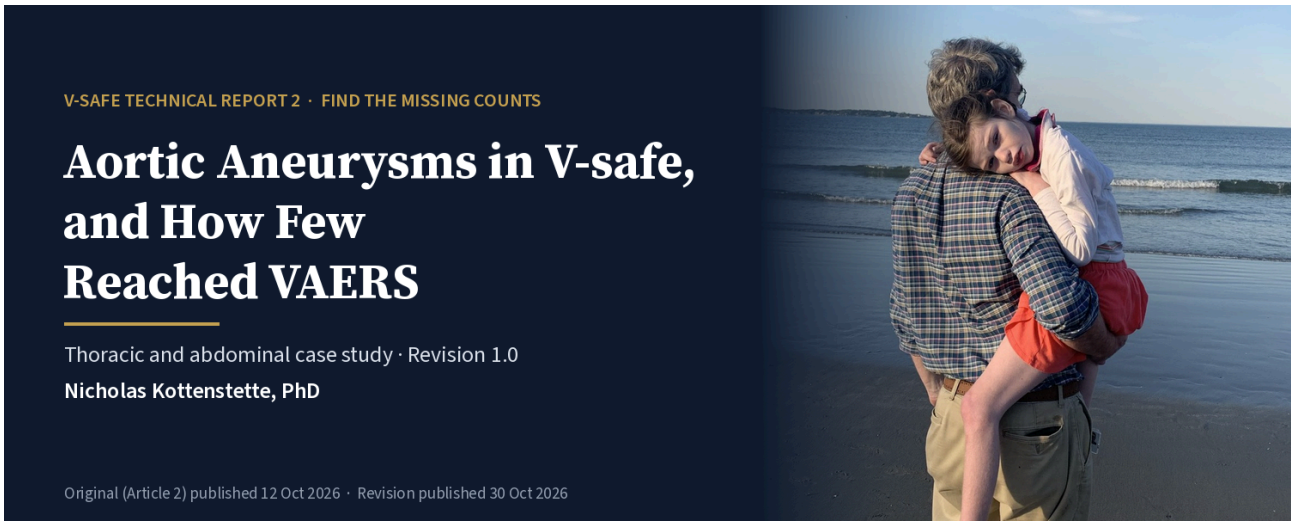


V-safe Technical Report 2 · Find the Missing Counts: Thoracic and Abdominal Aortic Aneurysms in V-safe, and How Few Reached VAERS

A case-study report with the top 10 thoracic cases by onset window

By Nicholas Kottenstette, PhD – University of Notre Dame, Electrical Engineering, 2008

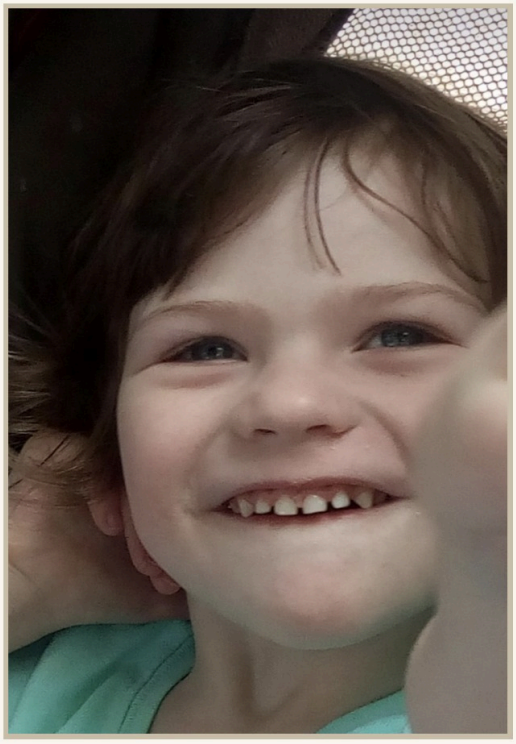
Published 30 October 2026 · Revision 1.0 · **© 2026 Nicholas Kottenstette. All rights reserved.**

Addenda and earlier reports

- Addendum A: Every thoracic aortic aneurysm case report (186 most likely thoracic cases).
- Addendum B: Every abdominal aortic aneurysm case report (151 most likely abdominal cases).
- Addendum C: The aortic case file (public tabs and README of the case file sheet).
- Technical Report 1 (TR1): https://x.com/NickKottenstet1/status/2109280153373217216

V-safe, the Centers for Disease Control and Prevention (CDC) smartphone safety program, asked millions of people how they felt after COVID-19 vaccination. Technical Report 1 found 337 people who described an aortic aneurysm in their own words, and an underreporting factor (URF) of 16 (Kottenstette, 2026a). At that URF, the thoracic aortic aneurysm rate in V-safe is 51.1 per 100,000 person-years, where 5.3 was expected. That is an excess of 2,524 thoracic aortic aneurysms in V-

safe [67,474 across the US], and about 1,111 [29,689] deaths within 5 years (Clouse et al., 1998). This report asks a simpler question: how many of these people reached the Vaccine Adverse Event Reporting System (VAERS)? Of 186 most likely thoracic and 151 most likely abdominal aortic aneurysm cases, 2 and 1 did. In total, 9 additional reports reached VAERS that a text box search cannot typically find. Two were true aortic aneurysms missed because of significant misspellings, and one described only a dilated thoracic aorta. Five did not describe an aortic aneurysm in the V-safe text; the diagnosis came from the call or from VAERS. One, from a woman in Alaska, could not be matched to any V-safe registrant. The focus here, however, is the three people whose own words named an aortic aneurysm and whose reports reached VAERS. Three hundred thirty-seven people reported an aortic aneurysm to V-safe. Only three of those reports reached VAERS.



In Loving Memory of

Cecilia Louise Kottenstette

June 1, 2012 – August 23, 2022

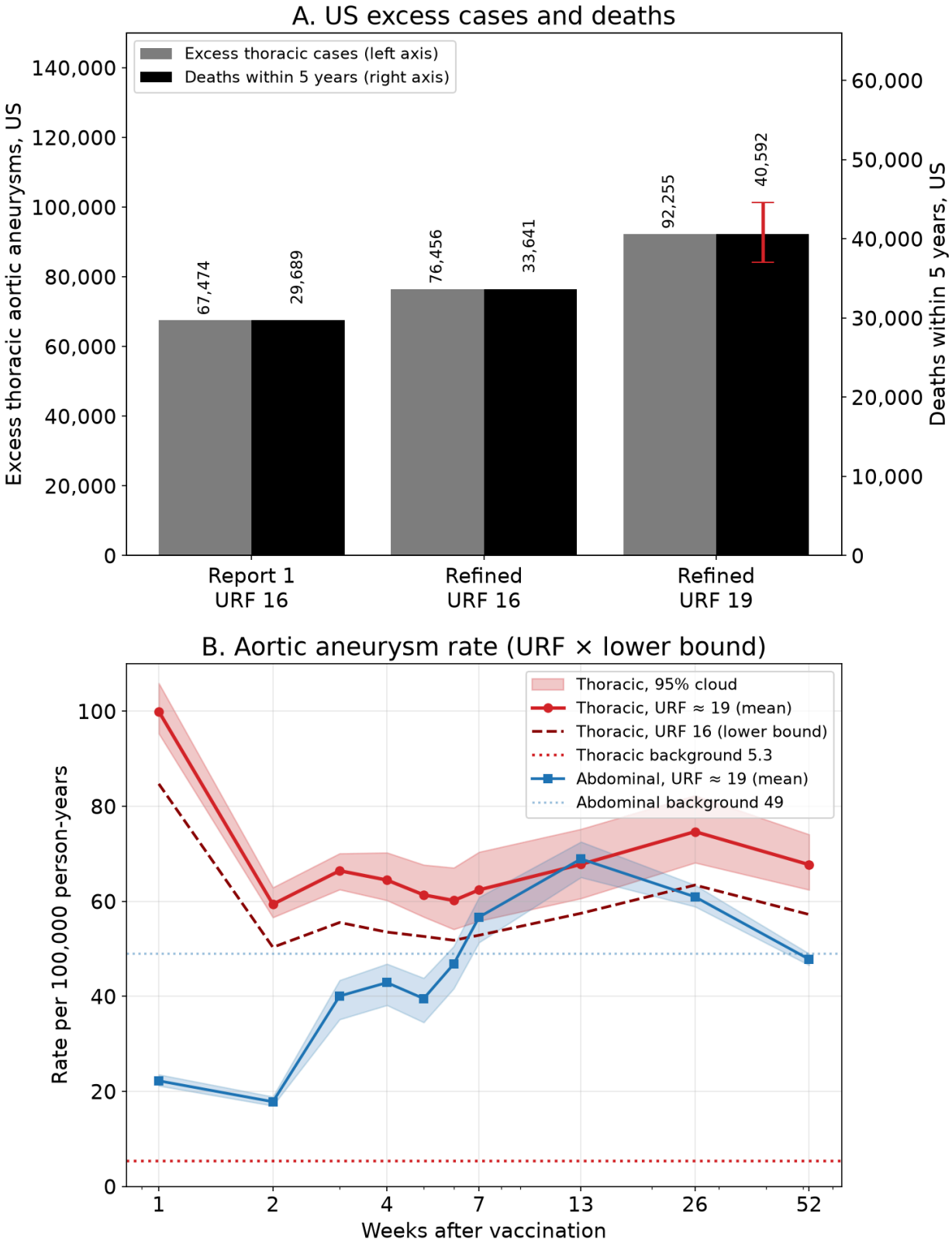
Federal Appeals Decision Case No. 20-2282

Dedicated to the C-19 injured.

Beneath Thy Protection

We fly to thy protection,
O Holy Mother of God;
do not despise our petitions
our necessities,
but deliver us always
from all dangers,
O Glorious and Blessed Virgin.
Amen

In loving memory of Cecilia Louise Kottenstette (June 1, 2012 – August 23, 2022), dedicated to the C-19 injured, with the prayer "Beneath Thy Protection."



Opening figure. Thoracic aortic aneurysms after COVID-19 vaccination, US numbers. Top: excess thoracic aortic aneurysms (left axis) and deaths within 5 years (right axis) across the US; the red bar is the 95%

range of deaths over 1,000 runs (37,005 to 44,556). Bottom: the rate (URF × lower bound) by weeks after vaccination at the refined URF of about 19, with its 95% confidence cloud from 1,000 runs, the URF 16 lower-bound line, and the background rates (thoracic 5.3, abdominal 49 per 100,000 person-years, drawn faded as a reference). URF = under-reporting factor; lower bound = cumulative V-safe cases per 100,000 person-years of follow-up. The URF 16 stays the stated value in this report.

Footnote: V-safe numbers. Rate at week 52: 51.1 (Report 1, URF 16), 57.2 (refined, URF 16) and 67.9 (refined, URF 19) per 100,000 person-years, against 5.3 expected. Excess thoracic cases: 2,524, 2,860 and 3,451. Deaths within 5 years: 1,111, 1,258 and 1,518. Sources: Tables 1, 4 and 5.

On 2 October 2012, Cecilia Louise Kottenstette was four months old. Hours after she received Pentacel and Prevnar, the infantile spasms began. They never stopped. She died on 23 August 2022.

The Federal Circuit affirmed that the injury was vaccine-caused (case No. 20-2282). Her medical trust was established one week before she died and was closed shortly thereafter, arriving too late to be of any help to her.

Data source and counts

The data, counting rules and case IDs are those of Technical Report 1 and its case file (Kottenstette, 2026a, 2026b). The case file's public tabs and README are reproduced as a PDF in Addendum C. V-safe free text was released under court order (FCDC v. CDC, 2024; ICAN, n.d.). It names 100 thoracic (91 strict), 92 abdominal and 145 aortic aneurysm cases with no site named, 337 people in all. Thoracic cases carry the ID prefix TAA-, abdominal cases AAA- and site-unnamed cases AA-. No registrant codes are shown.

Table 1. Report 1 values used here, V-safe [US].

Quantity	Value
URF	16
Correction factor (CF)	1.71
Thoracic rate (URF × lower bound), per 100,000 person-years	51.1
Thoracic background, per 100,000 person-years	5.3
Implied thoracic aneurysms, week-52 running total	2,856
Ruptures within 5 years, running total	571
Excess thoracic aneurysms (new adverse events, NAEs)	2,524 [67,474]
Deaths within 5 years (44%)	1,111 [29,689]
Thoracic-to-abdominal proportional reporting ratio (PRR)	10.11

All values from Kottenstette (2026a), Tables 2 and 6 and Equations 6 and 11 to 13; the 44% death share is from Clouse et al. (1998).

$$\text{Excess rate} = \text{URF} \times \text{LB}_{\text{Thoracic}}(52) - 5.3 = 51.1 - 5.3 = 45.8$$

Equation (1). The excess thoracic rate is the URF-corrected V-safe rate minus the background rate, per 100,000 person-years.

Selection bias: how many reached VAERS

V-safe could have sent every one of these people to VAERS. Few were sent. I measure the gap with a selection bias (SB), introduced here. For an injury X,

$$\text{SB}_X = \frac{N_{\text{V-safe}}(X)}{N_{\text{VAERS from V-safe}}(X)} - 1$$

Equation (2). Selection bias is the number of V-safe reports for each one that reached VAERS, minus one.

A case counts as reaching VAERS when it matches a VAERS report sent from V-safe that names an aortic term. The match uses sex, age, vaccination dates and manufacturer.

Table 2. Most likely totals, VAERS counts and selection bias: assignment [Monte Carlo mean, 95% interval].

Injury	Most likely cases	In VAERS	SB
Thoracic (TAA)	186 [186.4, 175–196]	2 [1.55, 1–2]	92 [134, 87–193]
Abdominal (AAA)	151 [150.6, 141–162]	1 [1.45, 1–2]	150 [116, 70–159]

One site-unnamed case that reached VAERS can fall on either side in the Monte Carlo draws, so the intervals are wide.

Three more abdominal cases match a VAERS report, but not uniquely. As a sensitivity test only, counting them as reached gives 4 abdominal cases in VAERS and an abdominal SB of 37, down from 150. The main figures do not use them.

A V-safe report missing from V-safe

The CDC did send V-safe cases to VAERS. One woman in Alaska's VAERS record is marked as a V-safe report (report type "vsafe"). Once a report enters VAERS, VAERS's rules apply to it. The CDC said in public, before the rollout, that this would happen. In an October 2020 presentation, it described "active telephone follow-up through the VAERS program with people reporting a clinically important event during any v-safe health check." It added that "A VAERS customer service representative conducts active telephone follow-up on a clinically important event and

completes a VAERS report if appropriate" (CDC, 2020). In February 2021, MMWR said, "Enrollees who report seeking medical care are contacted, and a VAERS report is completed if clinically indicated" (Gee et al., 2021). The CDC hedged. A report would be completed "if appropriate" (CDC, 2020), or "if clinically indicated" (Gee et al., 2021), after a "clinically important event." But a VAERS report needs very little to be appropriate. FDA guidance names a minimum of four things: "An identifiable patient," "An identifiable reporter," "A suspect drug or biological product," and "An adverse experience or fatal outcome" (FDA, 2001). VAERS itself asks for "any clinically important medical event or health problem that occurs after vaccination" (VAERS, 2026). An aortic aneurysm found after seeking medical care is clinically important by any reading, and it is clinically indicated by the care itself. Each V-safe registrant who said they got medical care had already given the CDC all four elements. The National Childhood Vaccine Injury Act of 1986 made such reports go to the government: "Each health care provider and vaccine manufacturer shall report to the Secretary" listed events after vaccination (42 U.S.C. § 300aa-25). By the CDC's own test, these reports should have reached VAERS.

A 42-year-old woman in Alaska got her fourth COVID-19 vaccine dose, made by Moderna, on 19 June 2022. Her earlier Moderna doses had already made her faint. About six months later, in January 2023, she had COVID-19 with fever, body aches and fatigue. She was monitored at an emergency room because she had difficulty breathing. Tests were run, and in her words, "at that time I was diagnosed with an aortic aneurysm." VAERS gives her onset as 1 January 2023, 196 days after the dose. When she filed on 22 June 2023, she was not recovered and was "taking medication for my heart." VAERS coded her report as coming through V-safe. Yet I could not find her in the V-safe data. The call centre logged no calls at all on the day her report was received. A search by sex, age and vaccination date found no one.

Most likely totals

Report 1 split the 145 site-unnamed cases by the reporting ratio of 100 thoracic to 92 abdominal. Here I first read the words. 15 cases point to the chest (chest, aortic root, ascending, arch, open-heart surgery) and 1 to the belly (stomach, belly, "triple A"). Each goes to that side. That leaves 115 thoracic, 93 abdominal and 129 site-unnamed. The Monte Carlo then assigns the remainder by the updated ratio of 115 thoracic to 93 abdominal: in each of 1,000 runs (seed 20261026), a case is thoracic with probability 115/208.

$$\mathrm{TAA}_{\mathrm{ML}} = N_{\mathrm{T}} + N_{\mathrm{AA,\,T\ clue}} + \sum_{i=1}^{129} B_i,$$
$$B_i \sim \mathrm{Bernoulli}(115/208)$$

Equation (3). Most likely thoracic cases are the named thoracic cases, plus clue cases, plus a random share of the rest.

Each case report needs a single site. One seeded draw sends 129 × (115/208) = 71 of the 129 to most likely thoracic, 115 + 71 = 186; the remaining 129 − 71 = 58 go to most likely abdominal, 93 + 58 = 151. That gives 186 most likely thoracic and 151 most likely abdominal cases, against 176 and 161 in Report 1. The URF and the excess of Report 1 do not change.

Scoring: most likely vaccine injury

Each case is scored on seven factors, 0 to 2 each, for a maximum of 14. The rubric is introduced here for thoracic aortic aneurysms.

- **a. Days from the most recent dose to onset:** 2 = 42 days or less; 1 = 43 to 182; 0 = more.
- **b. Dose:** 2 = dose 3 or later; 1 = dose 2; 0 = dose 1.
- **c. Pre-existing aortic disease:** 2 = none named; 1 = another aortic risk, such as a dilated aorta or valve disease; 0 = a known or monitored aneurysm, Marfan syndrome or a prior repair.
- **d. Wording:** 2 = names an aneurysm; 1 = enlargement or hedged wording.
- **e. Care:** 2 = hospital, surgery or repair; 1 = emergency, clinic or telehealth only; 0 = none recorded.
- **f. Bounding by Good check-ins:** 2 = last Good check-in 14 days or less before the report; 1 = 15 to 91 days; 0 = more or none.
- **g. Age:** 2 = under 50; 1 = 50 to 64, or not recorded; 0 = 65 or older.

Onset is the midpoint between the last scheduled check-in and the first aneurysm report. The 99 thoracic cases already reviewed by hand keep their scores. All other cases are scored by the same rules in code.

Where to draw the line

The threshold T comes from the excess, not from a round number. At a URF of 16, V-safe shows 51.1 thoracic aortic aneurysms per 100,000 person-years where 5.3 were expected. Of every 51.1, then, 45.8 are excess. Injured to not injured should be 45.8 to 5.3, about 8.6 to 1, so about 89.6% of most likely thoracic cases should count as likely injured. T is the lowest whole score that keeps the likely-injured share at or below that target, so at least 10% of cases are left as not injured.

$$T = \min\left\{ k : \frac{N_{\mathrm{TAA}}(\mathrm{score} \geq k)}{186} \leq \frac{45.8}{51.1} \right\}$$

Equation (4). The threshold is the lowest score at which the likely-injured share of thoracic cases does not exceed the excess share, 45.8 of 51.1.

T is 7 of 14. 146 of 186 most likely thoracic cases score 7 or more (78.5%), and 40 (21.5%) are left as not injured. One point lower (94.6%) would count as injured above the target.

Abdominal aortic aneurysms: the URF of 16 is low

Report 1 treats every abdominal aortic aneurysm in V-safe as background, and that sets the URF of 16. Abdominal cases get a stricter cutoff here, 10 of 14 rather than 7. The rubric was built for thoracic aneurysms, and many background abdominal reports score in the middle. At 10 or more, 15 of the 151 most likely abdominal cases still score like likely injuries (X = 9.9%). If those were injuries, not background, V-safe caught even fewer background cases, and the URF rises:

$$\mathrm{URF}_{\mathrm{adj}} = \frac{16}{1 - X} = \frac{16}{1 - 0.099} \approx 17.8$$

Equation (5). If a share X of abdominal reports are injuries, the underreporting factor grows by 1/(1 − X).

This is an example only. The URF of 16 stands. It shows that 16 errs low, so the excess it gives is conservative. By onset window the most likely abdominal cases number 28 [within 42 days], 90 [43 to 182 days] and 33 [after 182 days]. The abdominal case reports are in Addendum B.

A refined underreporting factor: sorting by sex and age

Why I revisited the under-reporting factor

Technical Report 1 derived an under-reporting factor (URF) of 16 from the abdominal aortic aneurysm ceiling. At the background rate of 49 per 100,000 person-years over 55.09 hundred-thousand person-years, about 2,699.4 abdominal aortic aneurysms would be expected in V-safe. Technical Report 1 assigned the 129 reports that named no site in proportion to the named thoracic and abdominal reports. That gave a most likely (ML) abdominal count of 161, so 2,699.4 / 161 = 16.77, rounded down to 16.

That proportional split ignores who wrote the unnamed reports. Named thoracic and abdominal reports have very different sex and age profiles, so I re-sorted the unnamed reports using the observed sex- and age-dependent ratios.

Method

- **Men.** Named thoracic men split 11:24 (aged 55 or younger : over 55). Named abdominal men split 1:46. Unnamed men split 6:50. I solved for the thoracic share p that reproduces 6:50 from the two named profiles, which gave p = 0.29305. An unnamed man aged 55 or younger then has an 85.96% chance of being thoracic. An unnamed man over 55 has a 22.51% chance.
- **Women.** The same solve gave p = 1.87, which is impossible. The unnamed women are younger than either reference group: 16 of 51 (31%) are aged 55 or under, against 11 of 54 (20%) of thoracic women and 2 of 26 (8%) of abdominal women. No mix of the two groups can be that young. Setting p = 1, all thoracic, is the closest feasible fit (a boundary solution), and it still falls short of their young share. So all unnamed women go to thoracic.

- **Age missing.** The 22 unnamed reports without an age use their sex's overall p.
- **Monte Carlo.** I ran 1,000 random assignments (seed 20261026). Each run gives whole-person thoracic and abdominal counts that sum to 337.

Assigning site-unnamed reports by sex and age

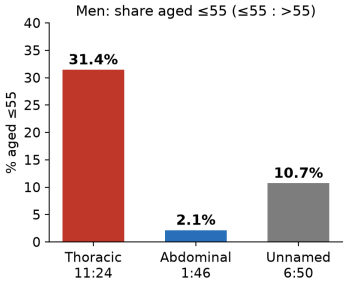
ML = most likely site. Thoracic = thoracic aortic aneurysm (TAA); abdominal = abdominal aortic aneurysm (AAA)

Step 1. Sort by named site and wording clues

115 ML thoracic, 93 ML abdominal, 129 site-unnamed (counts before assignment)

	Pop.	M ≤55	M >55	F ≤55	F >55	Age not given
ML thoracic	115	11	24	11	43	26
ML abdominal	93	1	46	2	24	20
Site-unnamed	129	6	50	16	35	22

Step 2. Men: mix the two reference age profiles

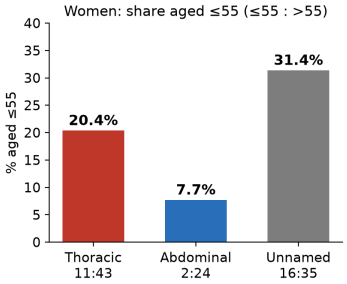


Solve for p (share thoracic):
p·11/35 + (1−p)·1/47 = 6/56

p = 29.3%

Chance thoracic by age band:
≤55: 86.0%
>55: 22.5%

Step 3. Women: unnamed are younger than both references



Same equation:
p·11/54 + (1−p)·2/26 = 16/51

p = 1.87 (>1, infeasible)
→ capped at p = 1:
all unnamed women thoracic

Step 4. Sex known, age not given

22 unnamed reports (10 men, 12 women) use their sex's overall p:
men 29.3% thoracic, women 100% thoracic

Step 5. Final totals (Monte Carlo, 1,000 runs, seed 20261026)

	Pop.	M ≤55	M >55	F ≤55	F >55	Age not given
Thoracic named/clue	115	11	24	11	43	26
Thoracic assigned	82.5	5.2	11.3	16.0	35.0	15.0
Thoracic total	197.5	16.2	35.3	27.0	78.0	41.0
Abdominal named/clue	93	1	46	2	24	20
Abdominal assigned	46.5	0.8	38.7	0.0	0.0	7.0
Abdominal total	139.5	1.8	84.7	2.0	24.0	27.0

ML thoracic 197.5 (95% range 191–204) **ML abdominal 139.5 (95% range 133–146)**

Assigned rows are Monte Carlo means; each unnamed report drawn by its own probability. Age not given = age or sex not given.

Figure 1. How the reports that name no site are sorted. Each unnamed report is placed by sex and age (55 or younger, or over 55) and given a chance of being thoracic that matches the named reports: 85.96% for men aged 55 or younger, 22.51% for men over 55, and 100% for women (the closest feasible fit). Reports without an age use their sex's overall share.

Step by step: one representative run

Figure 2 and Table 3 follow one representative run (run 50, seed 20261026) from the named reports to a full assignment. Each step moves some still-unnamed reports into thoracic or abdominal. Every row sums to 337.

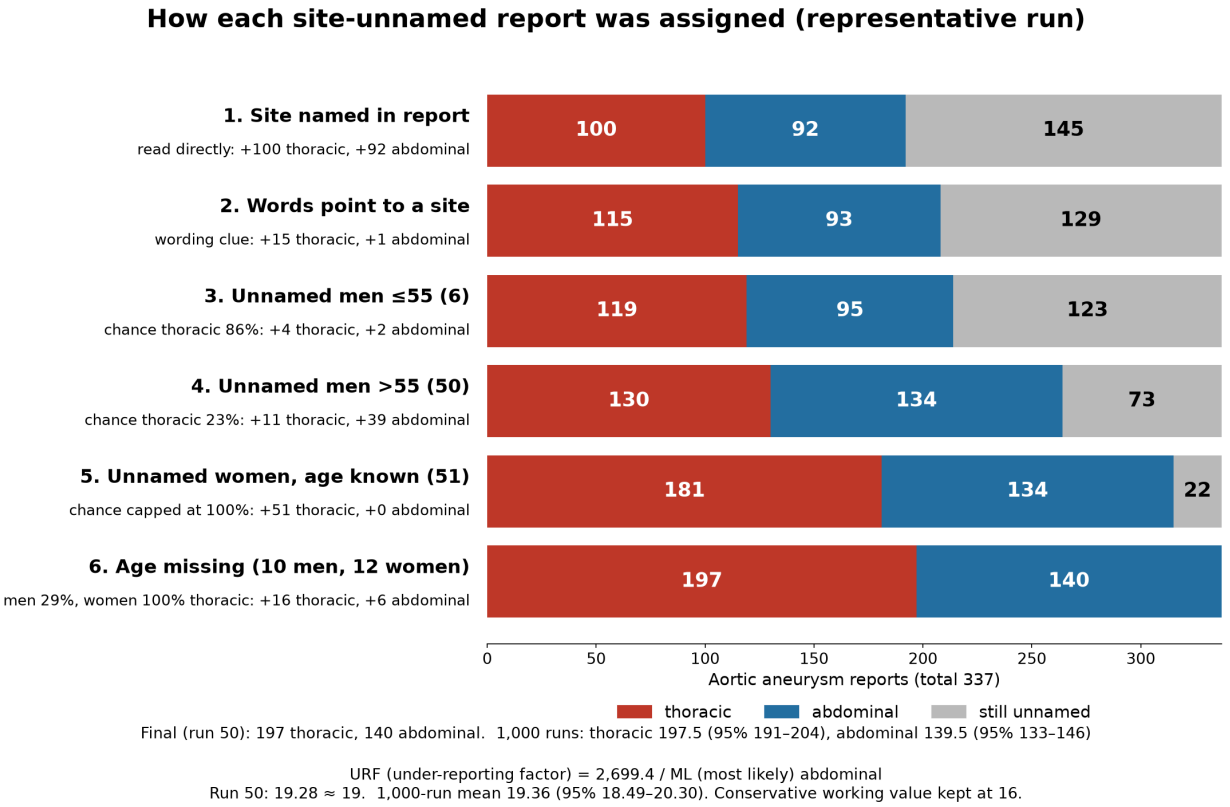


Figure 2. Build-up of the most likely thoracic and abdominal counts, step by step, for run 50. Bars show thoracic, abdominal and still-unnamed reports after each step.

Table 3. Step-by-step assignment, run 50: thoracic | abdominal | still unnamed.

Step	Thoracic	Abdominal	Unnamed
1. Named site	100	92	145
2. Text clues (+15 thoracic, +1 abdominal)	115	93	129
3. Men 55 or younger (6 cases, 86% thoracic; +4 / +2)	119	95	123
4. Men over 55 (50 cases, 23%; +11 / +39)	130	134	73
5. Women, age known (51 cases, boundary fit p = 1; +51 / +0)	181	134	22
6. Age missing (10 men at 29%, 12 women at 100%; +16 / +6)	197	140	0

Result

Across the 1,000 runs, the unrounded URF (2,699.4 / ML abdominal) has a mean of **19.36**. Its 95% interval (2.5th to 97.5th percentile) is **18.49 to 20.30**, and the full range is 18.12 to 21.09. Rounded down, the URF is 18 in 19.1% of runs, 19 in 73.9%, 20 in 6.9% and 21 in 0.1%. The representative run (run 50) has 197 ML thoracic and 140 ML abdominal reports, giving a URF of 19 (19.28). The correction factor (CF) is about 2.0, and the thoracic-to-abdominal proportional reporting ratio (PRR) is 13.01.

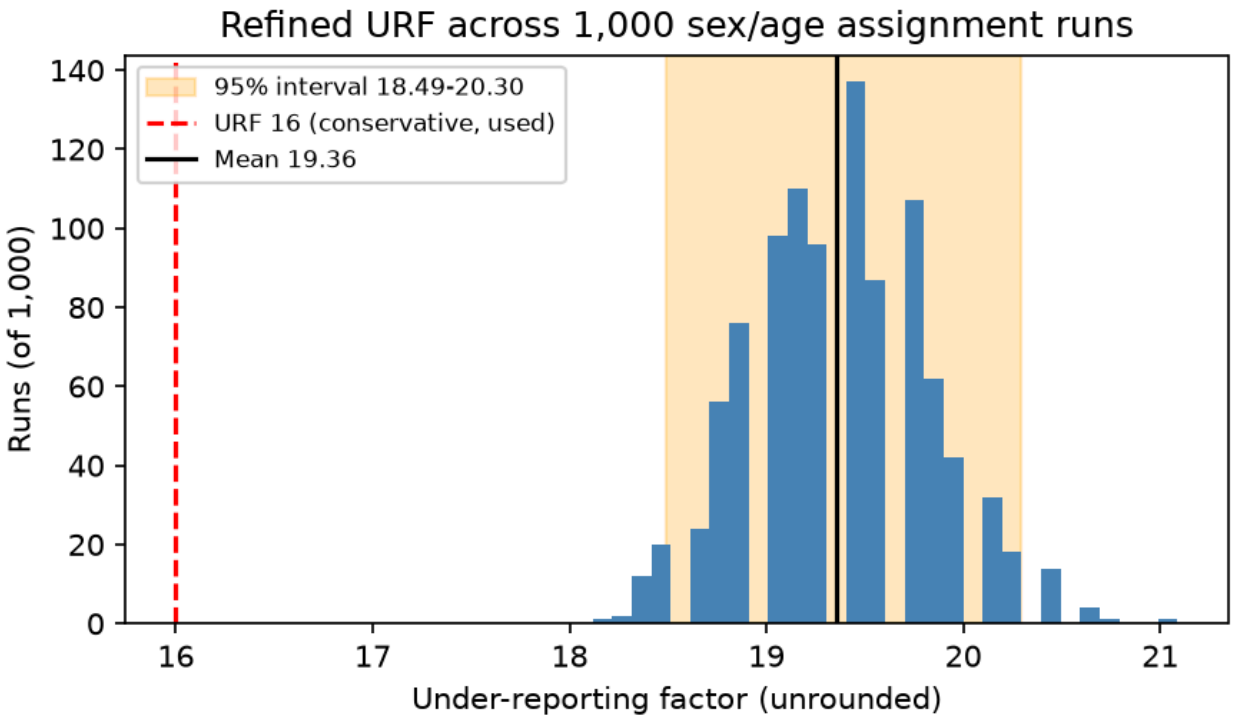


Figure 3. The refined URF across 1,000 random assignments. Each bar counts runs giving that URF. The mean is 19.36 and the 95% range is 18.49 to 20.30. Every run lies above the working value of 16, which I keep for conservatism.

Table 4. Under-reporting factor: Technical Report 1 [refined, 1,000 runs]

Quantity	Value
ML thoracic / abdominal	176 / 161 [197 / 140, run 50]
URF, unrounded	16.77 [mean 19.36; 95% interval 18.49–20.30]
URF, rounded down	16 [18: 19.1%, 19: 73.9%, 20: 6.9%]
CF	1.71 [2.03]
PRR	10.11 [13.01]

My choice. I think the refined URF of about 19 is probably closer to the true value. For conservatism, I keep the URF at **16** for every estimate in this report. Every run of the refined sort gave a URF of 18 or more, so 16 lies below the whole simulated range. The refined figures below show how much larger the true burden may be.

Table 5. Downstream estimates using the refined counts (run 50): URF 16 [URF 19]

Estimate	URF 16 [URF 19]
Thoracic rate per 100,000 person-years	57.2 [67.9] vs background 5.3
Implied thoracic diagnoses, V-safe	3,152 [3,743]
Excess cases, V-safe	2,860 [3,451]
Excess cases, US	76,456 [92,255]
Ruptures, 5 years, V-safe [US]	572 [15,291] at URF 16; 690 [18,451] at URF 19
Deaths, 5 years, V-safe [US]	1,258 [33,641] at URF 16; 1,518 [40,592] at URF 19

For comparison, Technical Report 1 (176 ML thoracic at URF 16) gave 2,524 excess cases in V-safe, 67,474 across the US, 505 ruptures and 1,111 deaths.

Formulas, as in `calc/tr1_sexage_caselevel.py`*:* implied = ML thoracic × URF. Excess = implied − 5.3 × 55.09 (291.98 expected). US = excess × 270 / 10.1. Ruptures = 0.20 × excess, and deaths = 0.44 × excess. The rate is the URF × the week-52 thoracic lower bound (3.576 per 100,000 person-years in run 50). The URF 19 column comes from the representative run in `calc/tr1_sexage_caselevel_summary.csv`. The URF 16 column is recomputed with the same formulas.

Limitation: the cap for women

The boundary fit for women (p = 1) is what the age data point to, not an arbitrary choice, but it sends all 63 unnamed women (51 with an age, 12 without) to thoracic. That makes the refined sort lean thoracic. As a rough sensitivity check, I split the unnamed women at the named women's thoracic-to-abdominal ratio instead (54:26), with the men unchanged. That adds about 20.5 abdominal reports (ML abdominal about 160.0) and brings the URF back to 2,699.4 / 160.0 = 16.87, rounded down to 16. This is an analytic expected-value estimate, not a new Monte Carlo run. The refined URF therefore depends heavily on how the unnamed women are assigned. That is one more reason to keep 16.

Plain-language summary

In my first report, I estimated that V-safe captured about 1 in 16 aortic aneurysms. To get that figure, I split the reports that didn't say where the aneurysm was in the same proportion as the reports that did. In this report, I used who wrote each report instead. Abdominal aneurysms mostly affect older men, while thoracic reports came from younger people and many women. Sorting the unnamed reports this way, repeated 1,000 times, puts the factor at about 19 (95% range 18.5 to 20.3). That would mean V-safe missed even more cases, and that the excess of thoracic

aneurysms was about a fifth larger than I reported. Because this sorting depends on assumptions, especially about women, I keep the lower factor of 16 for all my estimates. The true numbers are probably higher.

Top 10 thoracic aortic aneurysm case reports

I take the top 5 thoracic cases with onset within 42 days, the top 3 at 43 to 182 days and the top 2 after 182 days, the (5,3,2) rule, from the 100 named thoracic cases. Each report shows only V-safe and CDC fields: the person's own words, the Medical Dictionary for Regulatory Activities (MedDRA) terms the CDC coded, doses, onset, care, the call-log category and the seven scores. All 186 most likely thoracic cases are in Addendum A, and all 151 most likely abdominal cases in Addendum B.

Case map. Grouped by onset window as in the interval breakdown; rank within the window of the named thoracic cases. Each line: rank · case ID (linked) · sex, age · dose and estimated onset day · score · key hit (decisive wording; care ticked).

Onset within 42 days: top 5 cases

1. TAA-85 · F 57 · D3, day 18.5 · **12/14** · "Ascending aortic aneurysm"; telehealth
2. TAA-11 · M 57 · D2, day 24.5 · **12/14** · "ascending aorta aneuristic dilation 4.6…"; clinic
3. TAA-9 · F 63 · D2, day 10.5 · **12/14** · "Chest pain and back pain,…"; ER
4. TAA-6 · F, age n/r · D2, day 10.5 · **12/14** · "Shingles and diagnosed with a…"; ER
5. TAA-74 · F 70 · D4, day 10.5 · **11/14** · "Aneurysms in my chest and…"; ER

Onset at 43 to 182 days (about 6 months): top 3 cases

1. TAA-23 · F 36 · D2, day 136.5 · **10/14** · "Thoracic aortic aneurysm"; clinic
2. TAA-43 · M 46 · D2, day 67.5 · **10/14** · "Ascending aortic aneurysm"; ER
3. TAA-12 · M 50 · D2, day 66.5 · **10/14** · "Heart blockage and ascending aneurysm"; hospitalized

Onset after 182 days, up to about 1 year and beyond: top 2 cases

1. TAA-80 · M 43 · D2, day 273.5 · **9/14** · "Aortic thoracic enuyrsm with surgery"; hospitalized
2. TAA-97 · F 57 · D3, day 275.5 · **9/14** · "Anxiety and an ascending aortic…"

Ties at the cut-offs.

- **0-42 days:** cut-off score 11, 1 slot(s) for 4 tied cases: TAA-74, TAA-76, TAA-2, TAA-81. Kept: TAA-74. Rule: factor a, then f, then youngest age, then a random draw (seed 20261026).
- **43-182 days:** cut-off score 10, 3 slot(s) for 10 tied cases: TAA-23, TAA-43, TAA-12, TAA-72, TAA-89, TAA-75, TAA-49, TAA-92, TAA-71, TAA-22. Kept: TAA-23, TAA-43, TAA-12. Rule: factor a, then

f, then youngest age, then a random draw (seed 20261026).

Onset within 42 days: top 5 cases

TAA-85. A 57-year-old woman · Janssen/Johnson & Johnson / Moderna · 1 entry · 12/14

- **Doses on file:** D1 2021-03-05 Janssen/Johnson & Johnson; D2 2021-10-22 Moderna; D3 2022-05-06 Moderna.
- **Estimated onset:** day 18.5 after D3 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2022-05-29 · Dose 3 · 21-day check-in · week 4 after dose**
  "**Ascending aortic aneurysm**" MedDRA (CDC coding): Aortic aneurysm (Aneurysm of ascending aorta).
  > Call center: flagged (report 2022-05-29); no call date on file; outcome: successful.
- **Care ticked at check-ins:** Telehealth, virtual health, or email health consultation.
- **Call log:** patient was reached.
- **Factor scores (rank 1 of 21 in this window; total 12 of 14):** a. days to onset 2; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 2; g. age 1.

TAA-11. A 57-year-old man · Moderna · 1 entry · 12/14

- **Doses on file:** D1 2021-03-06 Moderna; D2 2021-04-03 Moderna.
- **Estimated onset:** day 24.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-05-01 · Dose 2 · 28-day check-in · week 5 after dose**
  "**ascending aorta aneuristic dilation** 4.6 centimeter" MedDRA (CDC coding): Aortic dilatation (Ascending aortic dilatation); Aortic aneurysm (Aneurysm of ascending aorta).
  > Call center: flagged (report 2021-05-01); call 1 2022-04-08, left voicemail; outcome: unsuccessful.
- **Care ticked at check-ins:** Outpatient clinic or urgent care clinic visit.
- **Call log:** patient was not reached.
- **Factor scores (rank 2 of 21 in this window; total 12 of 14):** a. days to onset 2; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 2; g. age 1.

TAA-9. A 63-year-old woman · Moderna · 1 entry · 12/14

- **Doses on file:** D1 2021-03-10 Moderna; D2 2021-04-08 Moderna.

- **Estimated onset:** day 10.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-04-22 · Dose 2 · 14-day check-in · week 3 after dose**
  "Chest pain and back pain, **ascending thoracic aneurysm**" MedDRA (CDC coding): Back pain; Chest pain.

  > Call center: flagged (report 2021-04-22); no call date on file; outcome: unsuccessful.

- **Care ticked at check-ins:** Emergency room or emergency department visit; Outpatient clinic or urgent care clinic visit; Outpatient clinic or urgent care clinic visit:Emergency room or emergency department visit.
- **Call log:** patient was not reached.
- **Factor scores (rank 3 of 21 in this window; total 12 of 14):** a. days to onset 2; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 2; g. age 1.

TAA-6. A woman, age not recorded · Pfizer-BioNTech · 1 entry · 12/14

- **Doses on file:** D1 2021-01-06 Pfizer-BioNTech; D2 2021-01-27 Pfizer-BioNTech.
- **Estimated onset:** day 10.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-02-10 · Dose 2 · 14-day check-in · week 3 after dose**
  "Shingles and diagnosed with a **thoracic aortic aneurysm**" MedDRA (CDC coding): Herpes zoster (Shingles); Aortic aneurysm (Thoracic aortic aneurysm).

  > Call center: flagged (report 2021-02-10); call 1 2021-07-18, left voicemail; outcome: unsuccessful.

- **Care ticked at check-ins:** Emergency room or emergency department visit.
- **Call log:** patient was not reached.
- **Factor scores (rank 4 of 21 in this window; total 12 of 14):** a. days to onset 2; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 2; g. age 1.

TAA-74. A 70-year-old woman · Pfizer-BioNTech · 1 entry · 11/14

- **Doses on file:** D1 2021-01-30 Pfizer-BioNTech; D2 2021-02-27 Pfizer-BioNTech; D3 2021-08-16 Pfizer-BioNTech; D4 2022-04-07 Pfizer-BioNTech.
- **Estimated onset:** day 10.5 after D4 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2022-04-21 · Dose 4 · 14-day check-in · week 3 after dose**
  "**Aneurysms** in my chest and stomach" MedDRA (CDC coding): Aortic aneurysm (Thoracic

aortic aneurysm); Aortic aneurysm (Abdominal aneurysm).

> Call center: flagged (report 2022-04-21); call 1 2022-04-22, left voicemail; outcome: unsuccessful.

- **Care ticked at check-ins:** Emergency room or emergency department visit.
- **Call log:** patient was not reached.
- **Factor scores (rank 5 of 21 in this window; total 11 of 14):** a. days to onset 2; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 2; g. age 0.

Onset at 43 to 182 days (about 6 months): top 3 cases

TAA-23. A 36-year-old woman · Moderna · 1 entry · 10/14

- **Doses on file:** D1 2021-01-08 Moderna; D2 2021-02-05 Moderna.
- **Estimated onset:** day 136.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- ★ **2021-08-06 · Dose 2 · 6-month check-in · week 26 after dose**
  "**Thoracic aortic aneurysm**" MedDRA (CDC coding): Aortic aneurysm (Thoracic aortic aneurysm).

  > Call center: flagged (report 2021-08-06); call 1 2021-08-09, left voicemail; outcome: unsuccessful.

- **Care ticked at check-ins:** Outpatient clinic or urgent care clinic visit.
- **Call log:** patient was not reached.
- **Factor scores (rank 1 of 52 in this window; total 10 of 14):** a. days to onset 1; b. dose 1; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 1; g. age 2.

TAA-43. A 46-year-old man · Pfizer-BioNTech · 1 entry · 10/14

- **Doses on file:** D1 2021-08-26 Pfizer-BioNTech; D2 2021-09-16 Pfizer-BioNTech.
- **Estimated onset:** day 67.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- ★ **2021-12-18 · Dose 2 · 3-month check-in · week 13 after dose**
  "**Ascending aortic aneurysm**" MedDRA (CDC coding): Aortic aneurysm (Ascending aortic aneurysm enlargement).

  > Call center: flagged (report 2021-12-18); call 1 2021-12-20, left voicemail; outcome: unsuccessful.

- **Care ticked at check-ins:** Emergency room or emergency department visit; Outpatient clinic or urgent care clinic visit; Outpatient clinic or urgent care clinic visit:Emergency room or emergency department visit.
- **Call log:** patient was reached.

- **Factor scores (rank 2 of 52 in this window; total 10 of 14):** a. days to onset 1; b. dose 1; c. pre-existing aortic disease 2; d. wording 2; e. care 1; f. bounding by Good check-ins 1; g. age 2.

TAA-12. A 50-year-old man · Moderna · 1 entry · 10/14

- **Doses on file:** D1 2021-01-04 Moderna; D2 2021-02-01 Moderna.
- **Estimated onset:** day 66.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-05-03 · Dose 2 · 3-month check-in · week 13 after dose**
  "Heart **blockage** and **ascending aneurysm**" MedDRA (CDC coding): Atrioventricular block (Heart block); Aneurysm.
  > Call center: flagged (report 2021-05-03); no call date on file; outcome: successful.
- **Care ticked at check-ins:** Emergency room or emergency department visit:Hospitalization.
- **Call log:** patient was reached.
- **Factor scores (rank 3 of 52 in this window; total 10 of 14):** a. days to onset 1; b. dose 1; c. pre-existing aortic disease 2; d. wording 2; e. care 2; f. bounding by Good check-ins 1; g. age 1.

Onset after 182 days, up to about 1 year and beyond: top 2 cases

TAA-80. A 43-year-old man · Moderna · 1 entry · 9/14

- **Doses on file:** D1 2021-04-01 Moderna; D2 2021-05-02 Moderna.
- **Estimated onset:** day 273.5 after D2 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2022-05-02 · Dose 2 · 12-month check-in · week 52 after dose**
  "**Aortic thoracic enuyrsm** with **surgery**" MedDRA (CDC coding): Surgery; Aortic aneurysm (Thoracic aortic aneurysm).
  > Call center: flagged (report 2022-05-02); call 1 2022-05-03, left voicemail; outcome: unsuccessful.
- **Care ticked at check-ins:** Hospitalization.
- **Call log:** patient was not reached.
- **Factor scores (rank 1 of 27 in this window; total 9 of 14):** a. days to onset 0; b. dose 1; c. pre-existing aortic disease 2; d. wording 2; e. care 2; f. bounding by Good check-ins 0; g. age 2.

TAA-97. A 57-year-old woman · Moderna · 1 entry · 9/14

- **Doses on file:** D1 2021-03-13 Moderna; D2 2021-04-10 Moderna; D3 2021-11-15 Moderna.

- **Estimated onset:** day 275.5 after D3 (window midpoint between the previous scheduled check-in and the first aneurysm report).
- **Check-in entries** (★ = key entry for the score):
- **★ 2022-11-19 · Dose 3 · 12-month check-in · week 52 after dose**
  "Anxiety and an **ascending aortic aneurysm** which needs **repair** in the coming 6 months"
  MedDRA (CDC coding): Aortic aneurysm (Aneurysm of ascending aorta); Anxiety.
  > Call center: flagged (report 2022-11-19); call 1 2022-11-21, left voicemail; outcome: unsuccessful.
- **Care ticked at check-ins:** none recorded.
- **Call log:** patient was not reached.
- **Factor scores (rank 2 of 27 in this window; total 9 of 14):** a. days to onset 0; b. dose 2; c. pre-existing aortic disease 2; d. wording 2; e. care 2; f. bounding by Good check-ins 0; g. age 1.

Sudden deaths in women 55 and under: my most likely aortic rupture

Case map. Five deaths picked from a cardiology viewpoint, all scored 5 (most likely) on the 1/3/5 scale. Each line: case ID (linked) · sex, age · dose and day of death · likelihood · key hit.

Aortic rupture

- R-1 · F 35 · D2, died day 186 · **likelihood 5 of 5** · aortitis-like signs; died day 186

Probable aortic dissection

- D-1 · F 53 · D1, died day 15 · **likelihood 5 of 5** · "heart attack and a blockage"; died day 15
- D-2 · F 53 · D2, died day 17 · **likelihood 5 of 5** · presumed heart attack day 17; call: voicemail a year later
- D-3 · F 39 · D2, died day 8 · **likelihood 5 of 5** · died day 8; autopsy pending
- D-4 · F 54 · D1, died day 27 · **likelihood 5 of 5** · died day 27; call: voicemail the day after

How I found her

None of the thoracic aortic aneurysm reports above ends in a recorded death. So I searched the other way, starting from the deaths. I read every V-safe free-text entry in which a woman 55 or under, or someone writing for her, reported that she had "died," "passed away," or died suddenly. I scored each death 1 (not likely), 3 (maybe) or 5 (most likely) as a sudden aortic death. The scores weigh how abrupt the death was, its timing after a dose, her age, and whether the CDC followed up. I then scored the set from a cardiology viewpoint, as the late Dr. Andreas Grüntzig might have read it, and picked the five women most likely to have died of an aortic cause (my method; see 'How a cardiologist might read this').

I compared what I found with reports to VAERS for COVID-19 vaccines, 2021 to 2023.

Descriptive statistics

VAERS, COVID-19 vaccine reports, 2021 to 2023. Counts are women [men]. The ratio is women per man, for reports [deaths].

Group	Reports	Deaths	Ratio
Aortic aneurysm term, all ages	61 [109]	9 [10]	0.56 [0.90]
Aortic aneurysm term, 55 and under	8 [17]	0 [1]	0.47 [0]
“Thoracic” in report text, all ages	18 [32]	2 [0]	0.56 [no men]
“Thoracic” in report text, 55 and under	0 [5]	0 [0]	0 [none]
Aortic aneurysm rupture term, all ages	3 [10]	3 [6]	0.30 [0.50]
Aortic aneurysm rupture term, 55 and under	0 [0]	0 [0]	none
All COVID-19 reports, all ages	632,016 [318,982]	7,250 [10,456]	1.98 [0.69]
All COVID-19 reports, 55 and under	340,748 [157,996]	684 [1,030]	2.16 [0.66]

The “thoracic” rows are a keyword search of the report text (thoracic, ascending, aortic root, arch), not a vetted list. 100,631 COVID-19 reports give no age and are left out of the 55-and-under rows.

Women file about twice as many VAERS reports as men, yet fewer of their reports are deaths. Among people 55 and under, VAERS holds one aortic aneurysm death, a man, and no thoracic aneurysm deaths in women.

V-safe, women 55 and under who died. I scored 22 women: 8 scored 5, 9 scored 3 and 5 scored 1. When I scored them from a cardiology viewpoint, 5 score 5, 12 score 3 and 5 score 1. These are judgments from free text, not causes of death. None of these deaths was confirmed as aortic by autopsy or imaging.

How a cardiologist might read this (my opinion). This paragraph is my own opinion. It is not a quotation from, or an endorsement by, Grüntzig, Bhakdi or Burkhardt. A cardiologist like the late Dr. Andreas Grüntzig, who performed the first coronary balloon angioplasty (Grüntzig, 1978), looking for the vaccine-related injuries described by Bhakdi and the pathologist Burkhardt (Bhakdi and Burkhardt, 2021), would likely read these deaths through their lens. They described immune-cell (T-cell) inflammation in the organs of 14 of 15 people who died after vaccination. If inflammation of that kind reaches a vessel wall, the aorta is a vessel where it would matter, and a sudden death at home called a heart attack is where it could hide. To my best knowledge, their report was not peer-reviewed and had no control group; however, they are giants in their fields of expertise, and I weigh their opinions as such (see Appendix). The scores above, made from a cardiology viewpoint, are a reading of free text through that lens, not causes of death; only an autopsy or imaging could confirm them. When I am not reporting on the vaccine injured, I develop architectures and embedded firmware for life-saving, resilient, single-fault-safe robots;

sometimes I get to test these robots on a patient simulator; one such robot let a cardiologist treat patients from 20 miles away (MathWorks, n.d.; see Appendix). This is when I get to simulate what it feels like to put a "Doctor's hat on" (PhD EE) and "treat" a virtual patient.

Aortic rupture deaths

R-1. A 35-year-old woman: my most likely aortic rupture death · Pfizer-BioNTech · 4 entries · likelihood 5 of 5

- **Doses on file:** D1 2021-02-12 Pfizer-BioNTech; D2 2021-03-05 Pfizer-BioNTech.
- **Check-in entries** (★ = key entry for the score):
- **2021-04-02 · Dose 2 · 28-day check-in · day 28**
  "severe migraine (sometimes causing rainbows in my peripherals), fatigue, chills, occasional fever, sun sensitivity, swelling, rashes with blisters, muscle cramps, aches, light sensitivity, **high blood pressure**, nausea, diarrhea with bad stomach cramps"
  > Call center: flagged (report 2021-04-02); no call date on file; outcome: unsuccessful.
- **2021-04-10 · Dose 2 · 35-day check-in · day 36**
  "Having to see several specialists and be on long term steroids because nobody can figure it out. Im miserable."
  > Call center: flagged (report 2021-04-10); no call date on file; outcome: unsuccessful.
- **2021-06-06 · Dose 2 · 3-month check-in · day 93**
  "The muscle spasms are getting worse and my arms and legs have **purple streaks** and are cold too there touch. My arms and legs are covered in bruises that I cant explain also."
  > Call center: flagged (report 2021-06-06); call 1 2021-06-16, left voicemail; outcome: unsuccessful.
- **★ 2021-09-09 · Dose 2 · 6-month check-in**
  "[name] **died** on Tuesday. Waiting for results of **autopsy** but was told did have covid. However on Saturday had tested negative." That Tuesday was 2021-09-07, day 186 after dose 2.
  > Call center: not flagged for a call.
- **Health impact ticked:** unable to work, unable to do normal daily activities, and got care from a doctor.
- **Call log:** patient was not reached.
- **From a cardiology viewpoint:** In a young woman, high blood pressure, a blistering rash, purple streaks and cold limbs over months fit a large-vessel aortitis (Takayasu-type). Long-term steroids weaken an inflamed aortic wall, which is a recognized route to aneurysm and rupture. Of the deaths I reviewed, hers shows the most aortic-specific signs.

She never named an aneurysm, so she is not among the 100 named thoracic cases above. I found her only by starting from the deaths.

Probable aortic dissection deaths

From a cardiology viewpoint, the other four picks look like dissections rather than ruptures. They were sudden, cardiac-looking deaths within weeks of a dose. I describe them without counts or rates.

D-1. A 53-year-old woman · Moderna · 1 entry · likelihood 5 of 5

- **Doses on file:** D1 2021-02-26 Moderna.
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-03-12 · Dose 1 · 14-day check-in · day 14**
  "Had a **heart attack** and a **blockage**". A later entry says she **died** on 2021-03-13, day 15.
  > Call center: flagged (report 2021-03-12); call 1 2021-06-11, could not reach participant; outcome: unsuccessful.
- **Call log:** patient was not reached. Every call attempt came in June 2021, three months after her death.
- **From a cardiology viewpoint:** A heart attack with a blockage that kills within a day is the textbook way a type A dissection presents when the torn lining blocks a coronary artery.

D-2. A 53-year-old woman · Moderna · 1 entry · likelihood 5 of 5

- **Doses on file:** D1 2021-02-17 Moderna; D2 2021-03-17 Moderna.
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-04-07 · Dose 2 · 21-day check-in**
  her husband wrote, "[name] **passed away** from what at this time is presumed to be a **heart attack** on the morning of 4/3." That was day 17 after dose 2. "Emergency crews were called to our home."
  > Call center: flagged (report 2021-04-07); call 1 2022-03-18, left voicemail; outcome: unsuccessful.
- **Call log:** patient was not reached. The only attempt was a voicemail on 2022-03-18, almost a year later.
- **From a cardiology viewpoint:** an unwitnessed death at home called a presumed heart attack is where aortic deaths hide in women this age. The likely picture is a dissection bleeding into the sac around the heart (tamponade).

D-3. A 39-year-old woman · Pfizer-BioNTech · 1 entry · likelihood 5 of 5

- **Doses on file:** D1 2021-04-27 Pfizer-BioNTech; D2 2021-05-20 Pfizer-BioNTech.
- **Check-in entries** (★ = key entry for the score):
- **★ 2021-06-10 · Dose 2 · 21-day check-in**
  "[name] **passed away** on 5/28/21. Cause of death TBD, pending **autopsy** results." That was day 8

after dose 2.

> Call center: flagged (report 2021-06-10); call 1 2021-06-21, left voicemail; outcome: unsuccessful.

- **Call log:** patient was not reached (one voicemail).
- **From a cardiology viewpoint:** an abrupt death at 39 with no other cause given fits a dissection with tamponade. The pending autopsy is the single most decisive document in this set.

D-4. A 54-year-old woman · Moderna · 3 entries · likelihood 5 of 5

- **Doses on file:** D1 2021-06-02 Moderna.
- **Check-in entries** (★ = key entry for the score):
- **2021-06-16 · Dose 1 · 14-day check-in · day 14**
  "Fever, SOB, weak" (SOB: shortness of breath).

  > Call center: not flagged for a call.
- **2021-06-23 · Dose 1 · 21-day check-in · day 21**
  "Fever SOB weakness Even though Im experiencing these symptoms I bet that you will never call me because you dont want to know. I actually thought that you would have called last week. but you didnt."

  > Call center: flagged (report 2021-06-23); call 1 2021-06-30, left voicemail; outcome: unsuccessful.
- **★ 2021-06-30**
  "She **died** yesterday." That was 2021-06-29, day 27.

  > Call center: not flagged for a call.
- **Call log:** patient was not reached. The only call was a voicemail on 2021-06-30, the day after she died.
- **From a cardiology viewpoint:** two weeks of fever, shortness of breath and weakness before death fit an inflamed or slowly leaking aorta. Myocarditis and pulmonary embolism compete.

A challenge to the reader

Of the 186 most likely thoracic aortic aneurysm cases, **2** reached VAERS. Of the 151 most likely abdominal cases, **1** did. Can you find them? And which of the rest would you have reported?

• • •

I once carried Cecilia at the beach, and for that I am blessed. I now write for those who reported their injuries to V-safe and were ignored by the people charged with keeping them safe.

About Bhakdi and Burkhardt (for the interested reader)

Dr. Sucharit Bhakdi is a physician and microbiologist. He chaired the Institute of Medical Microbiology and Hygiene at the Johannes Gutenberg University of Mainz from 1990 until he retired in 2012. He has published more than 300 research articles in immunology, bacteriology, virology and parasitology, and from 1990 to 2021 he was Editor-in-Chief of *Medical Microbiology and Immunology*, a journal founded by Robert Koch in 1887 (Bhakdi, 2023 CV). His honours include the Aronson Prize (2001) for his work on the complement system and bacterial toxins (Universität Mainz, 2002), and in 2005 the *Verdienstorden des Landes Rheinland-Pfalz* (Order of Merit of the State of Rhineland-Palatinate) (Bhakdi, 2023 CV; Staatskanzlei Rheinland-Pfalz, 2006).

Prof. Dr. Arne Burkhardt (1944–2023) was a pathologist who taught at the Universities of Hamburg, Bern and Tübingen. He held visiting professorships or study stays in Japan, the United States, Korea, Sweden, Malaysia and Turkey. He headed the Institute of Pathology in Reutlingen for 18 years and published more than 150 original papers, mainly on lung and head-and-neck pathology, as well as handbook chapters in German, English and Japanese (Bhakdi and Burkhardt, 2021; MWGFD, 2023a). He came out of retirement in 2021 to study deaths after vaccination and died on 30 May 2023 (Doctors for COVID Ethics, 2023). Bhakdi gave the eulogy at his memorial and called him a close friend and colleague (Doctors for COVID Ethics, 2023; MWGFD, 2023b). In that eulogy Bhakdi said: “This man stood up, and that was the spring of 2021, and went back to the microscope and went back to start looking at specimens that were sent to him. Slides. Just simply amazing. When I think of this, I bow down to him.” He added: “Selfless dedication, humility, and humbleness are the pillars of medicine, science, and humanity. And Arne Burkhardt has been the living example of this.” (Bhakdi, 2023; video: https://rumble.com/v2tzsww-prof.-dr.-arne-burkhardt-memorial.html; transcript: https://docs.google.com/document/d/1CIXTYzBczdtq3alWg73dpRxkXKGMbxSAQuHdxuNVjlQ/edit). I regard both men as giants in their fields.

Bhakdi’s own field is the complement system, and in his December 2022 symposium talk he explained how the immune system turns on cells that make the spike protein. If cells lining the vessel walls make it, “the antibodies will be there to attack… Those antibodies will now bind to the cells that are making these viral proteins, and the antibodies will cause complement to be activated.” He contrasted the two attacks: T lymphocytes cause a silent death, “But complement is a violent killer: violent death, and death ensues with a lot of inflammation going on.” Once the lining cell is killed, “every injury to the endothelial wall will cause clots to form” (Bhakdi, 2022). In my view, this is why I look for injury to the vessel wall itself: the aorta is a vessel where such an attack would matter, and that is the kind of injury I searched for in the thoracic aneurysm and sudden-death cases above.

My robotics work (for the interested reader)

In 2018, Dr. Tejas Patel at the Apex Heart Institute in Ahmedabad, India, treated five patients with robot-assisted percutaneous coronary intervention (PCI), the balloon-and-stent procedure that grew out of Grüntzig's 1978 work, while he sat about 20 miles away, guiding the CorPath GRX robot from a remote workstation. It was the first long-distance robotic heart procedure of its kind (MathWorks, n.d.). I, then an R&D Fellow at Corindus, modeled and designed the robot's control systems and the real-time link between the two sites: fluoroscopic video sent over the network, and clocks at both ends kept in step so the physician always knows the delay and the system can stop the physician from operating over a poor connection. Patel reported a mean network delay of 53 milliseconds, "most likely imperceptible to the operator" (MathWorks, n.d.). In a short video, I explain how the system was built (MathWorks, 2020).



References

CDC (Centers for Disease Control and Prevention) (2020) 'COVID-19 post-authorization/post-licensure safety monitoring' [presentation by T. Shimabukuro], *Vaccines and Related Biological Products Advisory Committee meeting*, 22 October 2020. Available at: https://www.fda.gov/media/143530/download

Bhakdi, S. (2022) *Why all mRNA vaccines will cause harm* [video and transcript]. Doctors for COVID Ethics (D4CE) 5th Symposium. Video: https://rumble.com/v21xa6i-d4ce-5th-symposium-why-all-mrna-vaccines-will-cause-harm-by-sucharit-bhakdi.html (Rumble, posted 22 December 2022). Transcript (Detail app, corrected for speech-to-text errors with Grok Bot, 30 October 2026): https://docs.google.com/document/d/1dsx3zVExLppU4xeSGtSEQuHfTUWB9bZiHu4bBQYzLNQ/edit Discussed by me on X, 25 September 2026: https://x.com/NickKottenstet1/status/2103657295037030586

Bhakdi, S. (2023) *Curriculum vitae* [in German], dated 12 May 2023. Doctors for COVID Ethics. Available at: https://doctors4covidethics.org/wp-content/uploads/2023/05/sb-cv-de.pdf (accessed 30 October 2026). English version: Doctors for COVID Ethics, About Sucharit Bhakdi, MD. Available at: https://doctors4covidethics.org/about-sucharit-bhakdi-md/ (accessed 30 October 2026).

Bhakdi, S. (2023) *Eulogy for Prof. Dr. Arne Burkhardt* [video and transcript]. Doctors for COVID Ethics memorial meeting, 8 June 2023. Video: https://rumble.com/v2tzsww-prof.-dr.-arne-burkhardt-memorial.html (posted by Doctors for COVID Ethics on X, 14 June 2023: https://x.com/Drs4CovidEthics/status/1669004250758651904). Transcript (Detail app, corrected for speech-to-text errors with Grok Bot, 30 October 2026): https://docs.google.com/document/d/1CIXTYzBczdtq3alWg73dpRxkXKGMbxSAQuHdxuNVjlQ/edit

Bhakdi, S. and Burkhardt, A. (2021) *On COVID vaccines: why they cannot work, and irrefutable evidence of their causative role in deaths after vaccination* [not peer reviewed]. Doctors for COVID Ethics, 10 December 2021. Available at: https://doctors4covidethics.org/on-covid-vaccines-why-they-cannot-work-and-irrefutable-evidence-of-their-causative-role-in-deaths-after-vaccination/

Clouse, W.D., Hallett, J.W. Jr, Schaff, H.V., Gayari, M.M., Ilstrup, D.M. and Melton, L.J. 3rd (1998) 'Improved prognosis of thoracic aortic aneurysms: a population-based study', *JAMA*, 280(22), pp. 1926–1929. doi:10.1001/jama.280.22.1926.

Doctors for COVID Ethics (2023) *"It's Human Responsibility" – In Memory of Prof. Dr. Arne Burkhardt*. Available at: https://doctors4covidethics.org/its-human-responsibility-in-memory-of-prof-dr-arne-burkhardt/

FCDC v. CDC (2024) *Freedom Coalition of Doctors for Choice v. Centers for Disease Control and Prevention*, No. 2:23-CV-102-Z, Memorandum Opinion and Order, ECF No. 40 (N.D. Tex., Amarillo Div., 5 January 2024).

FDA (U.S. Food and Drug Administration) (2001) *Guidance for Industry: Postmarketing Safety Reporting for Human Drug and Biological Products Including Vaccines* [draft guidance]. Available at: https://www.fda.gov/media/72504/download

Gee, J., Marquez, P., Su, J., et al. (2021) 'First month of COVID-19 vaccine safety monitoring — United States, December 14, 2020–January 13, 2021', *MMWR Morbidity and Mortality Weekly Report*, 70(8), pp. 283–288. Available at: https://www.cdc.gov/mmwr/volumes/70/wr/mm7008e3.htm

Grüntzig, A. (1978) 'Transluminal dilatation of coronary-artery stenosis', *The Lancet*, 1(8058), p. 263. doi:10.1016/S0140-6736(78)90500-7.

ICAN (Informed Consent Action Network) (n.d.) 'V-Safe Data'. Available at: https://icandecide.org/v-safe-data/

Kottenstette, N. (2026a) *V-safe Technical Report 1 – An Underreporting Factor (URF) of 16* [X Article]. Published 11 October 2026; revised October 2026. Available at: https://x.com/NickKottenstet1/status/2109280153373217216

Kottenstette, N. (2026b) *V-safe Technical Report 1: aortic aneurysm case file* [spreadsheet]. Available at: https://docs.google.com/spreadsheets/d/18uirXLm1K3M77jeH_mvdEQueVHcE51T_v6T_Lf3xc3I

MathWorks (n.d.) *Telemedicine Enables First Robotic Long-Distance Heart Surgery* [customer story]. The MathWorks, Inc. Available at: https://www.mathworks.com/company/mathworks-stories/long-distance-robotic-surgery-telemedicine.html

MathWorks (2020) *Corindus Develops Real-Time System for Telerobotic Coronary Intervention* [video, 3:11], featuring Nicholas Kottenstette, published 21 July 2020. Available at: https://www.mathworks.com/videos/corindus-develops-real-time-system-for-telerobotic-coronary-intervention-1595414841951.html

MWGFD (2023a) *Nachruf auf Prof. Dr. Arne Burkhardt und Ehrung seines Lebenswerkes*. MWGFD, June 2023. Available at: https://www.mwgfd.org/2023/06/nachruf-auf-prof-dr-arne-burkhardt-und-ehrung-seines-lebenswerkes/

MWGFD (2023b) *Sucharit Bhakdi: Gedanken zum Tod von Arne Burkhardt und Vorstellung seines neuen Buchs* [video]. MWGFD, 15 June 2023. Available at: https://www.mwgfd.org/2023/06/sucharit-bhakdi-gedanken-zum-tod-von-arne-burkhardt-und-vorstellung-seines-neuen-buchs/

National Childhood Vaccine Injury Act of 1986, 42 U.S.C. § 300aa-25. Recording and reporting of information. Available at: https://www.law.cornell.edu/uscode/text/42/300aa-25

Staatskanzlei Rheinland-Pfalz (2006) 'Verleihung des Verdienstordens des Landes Rheinland-Pfalz – Bekanntmachung der Staatskanzlei vom 9. Dezember 2005' [Award of the Order of Merit of the State of Rhineland-Palatinate – notice of the State Chancellery of 9 December 2005]. *Staatsanzeiger für Rheinland-Pfalz*, Nr. 1, 16 January 2006, p. 2. Available at: https://staatsanzeiger.rlp.de/fileadmin/staatsanzeiger/2006/StAnz01.pdf

Universität Mainz (2002) *Mainzer Universitätsprofessor Sucharit Bhakdi wird mit dem Aronson-Preis 2001 ausgezeichnet* [press release]. Informationsdienst Wissenschaft (idw), 29 November 2002. Available at: https://idw-online.de/en/news56598

VAERS (Vaccine Adverse Event Reporting System) (2026) 'Frequently asked questions'. Available at: https://vaers.hhs.gov/faq.html (Accessed: 30 October 2026).