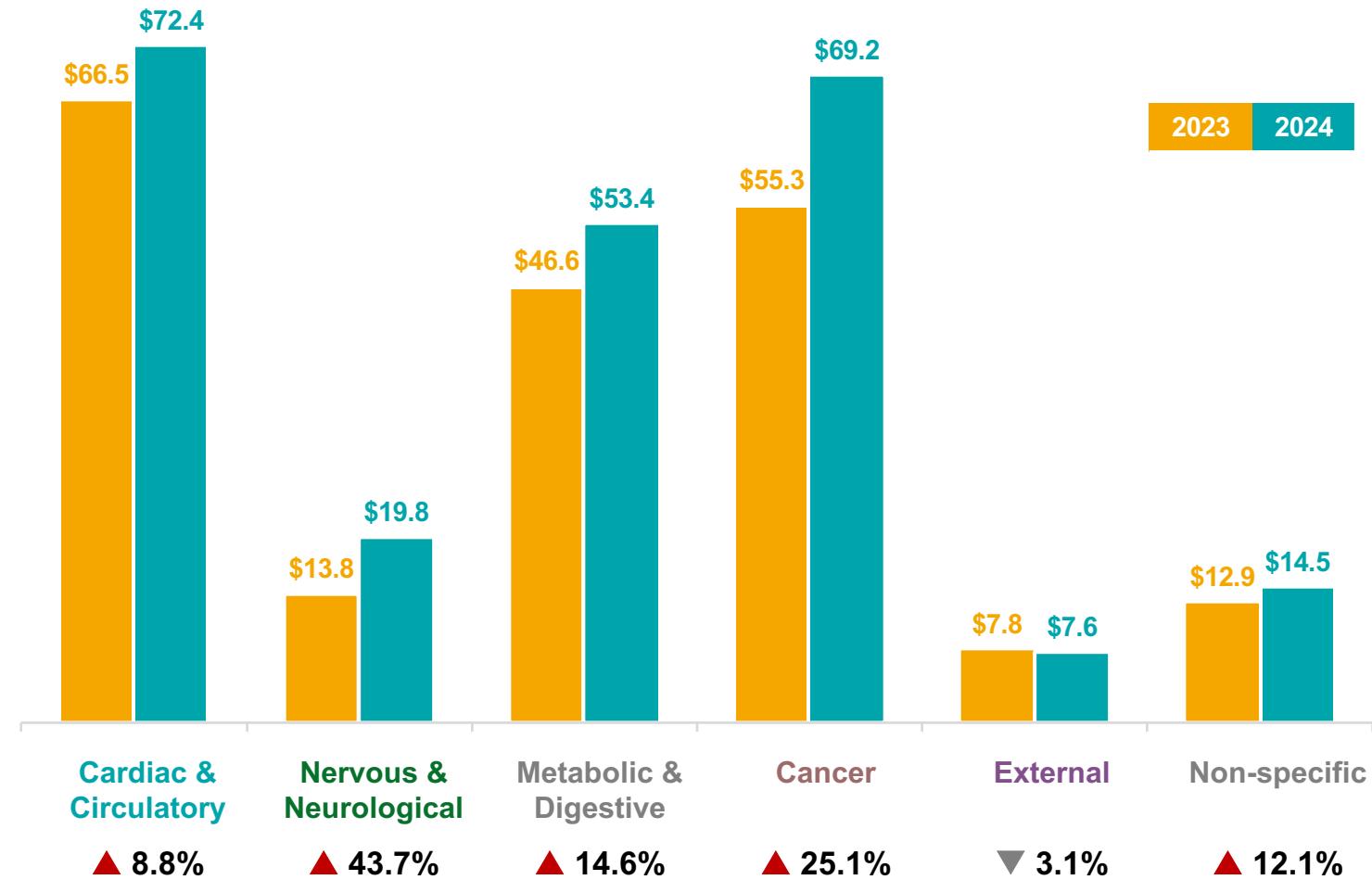
Medical claims increasing in areas driving mortality

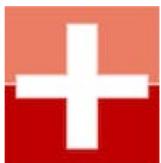
Professional and Facility

Total 2024 Claims Including 'Other'

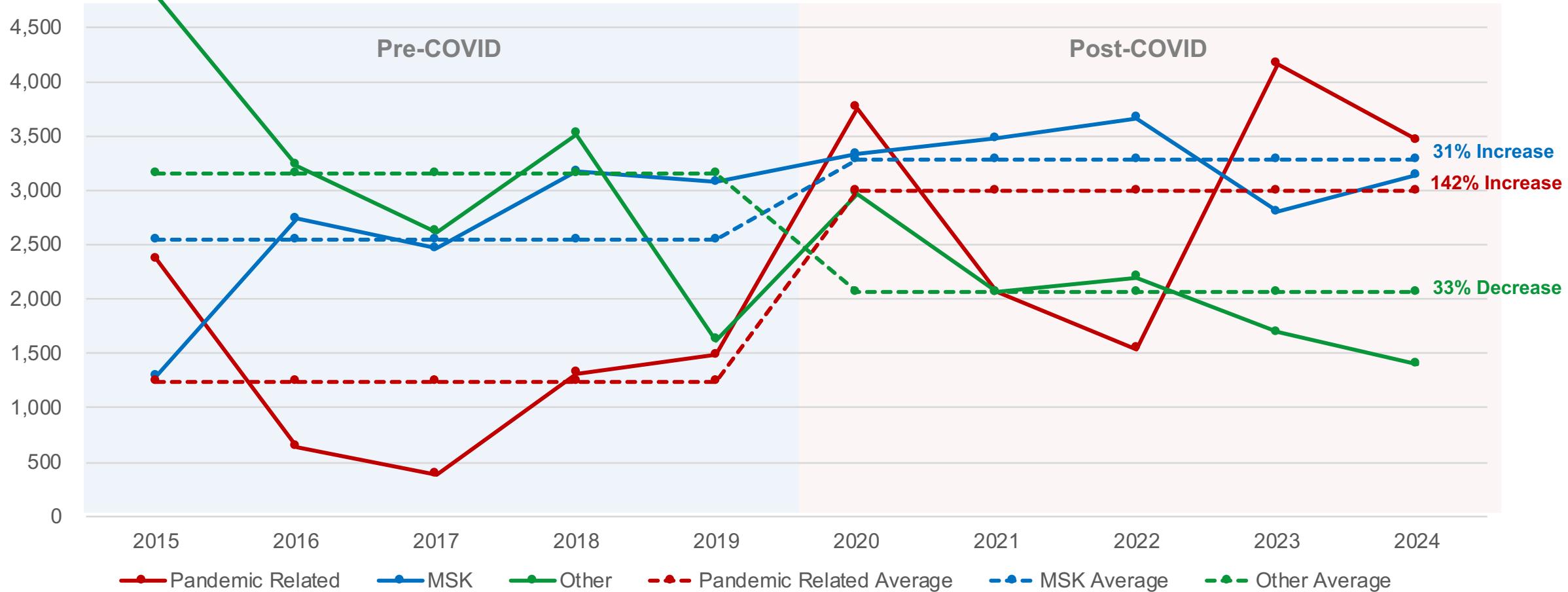


- Other
- Cardiac & Circulatory
- Nervous & Neurological
- Metabolic & Digestive
- Cancer
- External
- Non-specific

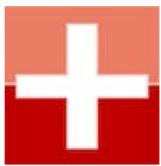




STD Lost Days Related to Pandemic Conditions is Elevated



MSK is up 29% and Pandemic-Related is up 142%.



ICD Group Categories and Percentage Increase in Days / 1,000 2020 to 2024 compared to 2015 to 2019

MSK

Musculoskeletal	0%
Fractures/Sprains	52%
Back/Spine	46%

Pandemic Related

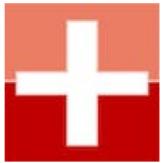
Mental/Substance	473%
Tumors	42%
Neurological	85%
Circulatory Disease	-7%
Gastrointestinal	287%
Infectious Disease	193%
Respiratory Disease	646%
Blood Disorder	N.M.
Eye Disease	1,143%

Other

Pregnancy	-29%
Symptoms	-64%
Genitourinary	-61%
Endocrine	29%
Skin Diseases	-23%
Trauma	-88%
Oral Disease	18%
Breast Disease	-35%
Congenital Abnormalities	N.M.
Ear Disorders	N.M.
Factors Influencing Health	N.M.
Toxic Exposure	None

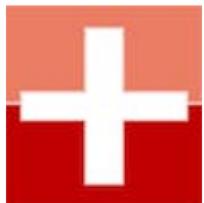
ICD Group Categories are ordered based on total lost days per 1,000 over past decade.

N.M. = Not Measurable, because you can't divide by 0



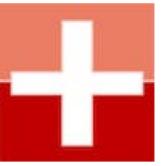
Part II

At time of crisis...



Insurance Collaboration to Save Lives
seek answers, save lives, mitigate loss

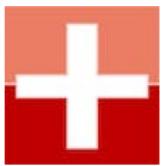
...insurers are here to help.



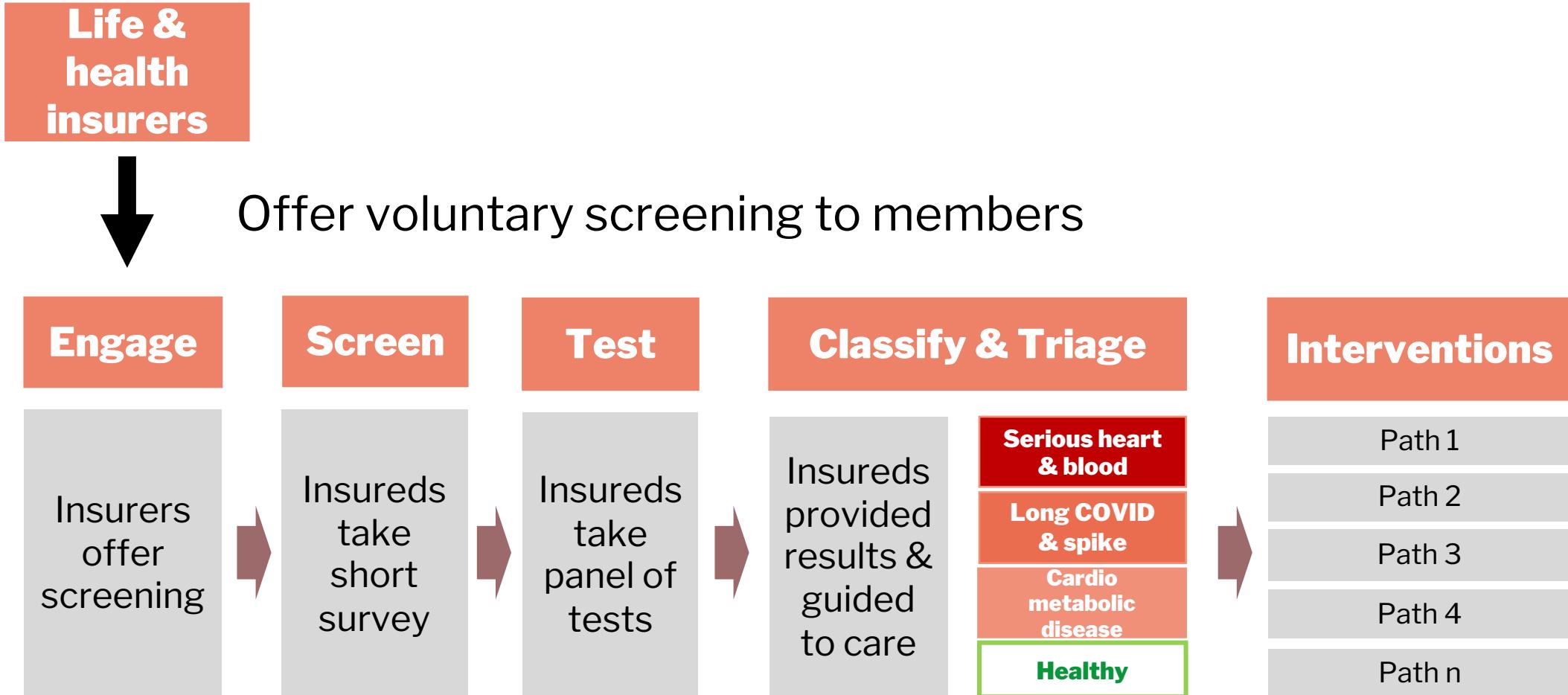
The solution? Insurers can

Screen, Test, & Triage

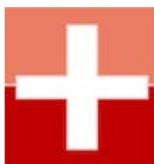
to save money and save lives.



Proactive, targeted loss mitigation can be powerful



Proactive engagement to triage to care or lifestyle change can unlock value



Screening ICSL members identified five conditions to target

Medically addressable cardiac risks

14% had 3+ markers cardiac or circulatory inflamm. or injury

This includes hs CRP, d-dimer, troponin, ntpobnp.

This data is consistent with CDC data suggestive of widespread cardiac & circulatory issues

Identify those at high risk & suggest medical diagnosis & care.

**NT probnp elevated
acm = ~67%¹**

Vitamin addressable cardiac risk

28% had elevated Homocysteine, a heart attack risk factor

Typically caused by vitamin deficiency (B6, B12, folic acid) and genetic factors

Homocysteine is toxic and significant contributor to heart attacks/stroke risk.

Identify those who need to take Vitamin B supplement.

**Homocysteine
acm = ~22%²**

Vitamin addressable immune risk

24% were Vitamin D deficient and 69% were below optimal

Low levels of Vit. D worsen many immune, heart & other issues.

Most in U.S. need Vitamin D, some races, regions, seasons especially.

Identify those who need to take Vitamin D supplement.

**Vitamin D deficient
acm = ~17%³**

Lifestyle addressable metabolic disease

17% had 3+ markers of lifestyle disease

This includes markers of metabolic issues like TG/HDL, A1C, glucose

Lifestyle diseases need lifestyle solutions, diet, exercise, fasting, etc.

Provide coaching & apps for diet & lifestyle change.

**A1C elevated
acm = ~20%³**

Biomarkers suggestive of long-COVID, etc.

28% had extremely high C19 antibodies

34% had elevated monocytes

Elevated monocytes & high ABs may suggest continuing C19 effect.

Evaluate to as screening & therapeutic guide for long COVID & related.

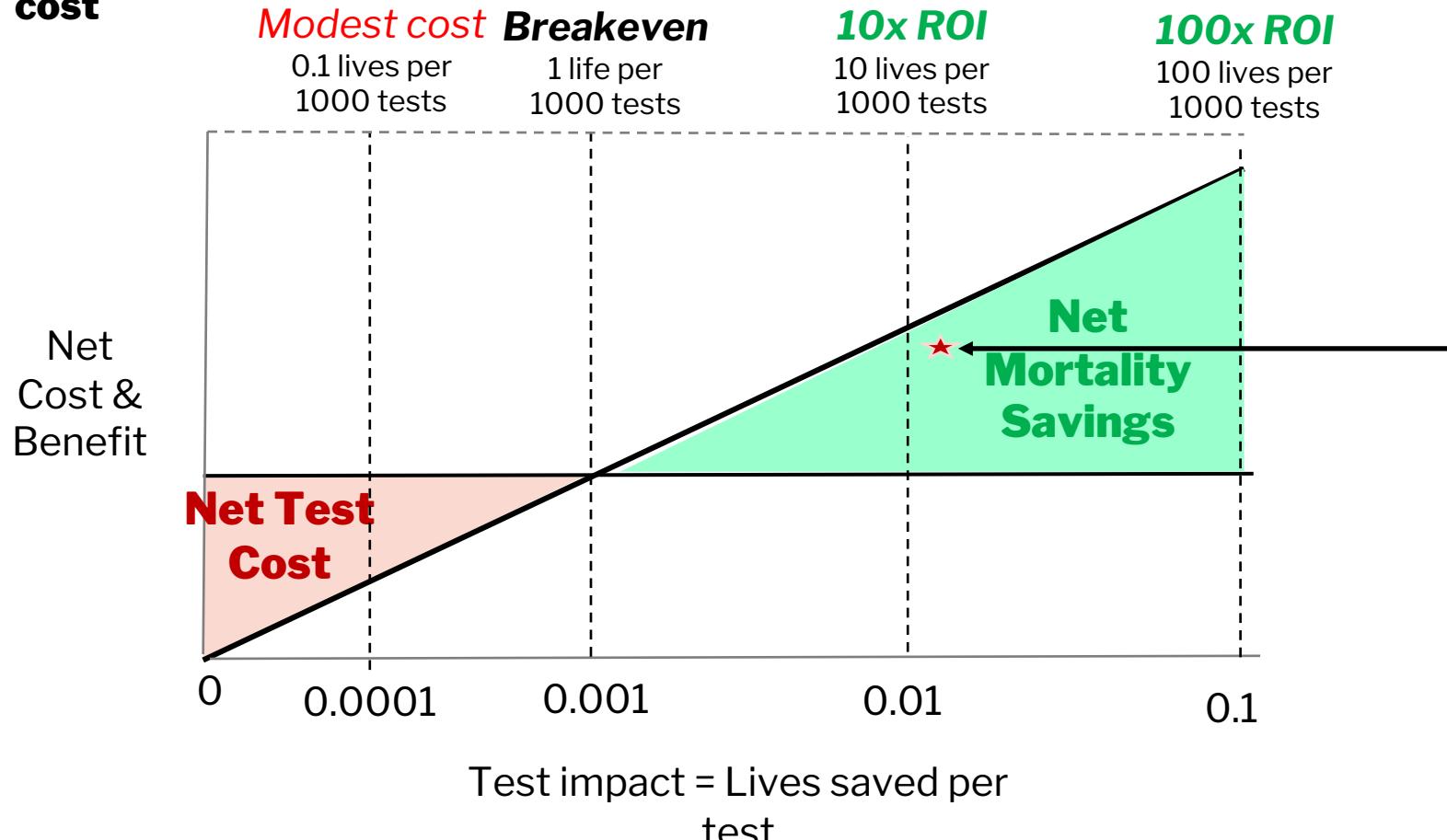
**C19 factors elevated
acm = unknown**



Breakeven analysis for screening is compelling

Sensitivity analysis shows low breakeven and large upside

Net savings sensitivity for \$200k term policy and \$200 test panel cost

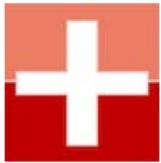


Pilot data confirms the opportunity

Our pilot found **14% were at high risk as measured** by having 3 or more elevated cardiac & circulatory markers.

If only **10%** of the **14%** can be helped to make changes to avoid a cardiac event...

...then through testing **1000** insureds, insurers can save **14** lives and **\$2.8m** of death benefit, while paying only **\$0.2m** for tests = **a 14x ROI**



The opportunity to improve health through insurance is vast

Opportunities in all lines

Life & disability

Reduce preventable deaths & disability

Health

Reduce costly health events like heart attacks

P&C

Reduce casualty losses caused by health events

Health & tech

And for every step

Employers & payors

Primary insurers

Reinsurers & stop loss

For insureds and families

For in-force or new business insureds

For in force, closed blocks, and flow

And to achieve three key goals

Social

Save lives

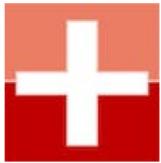
Profit

Save money

Growth

New products to drive growth

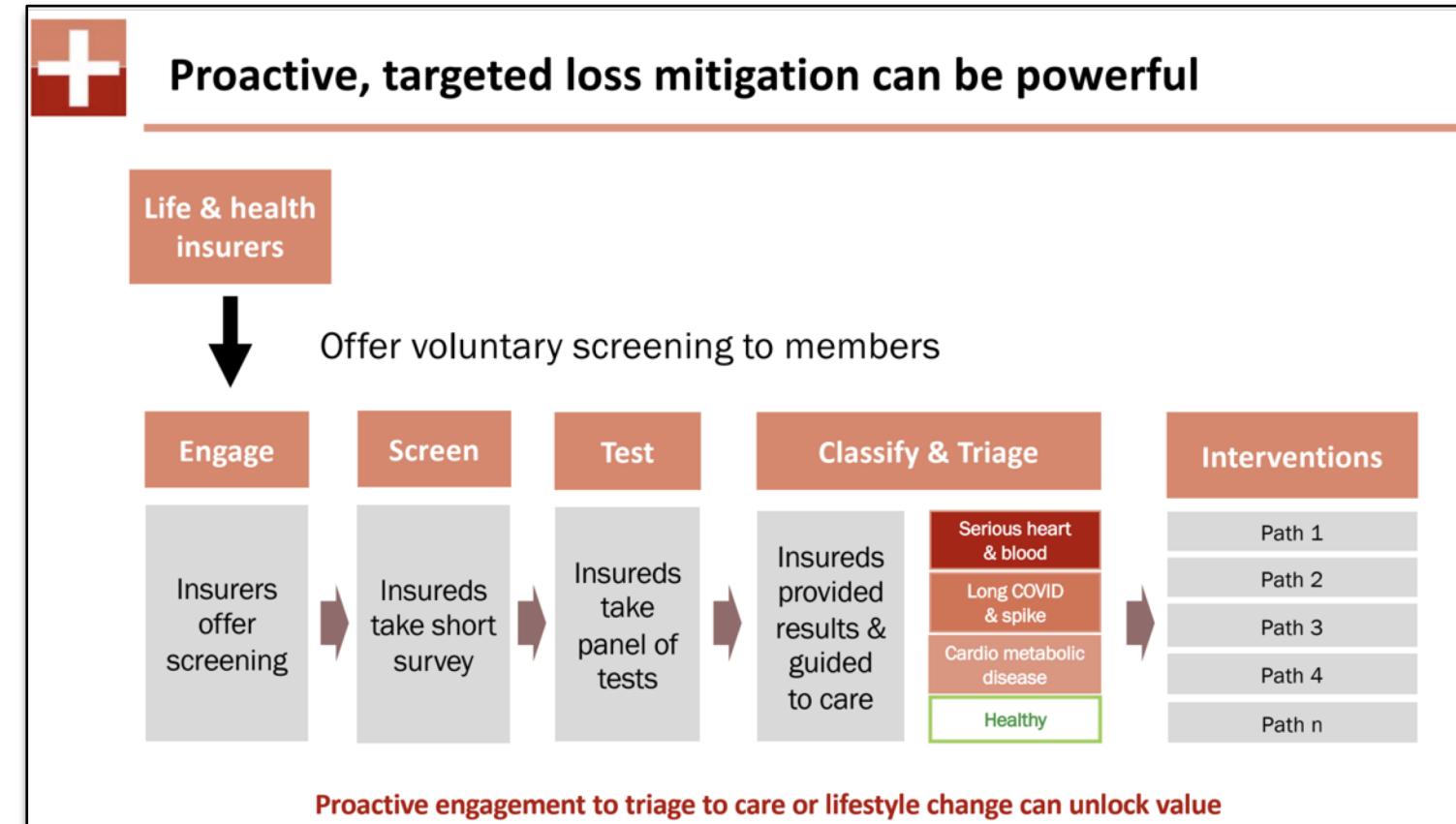
Traditional and digital solutions providers as enablers for this transition

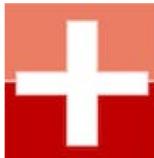


Proactive efforts will drive substantial non-loss value

Extending insurers' consumer-focused initiatives to include voluntary in-force blood-testing can:

- **Boost consumer engagement**
- **Strengthen trust and loyalty**
- **Create personalized value**
- **Expand value by improving health**
- **Meet customers at their need**
- **Help customers age gracefully**
- **Provide agents & employers a caring & compelling consumer-focused sale**
- **All these benefits are in addition to the benefit of reducing the very high cost of poor health**





ICSL Test Panels

Metabolic Screen

Biomarker (System)	Cardiac	Comprehensive	Combined	HR
Troponin (CV)	X		X	
D-Dimer (CV)	X		X	1.24
Hs-CRP (CV)	X	X	X	1.31
NT-proBNP (CV)	X	X	X	1.4
Homosysteine (CV)		X	X	1.31
HgbA1C (M)		X	X	1.21
Vitamin D (IS)		X	X	0.80
CEA (IS)		X	X	1.72 
<i>ICSL Discount Price</i>	\$165.75	\$176.60	\$197.89	

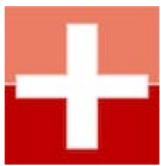
Cardiovascular system (CV) = screens for heart and stroke risk

Metabolic system (M) = screens for early diabetes

Immune system (IS) = screens for ability to fight foreign invaders like bacteria and viruses and internal "invaders" like cancer

Hazard Ratio (HR) = 1.00 is neutral, higher ratios indicate higher mortality

ICSL does not collect revenue from Ulta Labs for any of these tests. Pricing as of 14 Feb. 2025



Test panels available on ICSL website

10:30 LTE 83%

Insurance
Collaboration
to Save Lives

*seek answers, save lives,
mitigate loss*

Click To Help

Josh Stirling Interview

AA collaborationtosavelives.org

10:30 LTE 82%

The Solution

"Instead of cursing the darkness, light a candle."
-Benjamin Franklin

Health Screenings

- Many people have undetected health issues
- These include immune, heart, and metabolic problems
- Testing can identify these
- Our comprehensive panel tests six biomarkers for an affordable cost, which often can be reimbursed

AA collaborationtosavelives.org

10:32 LTE 82%

Panels Used by ICSL

Cardiac
Troponin
D-Dimer
hs-CRP
NT-proBNP
Comprehensive
hs-CRP
NT-proBNP
Homocysteine
HgbA1C
Vitamin D
CEA

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Get Tested

First Name*

Last Name*

Email*

Phone Number

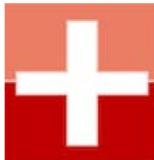
Job Title

Company

Are you a leader concerned about the health of your team and want more information on how you may support them? Click here and we will reach out to you.

ICSL is not a licensed medical provider and does not provide medical services, nor does a relationship with ICSL create any sort of doctor-patient relationship. Consistent with its mission, ICSL promotes actions to improve health and mitigate causes of excess mortality and morbidity.

AA collaborationtosavelives.org



ICSL ForwardLiving Hub - Powered by GoMo Health.

Personal Concierge

Automated Engagement System



Care Companion

Digital Resource Library & Learning Management System



GoMo Chat

Secure Messaging Platform for Real-Time Communication



Program Engagement and KPI Reporting Portal

24/7 Access to Data & Analytics



31,649,605

Member/Employee encounters



\$330M+

Saved

348,554

Escalations for early intervention



1000's

Of lives saved



There is broad momentum behind this industry effort

December 2023



Greater Health Screenings Could Save Life Insurers Money and Improve Mortality, Group Says

A nonprofit formed by industry executives is proposing insurers test policyholders for a battery of common causes of morbidity.

May 2024

IN INSURANCE NEWSNET Your industry. One source.™

Excess Mortality recedes, but remains above normal

Excess Mortality: The New Normal?

1:03 / 1:01:56

YouTube IN

February 2025



While U.S. mortality spike is normalizing, 5 troubling trends continue

The alarming spike in U.S. mortality rates post-COVID, which vexed scientists and affected life insurance earnings, appears to be normalizing, according to the latest health statistics. Yet, the

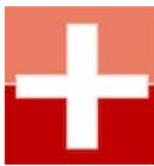
January 2026



Nonprofit Group Looks To Achieve a Lofty Goal: Saving a Million Lives

Effecting Change: Insurance Collaboration to Save Lives, a group of industry figures working to lower morbidity and mortality across society, aims to save 1 million people through greater testing and increased engagement.

For links to these and others, please see:
<https://www.insurancecollaborationtosavelives.org/media>



To learn more, reach out to any of the Collaboration's leaders

Directors & Officers



Richard H. Watts, **Board member at Farmers Group, Inc.**, Apaly Health and Roost, advisor to numerous PE & VC backed ventures, and former President of Direct Group at Progressive Insurance.



Michael Grasher, **EVP & CFO at The Fortegra Group**, specialty multi-line insurer, former CFO at publicly traded work comp company, previously a Managing Director and multi-line insurance analyst at Piper Jaffray.



Bret Swanson, **Chairman of the Indiana Public Retirement System (INPRS)**, President of Entropy Economics, LLC, and non-resident senior fellow at the American Enterprise Institute.



Teresa R. Winer, F.S.A., M.A.A.A. **L&H Actuary for the State of Georgia's Commissioner of Insurance**, member of AAA's NGE Working Group, former VP & two-term SOA board member and GSU RMF board



Noelle H. Sproul, Esq. **ICSL Corp Secretary**, investment lawyer, former Managing Director in the legal department of a large insurance company, and previously, an attorney at Moore & Van Allen.



Josh Stirling, **Founder of the Insurance Collaboration to Save Lives**, Insurtech advisor/director & chief insurance & partnerships officer, former managing director and *Institutional Investor* #1 ranked Wall Street insurance analyst



Mitch Bagley, **ICSL Board Member**, marketing and communications team lead, former P&C commercial broker

Team Leaders

Medical & Product

- **Steve Cyboran**, ASA, FCA
- **Edward Loniewski**, DO, FACOS, FAOAO
- **Tom Lewis**, Ph.D.
- **Kate Hendricks**, M.D. M.P.H.
- **Steven Dunlap**, MD

Marketing & Comm

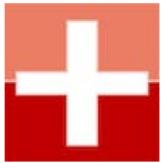
- **Marci Sheeran**, CLTC, LUTCF
- **Rebecca Richey**, agent
- **Bryan Barber**, technology

Analytics & Research

- **Mary Pat Campbell**, FSA
- **Valerie Chezem**, ASA
- **Patrick Dooley**, analyst
- **JR Reyling**, MBA, E.E.
- **Greg Henke**, FSA, MBA
- **Robert Wright**, PhD.

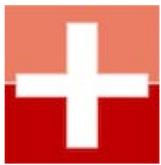
International

- **Adam Chambers**, Esq.



A final thought

**Insurers who lead,
can save money,
and will save lives.**



Join us on this journey.

Learn more

Reach out

Help us save lives.

Find us

[youtube.com/@InsuranceCollaboration](https://www.youtube.com/@InsuranceCollaboration)

[LinkedIn/Insurance Collaboration to Save Lives](https://www.linkedin.com/company/insurance-collaboration-to-save-lives)

www.insurancecollaboration.org

Reach out

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