

ENCIERRO RESEARCH REPORT NO. 1 · INJURY OUTCOMES

How dangerous is the running of the bulls in Pamplona? What the public records show and what they cannot

Injury outcomes recorded at the San Fermín encierros in Pamplona, Spain, 2013 to 2026, which do not indicate future outcomes

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ABOUT THIS REPORT

This report examines the publicly available records of injury outcomes from the encierros, the running of the bulls held each July during the San Fermín festival in Pamplona, Spain. It brings together in one place the counts published by the regional Health Department, the city of Pamplona, first-aid organisations, news agencies and peer-reviewed research, and for each one it states how it was counted, how far it can be relied on and what it leaves out. We found no comparable consolidated analysis published elsewhere.

It is a review of existing records, not a new study. No data were collected for it. The figures describe what was recorded in past fiestas, for the event as a whole. They are not a measure of how dangerous the run will be in any future year, nor of any individual's chance of injury, and they should not be read as either.

The report was directed and written by Dennis Clancey, founder of Encierro (encierro.com). Research on methods, the categorisation of sources and the general format were assisted by an AI system (Claude, developed by Anthropic). The AI system also ran literature searches, retrieved sources and ran the calculations, all checked by the author; every source, figure and statement was reviewed by the author. Encierro exists to educate people about the encierro and offers walking tours of the route. The report received no external funding, and no organisation named in it reviewed or approved it before publication. It has not been externally reviewed; instead, every source is given in full in the notes, so that each figure can be checked by any reader.

Every figure is cited, with its full source, its web address and a note explaining how it was counted and what limits it carries. We hope the report, and the categorised sources behind it, will be useful to others researching the encierro and will contribute to an informed discussion of its outcomes. It will be updated as new information becomes available, and at least once a year after each fiesta.

1. Summary and key findings

This report reviews the public records of injury outcomes from the encierros of the San Fermín festival in Pamplona, Spain, from 2013 to 2026: counts published by the regional Health Department, the city, first-aid organisations, news agencies and peer-reviewed research. From 2013 to 2017, about 2.9 in every 1,000 run-starts (one person on the route for one morning's run) ended with a transfer to the hospital complex, and about 2.8 in 2018 and 2019 under a revised runner count; horn wounds averaged about six a fiesta from 2013 to 2026. On the Health Department's basis, injury counts varied between years far more than chance explains. The records cannot give any person's chance of injury, cannot show whether beginners are hurt more often, and do not forecast future runs. Every figure is cited, with a note on how it was counted and how far it can be relied on.

KEY POINTS

1. From 2013 to 2017, about 2.9 of every 1,000 run-starts (one person on the route for one morning's run; per run-start, not any one person's chance), or about 1 in 350, ended with the runner taken to the hospital complex; in 2018 and 2019, under a revised runner count, the figure was about 2.8 per 1,000, or about 1 in 360. Yearly figures from 2013 to 2022 ranged from about 2 to 4 per 1,000; no clear trend was found, although a modest rise cannot be ruled out (probable; low to moderate certainty).
2. Horn wounds averaged about six a fiesta from 2013 to 2026, with single years ranging from two to twelve; per run-start, that was about 1 horn wound for every 2,000 run-starts from 2013 to 2017 and about 1 in 3,000 from 2018 to 2023 under the revised runner count (probable; low to moderate certainty).
3. On the Health Department's basis, injury counts differed between years far more than chance explains, so no single year stands for a typical one; runners taken to the hospital complex varied less, and horn-wound counts were consistent with chance (probable; moderate certainty).
4. Between 43 and 65 percent of runners interviewed by the city each year from 2013 to 2019 were first-timers; no public source we found shows whether first-timers are hurt more often (unknown).
5. We did not find a city runner count for 2024 to 2026 when this analysis was carried out (a 2024 newspaper report said the city had stopped counting), so this report gives no injury rate for those years.
6. We found no evaluation of the effect on injuries of any measure taken to protect runners, including the anti-slip street surface.

WHAT THE RECORDS CANNOT TELL YOU

- Any one person's chance of being hurt.
- What a future run will look like.
- Whether beginners face more risk than experienced runners.

2. The question

"How dangerous is the running of the bulls?" cannot be answered as asked, because "dangerous" has no single measure. This report asks a narrower question that the public record can address: **what harm has been counted in past encierros, by whom, how often relative to the number of people on the route, and how sure can anyone be of those figures?**¹

2.1 What counts as harm

Harm in the encierro is recorded at several levels, from a cleaned graze to a death. Each level is counted by a different body, in a different way.²

¹ Encierro's method document, section 2 ("define before you count"). Comment: every figure in this report answers a defined question of the form "how many [outcome] were recorded by [body] per [denominator] in [year]". Questions that the record cannot answer are listed in section 7.

² Comment: the ladder follows the logic of the International Olympic Committee consensus on recording sports injuries, which asks for an explicit case definition at each level of consequence: Bahr R, Clarsen B, Derman W, et al., "International Olympic Committee consensus statement: methods for recording and reporting of epidemiological data on injury and illness in sport 2020", British Journal of Sports Medicine 2020;54(7):372 to 389, <https://doi.org/10.1136/bjsports-2019-101969> (confirmed against Crossref; read in summary). The encierro record has no time-loss or follow-up data, so levels beyond "admitted" are incomplete.

LEVEL	WHAT IT MEANS	WHO COUNTS IT
1. Attended on site	Any care from a first-aid team on the route, most of it minor	Cruz Roja, DYA ³
2. Seen by the health service	Injured in the encierro and seen at the hospital or by the out-of-hospital emergency service	Gobierno de Navarra Department of Health ⁴
3. Taken to hospital	Runners taken to the hospital complex	Daily bulletins, tallied by news agencies ⁵
4. Admitted	Kept in hospital	Department of Health, when it says ⁶

³ Europa Press, published in Diario de Navarra, "Cruz Roja ha atendido a un total de 1.499 personas en los Sanfermines 2026", 15 July 2026, <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/15/cruz-roja-atendido-total-1-499-personas-sanfermines-2026-828444-55.html>, accessed 3 October 2026. Read in full. Reported figure (each organisation's balance as reported). Comment: Cruz Roja Navarra: 1,499 people attended across the fiesta; in the encierros, 359 attentions and 41 transfers for emergency care, plus 166 people hurt at the vaquillas in the bullring after the run (a separate event, not counted in this report). DYA Navarra: 867 people attended from 6 to 14 July, 243 needing hospital transfer, of whom 79 were runners in the encierros; 79 is therefore runners attended, not runners transferred. For 2024, Diario de Navarra's end-of-fiesta analysis gives 32 people transferred to the hospital, the San Martín centre or the bullring infirmary, plus 245 wound treatments and 30 medical attentions by Cruz Roja (note 137). The organisations' own releases were not opened.

⁴ Explanation of the Health Department basis, from the 2024 and 2026 balances (notes 105 and 7) and the 2025 note (106). Reported figure. Comment: the Department reports, at a press conference after the last run, the people injured in the encierros who were attended at the Hospital Universitario de Navarra (HUN) and at the Servicio de Urgencias Extrahospitalarias (SUE, the out-of-hospital emergency service). We found no published case definition (gap G1, section 8): it is not known, for example, whether a runner seen at both services is counted once or twice, whether spectators hurt by the herd are included, or whether people attended at the bullring infirmary and sent home are counted. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin.

⁵ Explanation of the hospital-complex series, from notes 20, 121 and 122. Reported figure. Comment: the Complejo Hospitalario de Navarra (renamed Hospital Universitario de Navarra in 2020; the complex is the same) received runners from the route. News agencies (EFE, Europa Press) tallied the runners taken there from the Health Department's daily bulletins. The tally excludes people treated at the San Martín centre or on the route. It is a count of people who needed hospital care, not of everyone hurt. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin.

⁶ Comment on "admitted". The figures are given at the end-of-fiesta press conference or in the daily reports, so a runner admitted days later, or transferred to a hospital elsewhere, may not be included. Admission is a better marker of serious injury than attendance, but it depends on clinical decisions and bed availability as well as on injury.

LEVEL	WHAT IT MEANS	WHO COUNTS IT
5. Intensive care	Admitted to intensive care	Department of Health, occasionally ⁷
6. Horn wound	Wounded by a bull's horn	Department of Health, city, Cruz Roja, press ⁸
7. Death	Died as a result of the encierro	City of Pamplona ⁹

Each level is a different quantity. A year with many people attended on site may have few admitted; a fall of the counted injured may reflect a change in how cases were classified. This report keeps each level, and each counting body, separate.¹⁰

2.2 The unit: the run-start

To compare years with different crowds, a count must be divided by the number of people exposed. The only such number we found is the city's count of people on the route before each run, added

⁷ EFE, published in Diario de Navarra, "Los Sanfermines 2026 dejan 'positivo balance' del dispositivo y atenciones sanitarias", 15 July 2026, <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/15/sanfermines-2026-dejan-positivo-balance-dispositivo-atenciones-sanitarias-828447-55.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: report of the press conference given by the Health Minister (Consejero de Salud) with the HUN manager and the SUE deputy director. Encierro injured 71, made up of 60 at HUN (54 trauma, 6 horn wounds) and 11 at SUE. From the encierros, 9 admitted and 1 under observation; of the 9, 1 discharged, 2 in intensive care, 5 on a ward, 1 transferred elsewhere. Corroboration of 71: elDiario.es Navarra, 15 July 2026, https://www.eldiario.es/1_cc2fc1 (Read in summary only). An earlier preliminary government figure of 57 injured and 4 horn wounds (Euronews, citing AFP and the regional government, 14 July 2026, <https://es.euronews.com/my-europe/2026/07/14/casi-60-personas-corneadas-o-contusionadas-en-los-encierros-de-san-fermin-en-espana>, Read in summary only) was superseded by the final balance.

⁸ Our list of conflicts. Our calculation or reading. 2016: 12 (Diario de Navarra, Associated Press) against 14 implied by EFE; 12 used. 2019: 8 official against 9 in the press count (one runner refused care); 8 used. 2023: 3 (Health Department, city) against 2 (Diario de Navarra 2024 analysis); 3 used. 2024: 2 (Health Department, Diario de Navarra) against 4 (Associated Press); 2 used. Comment: we found no published official definition of a horn wound (gap G16, section 8): a graze from a steer was counted in 2024, a graze whose victim refused care was not counted in 2019, and it is unknown whether bruising from a horn without a penetrating wound is included. The choices change no conclusion in this section.

⁹ Ayuntamiento de Pamplona, "Pamplona recordará a los 16 fallecidos en la historia del encierro con adoquines conmemorativos colocados en el punto del recorrido donde resultaron heridos", 27 December 2023, <https://www.pamplona.es/actualidad/noticias/pamplona-recordara-los-16-fallecidos-en-la-historia-del-encierro-con-adoquines>, accessed 4 October 2026. Read in full. Measured figure. Comment: the city lists 16 people who died in the encierro, with name, home town, age and date, from Francisco García Gurrea of Falces (21), gored on 7 July 1910 at the gates of the old bullring and died on 21 January 1911, to Daniel Jimeno Romero of Alcalá de Henares (27), caught at the Telefónica stretch on 10 July 2009. It places an engraved paving stone where each was caught. By period (our count from the list): 1910 to 1979, eleven (1910, 1924, 1927, 1935, two in 1947, 1961, 1969, 1974, 1975, 1977); 1980 to 2009, five (two in 1980, 1995, 2003, 2009). Home towns: six Pamplona, six elsewhere in Navarra (Falces, Sangüesa, Villava, Murchante, Arazuri, Cintruénigo), Badajoz, Alcalá de Henares, San Luis Potosí (Mexico) and Illinois (United States). Ages 17 to 63. The city does not state its criteria for inclusion. Names are given in this report only as the city itself publishes and commemorates them.

¹⁰ Encierro's method document (version 1.2, 3 October 2026, available on request from apua@encierro.com), section 4.1. Our classification. Comment: the five bases are (1) Health Department injured, hospital plus out-of-hospital service (HUN plus SUE); (2) runners taken to the hospital complex (CHN), reported by news agencies from the daily bulletins; (3) Cruz Roja attentions on the route, most of them minor wound care; (4) DYA attentions; (5) running tallies in the daily press, which mix several of these and are revised. In 2022, for example, the Health Department basis gave 92 and the hospital-complex basis 52 for the same fiesta (notes 102 and 123). A count on one basis can never be compared with a count on another as if they measured the same thing.

over the eight runs of a fiesta. We call one person on the route before one run a **run-start**. Someone who runs on four mornings is four run-starts.¹¹ A rate per run-start describes the event: how many times harm was recorded for every thousand times someone stood on the route. It is not the chance that harm will come to any particular person, for three reasons: the number of different people who ran is unknown; the people on the route differ greatly in where they run, how close they get to the bulls, how often they run and how fit, rested and sober they are; and the counts have no information on any of that.¹²

2.3 For whom, and compared with what

The figures cover everyone on the route together: first-timers and veterans, locals and visitors, people who run beside the horns and people who leave the street before the bulls arrive.¹³ The report makes no comparison with other activities or events. A fair comparison would need the same kind of event, counted the same way, over the same period, with the same treatment of uncertainty, and none was found.¹⁴

2.4 What this report does not try to do

- It does not estimate any person's chance of injury or death.
- It does not forecast any future run.
- It gives no verdict on the run's danger, and does not rank it against any other activity.
- It does not say whether first-timers are hurt more often than experienced runners, because no public source we found records it.¹⁵
- It does not judge whether any safety measure has worked, because we found no evaluation.¹⁶
- It does not give advice to runners.

¹¹ Definition, Encierro's method document, section 6.2. Comment: the city counted people standing on the route minutes before each run, on each of the eight mornings, and added the eight counts. A run-start is therefore one person on one morning, not one person over the fiesta. The number of different people who ran in a year is unknown; it is smaller than the run-start total by an unknown amount, because many people run on more than one morning. This is why no rate in this report is a chance per person.

¹² Encierro's method document, section 2.2, 2.3 and 5.6. Comment: an average over everyone on the route hides very different exposures. The city's surveys show where runners said they ran (roughly even across four stretches, for example 25, 28, 24 and 23 percent in 2019: note 92), but nothing on how close they came to the herd. The expert-judgment study (note 26) rated present condition (sleep, alcohol, drugs), experience, knowledge of the rules and fitness as the factors experts thought mattered most; those are opinions, not measured risks.

¹³ Encierro's method document, section 2.3. Comment: the city's count includes everyone in the counted zones minutes before the rocket, whatever they then did. It also counts people on the route who may leave before the bulls pass. No source separates those who ran near the bulls from those who did not.

¹⁴ Comment: a fair comparison needs the same kind of harm, counted the same way, over the same period, per the same unit of exposure. Hospital series from other Spanish bull events count patients, not participants, and other mass-participation events count people rather than run-starts and different causes of harm. None meets the test.

¹⁵ Encierro's method document, section 5.6. Comment: applying a survey share to injury counts would assume that first-timers and experienced runners are hurt at the same rate, which is the very question. The surveys count runners interviewed; the injury counts come from hospitals; the two cannot be linked.

¹⁶ Encierro's method document, section 5.3. Comment: measures introduced over the years include an anti-slip treatment of the street surface (trial 2005, standard from 2006), a double fence, the 2014 ordinance with fines, and the 2026 access changes. No evaluation of their effect on injuries was found, and before-and-after counts cannot show one: there is no comparison group, the counts changed definition, and crowds, bulls and weather change at the same time. Sources for the measures: section 10.

3. What was counted, and by whom

We found no body that publishes a complete, defined record of injuries in the Pamplona encierro. The figures in this report come from four kinds of source: the bodies that count (the regional Health Department, the city and its police, the first-aid organisations), the news agencies and newspapers that relay those counts, peer-reviewed research, and a handful of second-hand figures we traced and set aside.¹⁷ This section lists each source, says how it was found, defines what each one counts, and states what we could not open.

3.1 Sources at a glance

SOURCE	WHO COUNTS	WHAT IS COUNTED	HOW WE READ IT	YEARS	USED FOR
End-of-fiesta health balance	Gobierno de Navarra, Department of Health	People injured in the encierros seen at the hospital (HUN) and the out-of-hospital service (SUE); horn wounds; admissions	Press reports of the press conference; the Department's own note could not be opened ¹⁸	2019, 2022 to 2026	Section 5.1, 5.3, 5.4
Daily medical bulletins	Department of Health and the hospital	Each injured person: age, origin, injury, prognosis, place on the route	Newspaper reproductions; names never recorded ¹⁹	2017, 2026 in full; others in part	Sections 5.2, 5.5

¹⁷ Our classification of the sources in this report, following Encierro's method document, section 3.2 and 3.3 (classes M, R, D, C and the publication rule by grade). Our calculation or reading. Comment: "established news organisation" here means a national news agency (EFE, Europa Press, Agence France-Presse, Associated Press) or a regional or national newspaper with its own newsroom (Diario de Navarra, Noticias de Navarra, elDiario.es and similar) reporting an official body's figures. Commentary sites, commercial fiesta guides and unsourced aggregators are never used as data.

¹⁸ Health Department figures used in this report: notes 102 (2019 and 2022), 104 (2023), 105 (2024), 106 (2025), 7 (2026). The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin.

¹⁹ Diario de Navarra, daily "Heridos y parte médico" articles for the eight runs of 2026: run 1 (7 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/07/heridos-parte-medico-primer-encierro-san-fermin-2026-cuatro-heridos-tres-traslados-traumatismos-827375-55.html>; run 2 (8 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/08/heridos-parte-medico-segundo-encierro-san-fermin-2026-primer-corneado-827505-55.html>; run 3 (9 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/09/heridos-parte-medico-tercer-encierro-san-fermin-2026-herido-asta-toro-telefonica-827655-56.html>; run 4 (10 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/10/heridos-parte-medico-cuarto-encierro-san-fermin-2026-827791-55.html>; run 5 (11 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/11/heridos-parte-medico-quinto-encierro-san-fermin-2026-cornada-cara-mercaderes-827916-56.html>; run 6 (12 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/12/heridos-parte-medico-sexto-encierro-san-fermin-2026-herido-asta-toro-plaza-toros-828034-56.html>; run 7 (13 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/13/heridos-parte-medico-septimo-encierro-san-fermin-2026-828162-55.html>; run 8 (14 July), <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/14/heridos-parte-medico-septimo-encierro-san-fermin-2026-dos-heridos-asta-toro-828296-56.html>; read in full 3 October 2026, addresses confirmed 4 October 2026. Reported figure (hospital bulletins and Cruz Roja balances as relayed). The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: the reports list each injured person's age, origin, injury, prognosis and place on the route. Names and initials appear in them and are not reproduced in this report. The address for the run of 14 July carries the word "septimo" in the newspaper's own URL; its content is the eighth run's report

SOURCE	WHO COUNTS	WHAT IS COUNTED	HOW WE READ IT	YEARS	USED FOR
Hospital-complex tallies	News agencies (EFE, Europa Press) from the daily bulletins	Runners taken to the hospital complex; horn wounds	Agency reports published in Diario de Navarra ²⁰	2013 to 2019 and 2022 (2022 from a single press report)	Section 5.2, 5.3

(two horn wounds).

²⁰ EFE, published in Diario de Navarra, "Los encierros de 2017 dejan menos trasladados al hospital" (The 2017 encierros leave fewer taken to hospital), 14 July 2017, <https://www.diariodenavarra.es/noticias/san-fermin/2017/07/14/encierros-2017-dejan-menos-trasladados-hospital-541651-2101.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: runners needing care at the hospital complex: 2013 50; 2014 42; 2015 37; 2016 67 (51 plus 16); 2017 51. Horn wounds in the same article: 2013 6; 2014 8; 2015 10; 2016 14 (implied by the article's "doubled"; see note 131); 2017 7. In the same year Diario de Navarra gave 64 for 2017 on a wider basis that adds the San Martín centre (note 144), which shows how much the basis matters.

SOURCE	WHO COUNTS	WHAT IS COUNTED	HOW WE READ IT	YEARS	USED FOR
Runner counts	Ayuntamiento de Pamplona and Policía Municipal	People on the route minutes before each run	City releases (2019 read in full; 2022 and 2023 by exact sentences retrieved); newspaper reports of the city's figures ²¹	2012 to 2019, 2022, 2023	Section 5.0 (denominator)
Runner surveys	Ayuntamiento de Pamplona (Protección Civil)	Experience, origin, age, sex, sleep, knowledge of rules	City release (2019); newspaper reports ²²	2012 to 2019	Section 5.8
First-aid balances	Cruz Roja Navarra; DYA Navarra	People attended on the route, mostly minor wound care; transfers	Press reports of each body's balance ²³	2024, 2026	Context only (section 3.3)

²¹ Diario de Navarra, "El número de corredores en los encierros de este año se redujo un 4%" (Runner numbers in this year's encierros fell by 4 percent), 18 July 2014, https://www.diariodenavarra.es/noticias/san_fermin/san_fermin_2014/2014/07/17/baja_numero_corredores_los_encierros_este_ano_167854_2941.html, accessed 3 October 2026. Read in full. Reported figure (city figures and method as reported). Comment: the article states the counts come from photographs taken from Policía Municipal camera images along the route, minutes before the rocket. The city's own description of its method was not found; this newspaper account is the fullest description available. A city councillor later described the method, critically, as counting heads in a frozen image (note 44). The count is a snapshot: people who join the route after the image, or who are outside the counted zones, are missed, and people who leave before the bulls arrive are included.

²² The city's runner surveys, 2012 to 2019, as reported in notes 172, 173, 174, 175, 176, 177 and 178; the method is described in Europa Press via Diario de Navarra, "El 60% de los que corrieron los encierros era extranjero", 17 July 2012, https://www.diariodenavarra.es/noticias/san_fermin/2012/07/17/el_los_que_corrieron_los_encierros_eran_extranjeros_86526_2101.html, accessed 3 October 2026, Read in full. Reported figure. Comment: the 2012 article says the interviews were done at random by the city's Protección Civil auxiliaries with runners warming up or waiting on the route, to adapt safety messages. We found no questionnaire, sampling plan, response rate or weighting published for any year (Encierro's method document, section 3.5). We found no survey after 2019.

²³ See note 3.

SOURCE	WHO COUNTS	WHAT IS COUNTED	HOW WE READ IT	YEARS	USED FOR
List of deaths	Ayuntamiento de Pamplona	Deaths in the history of the encierro	The city's own list, read in full ²⁴	1910 to 2009	Section 5.6
Peer-reviewed research	Universities	Movement and falls (video study); expert ratings of risk factors	Full texts ^{25,26}	2019; 2006 to 2008	Sections 5.7, 10

3.2 How the sources were found and chosen

Sources were gathered between 29 September and 3 October 2026 in four ways: searches of news archives, chiefly Diario de Navarra and Noticias de Navarra, for each fiesta's end-of-fiesta reports; reading of the city's and the regional government's press pages where they could be opened; searches of the medical and scientific literature; and follow-up of every figure repeated online back to its origin.²⁷

The literature search found little. A search of PubMed for the encierro and Pamplona returned three items, and a broader search of Europe PMC returned no epidemiological series of encierro injuries.²⁸ Two databases of Spanish and Latin American research were searched on 4 October 2026: SciELO returned nothing on the encierro, and Dialnet returned no medical series of encierro injuries but listed

²⁴ See note 9.

²⁵ Parisi DR, Sartorio AG, Colonnello JR, Garcimartín A, Pugnali LA, Zuriguel I, "Pedestrian dynamics at the running of the bulls evidence an inaccessible region in the fundamental diagram", Proceedings of the National Academy of Sciences of the United States of America 2021;118(50):e2107827118, <https://doi.org/10.1073/pnas.2107827118>, full text at <https://pmc.ncbi.nlm.nih.gov/articles/PMC8685666/>, accessed 3 October 2026. Read in full. Measured (peer-reviewed). Comment: two recordings from about 15 metres above Calle Estafeta at two points, on 8 and 9 July 2019. Funded by Argentine, Spanish and international science grants; the authors declare no competing interest; the University of Navarra's research ethics committee raised no objection. The paper's figures are not reproduced here: it is published under the exclusive PNAS License to Publish, and commercial reuse of its figures needs PNAS permission.

²⁶ Mallor F, García-Olaverri C, Gómez-Elvira S, Mateo-Collazas P, "Expert judgment-based risk assessment using statistical scenario analysis: a case study, running the bulls in Pamplona (Spain)", Risk Analysis 2008;28(4):1003 to 1019, <https://doi.org/10.1111/j.1539-6924.2008.01098.x>, abstract at <https://pubmed.ncbi.nlm.nih.gov/18662300/>, accessed 3 October 2026. Read in full (the 17 printed pages, read from page images of the published article). Measured (method only; no injury figures used). Comment: researchers at the Universidad Pública de Navarra built a 0 to 10 risk rating for a runner from the judgments of 55 experts (52 usable) on 64 scenarios combining nine factors. It is an index of expert opinion, not a measured probability. The authors state that the historical records they had covered only injured people, with nothing on the runners who were not hurt, which is why they turned to experts. The study was proposed and financed by a private company, which owned the resulting tool; that commercial link is disclosed here. Its background figures for 1980 to 2006 come from web sources, not official bulletins, and are not used.

²⁷ Encierro's research notes for this report, 29 September to 4 October 2026, available on request from aupa@encierro.com. Our calculation or reading. Comment: news archives were searched by year with Diario de Navarra's site search, using the end-of-fiesta dates; the articles read were open to all readers, not paywalled. Each source's reading label is given in its note.

²⁸ Our searches, 3 October 2026. PubMed (<https://pubmed.ncbi.nlm.nih.gov/>), query: (encierro OR "running of the bulls" OR "bull run" OR "bull-running") AND Pamplona: three results (the 2021 video-tracking paper, note 25; a 2017 Veterinary Record news item on opposition to the run; the 2008 expert-judgment study, note 26). Europe PMC (<https://europepmc.org/>), queries "encierro Pamplona" (3 hits), "running of the bulls" (17), "bull running" (7), "San Fermin AND injur*" (9), "encierros AND Pamplona" (1): after filtering, a 2011 neurosurgery review of bull-goring injuries in bullfights and the run (not an encierro series), a 2015 case report, and the items above. Google Scholar searches returned further context items, none an injury series. Our calculation or reading. Comment: negative result, recorded so that a reader can repeat it: no published epidemiological series of encierro injuries was found in these databases.

a 2006 university compilation of basic data on the encierros from 1980 to 2005, which we have not read (gap G5).²⁹

A source was used as data when it came from the body that made the count, or from an established news organisation relaying that body's figures, or from a peer-reviewed paper, and when we had read it in full or, where a page would not load in a browser, when its exact sentences had been retrieved and quoted (the notes say which).³⁰ Figures seen only in a summary or a search snippet were used to guide the search and are not used as data.

3.3 What each count means

The word "injured" in Pamplona's public record covers at least five different counts.³¹

- **Health Department injured (hospital plus out-of-hospital service).** People hurt in the encierro who were seen at the Hospital Universitario de Navarra or by the out-of-hospital emergency service. We found no published definition.³²
- **Taken to the hospital complex.** Runners who needed care at the hospital complex, tallied by news agencies from the daily bulletins. It excludes people treated at the San Martín centre or on the route.³³
- **Cruz Roja attentions.** Everyone the Red Cross attended on the route, most of them for minor wound care. In 2026 Cruz Roja recorded 359 attentions in the encierros and 41 transfers for emergency care, against the Health Department's 71 injured.³⁴
- **DYA attentions.** The DYA ambulance service attended 79 runners in the 2026 encierros; this is a count of people attended, not of people taken to hospital.³⁵
- **Daily press tallies.** Running counts in the morning reports, which mix people taken to hospital, people attended at the bullring and first reports later corrected. In 2026 they added to about 77 against the final 71.³⁶

²⁹ Our searches, 4 October 2026, in a browser. SciELO (<https://search.scielo.org/>): "encierro pamplona" and "pamplona encierro", 0 results; "running of the bulls", 2; "asta de toro", 5; "bull goring", 3; "san fermin", 22; none an encierro injury series (the horn-wound items are case reports or series from other events). Dialnet (<https://dialnet.unirioja.es/>): "encierro pamplona", 41 documents; "encierro heridos", 204; "heridas por asta toro", 38; "corredores encierro", 10; "encierros San Fermín", 15; "sanfermines heridos", 3; "San Fermín lesiones", 7. No medical series of encierro injuries was listed. One item may hold earlier data: García Olaverri C, Gómez Elvira S, Mallor Giménez F, Mateo Collazos PM, Encierros de San Fermín 1980-2005: datos básicos (Universidad Pública de Navarra, 2006), <https://dialnet.unirioja.es/servlet/libro?codigo=777606>, listed only; a print book we have not read (gap G5, section 8). Two of its authors also wrote the 2008 expert-judgment study (note 26). Earlier attempts on 3 October 2026 failed (Dialnet refused the browser extension; SciELO showed a security check). One further article indexed in Dialnet was read in full from the published PDF: Álvarez Caperochipi, "Operativo sanitario de encierros y corridas: la enfermería de la plaza", *Pregón Siglo XXI* no. 56 (2020), pp. 113 to 117; its figures have no stated time window and are used as context only (section 10). Our calculation or reading.

³⁰ Encierro's method document, section 3.2 (reading labels) and 3.3 (grades, and the rule for using a figure by grade). Comment: a figure seen only in a summary or snippet is not used as data. Where a page would not load in a browser, its exact sentences were retrieved with a retrieval tool and quoted in the note; those figures are marked in their notes and in table 8.1. Several figures that could not be confirmed either way were dropped from this version.

³¹ See note 10.

³² See note 4.

³³ See note 5.

³⁴ See note 3.

³⁵ See note 3.

These counts overlap: the same runner may be attended by the Red Cross, carried by a DYA ambulance and treated at the hospital. They cannot be added, and a count on one basis cannot be compared with a count on another.³⁷

Three other terms recur:

- **Horn wound** (herida por asta, cornada): a wound caused by a bull's horn. We found no published official definition, and sources have counted grazes and steer injuries differently.³⁸
- **Admitted**: kept in hospital, as reported on the day.³⁹
- **Run-start**: one person standing on the route before one run, the unit of the city's count.⁴⁰

3.4 The runner count

The city's runner count came from Policía Municipal camera images taken minutes before the rocket on each morning; the counted figures for the eight mornings were added together.⁴¹ Three features matter for every rate in this report. The count is a snapshot, so it misses people who join after the image and includes people who leave before the bulls arrive.⁴² The zones counted were drawn more tightly from 2018, which lowered the counts by an unknown amount.⁴³ And we did not find a count for any year after 2023; a 2024 newspaper report said the city had stopped counting.⁴⁴ We found no

³⁶ Our sum of the eight daily headlines (note 19) against note 7. Our calculation or reading. Comment: 4 + 3 + 13 + about 10 + 15 + 11 + 8 + 13 = about 77, against the final 71. Reasons, from reading the reports: the headlines include people attended at the bullring infirmary and on the route who were not taken to a hospital, first reports were not always updated, and one report's own counts disagree (run 5 lists 7 plus 4 transfers against 10 in its text). The difference cannot be reconciled without the Department's case definition. The daily headline counts are therefore not used for any rate.

³⁷ Encierro's method document, section 4.1. Our calculation or reading. Comment: the Health Department counts people who reached the hospital or the out-of-hospital service; Cruz Roja counts every attention on the street and its transfers; DYA counts its own attentions and transfers. A runner treated by Cruz Roja, carried by DYA and seen at the hospital appears in all three. No published source links the lists, and linking person-level health records is not something this report attempts (Encierro's method document, section 5.7).

³⁸ See note 8.

³⁹ See note 6.

⁴⁰ See note 11.

⁴¹ See note 21.

⁴² Our assessment of the method described in note 21, with Watson R, Yip P, "How many were there when it mattered?", *Significance* 2011;8(3):104 to 107, <https://doi.org/10.1111/j.1740-9713.2011.00502.x> (confirmed against Crossref), on area-and-density crowd counting. Our calculation or reading. Comment: the direction of the snapshot error is not known in advance: missing late arrivals lowers the count; counting people who leave before the bulls raises it. A city councillor criticised the method in 2024 as counting heads in a frozen image (note 44); that is a political statement, not an error estimate.

⁴³ *Diario de Navarra*, "Cuatro de cada diez corredores del encierro son extranjeros" (Four in ten encierro runners are foreign), 17 July 2018, <https://www.diariodenavarra.es/noticias/san-fermin/2018/07/17/cuatro-cada-diez-corredores-del-encierro-son-extranjeros-601585-2101.html>, accessed 3 October 2026. Read in full. Reported figure. Comment: 2018 total 14,110 (1,764 a day), 21 percent fewer than 2017. The article reports the city's own explanation: a slight change in the counting technique, with the zones to be counted drawn more restrictively, plus stricter screening of runners by the Policía Municipal. Part of the fall is therefore method, not fewer runners, and the size of each part is unknown. Encierro's method document, section 5.4 treats 2018 as a break in the series: periods either side are reported separately.

⁴⁴ Myriam Munárriz, "Geroa Bai advierte sobre el futuro de las corridas de toros de San Fermín", *Diario de Navarra*, 25 September 2024, <https://www.diariodenavarra.es/noticias/navarra/pamplona-comarca/2024/09/24/geroa-bai-advierte-sobre-el-futuro-corridas-toros-san-fermin-623040-1002.html>, accessed 3 October 2026. Read in full. Reported figure (statements by city councillors as reported). Comment: reports that a motion in the city's Presidencia committee on 24 September 2024 asking the city to resume counting runners and surveying their origin did not pass, and that no count or survey had been made since the change of city government. The city's head of public safety was reported as saying the analyses were not done for lack of tools and that a runner's origin is not relevant to public safety. These are political statements, quoted as such.

estimate of the count's error from the city; this report assumes it could be up to 15 percent either way and shows the effect.⁴⁵

3.5 The runner surveys

From 2012 to 2019 the city's Protección Civil auxiliaries interviewed runners on the route over the eight mornings, between 517 and 771 a year from 2013 to 2019.⁴⁶ The table shows what the city disclosed about the surveys, measured against the disclosure elements of the American Association for Public Opinion Research's Transparency Initiative.⁴⁷

DISCLOSURE ELEMENT	FOUND PUBLISHED?
Who sponsored and conducted it	Yes: the Ayuntamiento, through Protección Civil auxiliaries ⁴⁸
Exact questions	Not found
Population and sampling frame	Partly: runners warming up or waiting on the route
How respondents were selected	Stated as "at random" in 2012; not described in other years
Dates and mode	Yes in general terms: face to face, over the eight mornings
Sample size	Yes, each year
Response rate	Not found
Weighting	Not found
Precision or margin of error	Not found

Because we did not find most of this published, the survey figures in section 5.8 are shown with ranges that assume a random sample, and the report says that the assumption cannot be checked.⁴⁹

Consequence for this report: we did not find an official runner count for 2024, 2025 or 2026 when this analysis was carried out (4 October 2026), consistent with this report of the city having stopped counting. If such counts exist, they would allow rates for those years in a later version.

⁴⁵ Encierro's method document, section 5A.8 (three-sentence pattern) and 5A.1 (three layers of uncertainty: statistical, systematic, time). Comment: "statistical range" is the exact 95 percent Poisson interval for the count. "Range allowing for counting error" widens that by assuming the city's runner count could be up to 15 percent too high or too low; the 15 percent is our judgement, wider than the roughly 10 percent error described as achievable for image-based crowd counts in good conditions (Watson R, Yip P, "How many were there when it mattered?", Significance 2011;8(3):104 to 107, <https://doi.org/10.1111/j.1740-9713.2011.00502.x> (confirmed against Crossref)). Injuries that never reached a counted service would push every rate up; that effect is not measured and is not included in the ranges.

⁴⁶ See note 22.

⁴⁷ American Association for Public Opinion Research, Transparency Initiative, <https://aapor.org/standards-and-ethics/transparency-initiative/>, accessed 4 October 2026 (page listed; disclosure elements recorded in Encierro's method document, section 3.5). Comment: the Transparency Initiative lists what a survey producer should disclose so others can judge it. The city was not bound by it; it is used here as a yardstick. The table is our reading of everything the city and the press published about the surveys from 2012 to 2019.

⁴⁸ See note 22.

⁴⁹ Our arithmetic (Wilson 95 percent intervals). Our calculation or reading. Comment: the ranges assume each year's interviews were a simple random sample of run-starts. If the design clustered interviews (by day or place), true ranges would be wider. We did not find the design published (gap G3, section 8).

3.6 The list of deaths

The Ayuntamiento publishes a list of the 16 people who have died in the history of the encierro, from 1910 to 2009, and has commemorated each with an engraved paving stone at the point on the route where they were caught.⁵⁰ The list includes deaths that came weeks or months after the run, such as those in 1910 and 2003. The city does not state its criteria for inclusion. Section 5.6 summarises the list.

3.7 What we set aside, and why

Several figures circulate widely but could not be traced to a body that counted them or to a documented method. Under this report's rules they are not used as data.⁵¹

- A set of odds for minor injury, serious injury, goring and death, repeated on commercial fiesta guides, with no source or method.⁵²
- The claim that "two in three" runners are first-timers, which traces to the city's 2014 survey (65 percent) and is out of date: the city's later surveys show 43 to 59 percent.⁵³

3.8 What we could not open

The Gobierno de Navarra's press room on navarra.es, which would hold the Health Department's own bulletins and balances, could not be made to load at the time of reporting (3 and 4 October 2026), despite the use of several different devices. The site is presumed to have been down, and the outage is presumed to be temporary. The Policía Municipal's site returned an error.⁵⁴ Every Health Department figure in this report therefore comes from a news organisation's report of it and has not been verified against the Department's own text; that check will be made in a later version. No request for the Department's or the city's tables had been made when this version was published; requests, and any replies, will be reported in later versions (section 8).⁵⁵

⁵⁰ See note 9.

⁵¹ Encierro's method document, section 3.3, publication rule: a figure from a source with no traceable method or origin (grade E) is never used as data and may be described in neutral terms as an untraced claim, without naming or linking any operator. Comment: our tracing of each claim is in Encierro's research notes, available on request.

⁵² Odds of 1 in 70 for a minor injury, 1 in 800 for a serious injury, 1 in 2,500 for a goring and 1 in 100,000 for death, published without source or method on a commercial fiesta-guide website (not named or linked here under the report's rules). Untraced claim. Comment: none of these can be checked against anything in the public record.

⁵³ Diario de Navarra, 18 July 2014 (note 21): 65 percent of 739 runners interviewed were first-timers, "almost two in three". Later city surveys: notes 174, 175, 176, 177 and 178. Reported figure. Comment: the "two in three" figure is real for one year and is repeated as if current. The seven surveys from 2013 to 2019 ranged from 43 to 65 percent.

⁵⁴ Our access attempts, 3 and 4 October 2026: navarra.es press room, connection reset on several different devices, so the site is presumed to have been down at the time of reporting, and the outage presumed temporary; its rules for automated retrieval also exclude those pages. policiamunicipal.pamplona.es returned an error page. Neither was worked around. Comment: the Department's press-room titles were visible in search results for 2003 to 2026, so the bulletins very probably exist; their content is what we could not read. A later version will check the figures against them.

⁵⁵ Comment: no data requests to the Health Department, the city or the first-aid organisations had been sent when version 1.0 was published. Requests, and any replies, will be reported in later versions.

4. How the numbers were made

4.1 A plan written before the analysis

The rules for this report were written down before the main analysis, in an internal method document, available on request from aupa@encierro.com. It says what counts as harm, how sources are graded, which calculations will be run and which will not, and what words may be used.⁵⁶ Writing the plan first is meant to stop the analysis from being bent toward a conclusion. Some of it was not written first, and we say which: three analyses (the hospital-complex series, the horn-wound series and admissions) were run as pilots while the plan was being completed, and the remaining analyses were run afterwards on the final data.⁵⁷ One rule was changed after the pilots: the plan first banned combining years either side of the 2018 change in runner counting; the revised rule reports the two periods separately and first, and allows a combined figure only as a labelled check. Every departure from the plan is recorded, with a reason, in the method document's change log.⁵⁸

The plan was not registered on a public registry for this first version.⁵⁹

4.2 How each source was graded

For every figure we recorded who measured it, who published it, how it was collected, what it includes, what it was divided by, where we read it, and what limits it has.⁶⁰ Each figure's note states two labels.

- **How fully we read it:** read in full; exact sentences retrieved (the page would not load in a browser, so its exact sentences were retrieved with a retrieval tool and quoted, without the page itself being viewed); or read in summary only. Figures seen only in a summary or snippet are not used as data.⁶¹
- **What kind of statement it is:** measured (we read the counting body's own words), reported (a news organisation's account of an official figure we could not open), derived (our own arithmetic, with the inputs shown), or claimed (no traceable origin).⁶²

We also graded each source for reliability, from A (an official body with a published method) to F (cannot be judged); each figure for credibility, from 1 (confirmed by an independent source on the

⁵⁶ Encierro, "Standard: Evidence Rubric and Analysis Strategy for Encierro Risk Data", version 1.2, 3 October 2026 (internal method document, available on request from aupa@encierro.com). Comment: sections 2 (the question), 3 (grading), 4 (bias checks by data type), 5 (methods), 5A (uncertainty), 6 (wording), 7 (phases and gates). It has not been reviewed outside Encierro.

⁵⁷ Encierro's method document, section 5.12 (the list of planned analyses). Comment: the analyses of runners taken to the hospital complex, horn wounds and admissions were run on 3 October 2026 while the plan was being finished, so they are not pre-specified in the strict sense; this paragraph discloses it.

⁵⁸ Encierro's method document, change log. Comment: example: version 1.2 replaced a blanket ban on combining years across the 2018 counting change with a rule that the two periods are primary and a combined figure is a labelled sensitivity analysis; the reason is recorded there.

⁵⁹ Comment: a registration is a frozen, time-stamped public copy of an analysis plan (Center for Open Science, OSF Registrations, <https://help.osf.io/article/330-welcome-to-registrations>, accessed 3 October 2026). Registration may be considered for later versions; if it is done, it will list the analyses that were run before it.

⁶⁰ Encierro's method document, section 3.1 (the fields recorded for each figure). Comment: the records are internal and available on request; each note in this report gives the main fields for its figure.

⁶¹ See note 30.

⁶² Encierro's method document, section 3.2 (evidence classes M, R, D, C). Comment: the class says what kind of statement a figure is, not whether it is right.

same definition) to 6 (cannot be judged); and each for its fitness for the question asked. The three grades were kept separate and guided which figures were used; they are not printed beside each figure in this version.⁶³

Most official figures in this report would be graded C for reliability: an official count relayed by the press, from a body whose definitions we did not find published.⁶⁴

4.3 How the rates were calculated

- **Rates.** Each rate is a count divided by the city's run-start count for the same year, on one basis.⁶⁵
- **Statistical range.** For each count we give the exact 95 percent interval for a count of rare events (the Garwood method). For survey percentages we give the Wilson interval.⁶⁶
- **Range allowing for counting error.** Because we found no published error estimate for the city's runner count, we repeat each calculation with the count 15 percent lower and 15 percent higher. The 15 percent is our judgement, and the true error could be larger. Tests of whether years differ do not allow for a separate counting error in each year, which could make differences between years look somewhat larger than they are.⁶⁷
- **Combining years.** Where several years share a definition, the combined rate is the total count divided by the total run-starts, shown beside the yearly figures. We do not combine different bases. Years either side of the 2018 change in runner counting are reported separately, and the separate figures lead; a combined figure across that change appears only as a labelled check.⁶⁸
- **A range for a typical past year.** Where enough years exist, we give a range that reflects how much the years differed from each other (a random-effects prediction interval). It describes the spread of past years. It is not a forecast.⁶⁹

⁶³ Encierro's method document, section 3.3, adapted by analogy from the source-evaluation convention used in intelligence analysis (often called the Admiralty or NATO system), which rates source reliability and information credibility separately. The convention is used by analogy only. Comment: separating the three judgments stops a reliable body's weak figure, or a weak source's correct figure, from being misread.

⁶⁴ Encierro's method document, section 8.1. Comment: grade C means "quality press or agency relaying an official statement or primary document we could not open". It would rise to B if the Health Department's own notes were read, and to A only if the Department published its case definitions and collection method.

⁶⁵ Encierro's method document, section 5.1 and 5.4. Comment: the numerator and the denominator come from different bodies (health service and city), counted in different ways, which is one reason every rate carries the counting-error range.

⁶⁶ Garwood F, "Fiducial limits for the Poisson distribution", *Biometrika* 1936;28(3/4):437 to 442, <https://doi.org/10.2307/2333958> ; Brown LD, Cai TT, DasGupta A, "Interval estimation for a binomial proportion", *Statistical Science* 2001;16(2):101 to 133, <https://doi.org/10.1214/ss/1009213286> . Bibliographic details confirmed against Crossref, 4 October 2026. Comment: the exact Poisson interval behaves properly at small counts (two horn wounds, for example), where simpler approximations fail. The Wilson interval assumes a simple random sample, which the city's surveys are not shown to be.

⁶⁷ See note 45.

⁶⁸ Encierro's method document, section 5.4. Comment: the older runner counts are larger, so rates for 2013 to 2017 look lower than they would on the 2018 method. Where the two periods agree (hospital-complex transfers: 2.9 and 2.8 per 1,000), the agreement is reported.

⁶⁹ DerSimonian R, Laird N, "Meta-analysis in clinical trials", *Controlled Clinical Trials* 1986;7(3):177 to 188, [https://doi.org/10.1016/0197-2456\(86\)90046-2](https://doi.org/10.1016/0197-2456(86)90046-2) (confirmed against Crossref, 4 October 2026). Comment: the random-effects method used; the prediction interval uses a t distribution on k minus 2 degrees of freedom, as implemented in the section 5 script. A prediction interval answers "where might a further year fall, given how much past years differed", and is wider than

- **Rounding.** Rates are shown to two significant figures; "1 in N" to the nearest 10 below 1,000 and the nearest 100 above.⁷⁰
- **Reproducibility.** Every derived figure comes from one script that reads the cited inputs; nothing is calculated by hand in the text. The script is available on request from aupa@encierro.com.⁷¹

4.4 Three kinds of uncertainty

Every rate in this report is uncertain in three separate ways, and most published risk figures report only the first.⁷²

1. **Chance.** A fiesta with three horn wounds could as easily have had one or seven. The statistical range covers this.
2. **What was not counted, or counted wrongly.** The runner count may be off; some injured people never reach a counted service; the case definitions were not found published. The data cannot measure these. We show their possible effect by stated assumptions, and say that those assumptions are ours.⁷³
3. **Change over time.** We see ten counted fiestas out of thirteen held since 2012, each through eight morning snapshots, and no runner count that we found after 2023. A past year describes that year. Whether it says anything about another year depends on the event staying the same, and it has not: the counting changed in 2018, there were no runs in 2020 and 2021, we found no runner counts after 2023, and the access rules changed in 2026.⁷⁴

In the counts we hold, the second and third kinds outweigh the first: the differences between years and between definitions are larger than the random error within any one year.⁷⁵ Before any figure was

the confidence interval for the average. With three years or fewer it is not computed.

⁷⁰ Encierro's method document, section 5.10. Comment: unrounded values are given in the notes where they matter.

⁷¹ Encierro's calculation script, `section5_calc.py` (Python 3 with SciPy and statsmodels), available on request from aupa@encierro.com. Comment: it reads the cited inputs and reproduces every derived figure in sections 5 and 6, including the trend and sensitivity checks.

⁷² van der Bles AM, van der Linden S, Freeman ALJ, Mitchell J, Galvao AB, Zaval L, Spiegelhalter DJ, "Communicating uncertainty about facts, numbers and science", Royal Society Open Science 2019;6(5):181870, <https://doi.org/10.1098/rsos.181870> ; Deming WE, "On probability as a basis for action", The American Statistician 1975;29(4):146 to 152, <https://doi.org/10.1080/00031305.1975.10477402> (both confirmed against Crossref, 4 October 2026; the first read in summary, the second not opened). Comment: van der Bles and colleagues distinguish uncertainty about a number from uncertainty about the quality of the evidence behind it; Deming distinguishes a complete count of what happened from inference about a process in another period, which needs the process to be stable.

⁷³ Lash TL, Fox MP, MacLehose RF, Maldonado G, McCandless LC, Greenland S, "Good practices for quantitative bias analysis", International Journal of Epidemiology 2014;43(6):1969 to 1985, <https://doi.org/10.1093/ije/dyu149> (confirmed against Crossref; read in summary). Comment: the paper treats unmeasured error as stated assumptions that are published and varied, rather than ignored. Encierro's method document shows a grid and a simulation of such assumptions for 2023.

⁷⁴ Notes 43 (2018 counting change), 93 (2020 and 2021), 44 (counts stopped after 2023); the 2026 access changes from Ayuntamiento de Pamplona, "Las personas corredoras del Encierro no podrán permanecer paradas en el ruedo", 29 May 2026, <https://www.pamplona.es/en/node/78206>, accessed 4 October 2026 (exact sentences retrieved with a retrieval tool), and Noticias de Navarra, 1 July 2026, <https://www.noticiasdenavarra.com/san-fermin/2026/07/01/normas-prohibiciones-correr-encierro-san-fermin-2026-11272743.html>, Read in full.

⁷⁵ Notes 111 (Health Department basis differs almost threefold across three years, $p = 0.0000002$), 114 (2022 to 2026 counts, 2025 left out, spread about two and a half times what a stable rate would give) and 127 (hospital-complex transfers vary more than chance, $p = 0.020$ for 2013 to 2017). Our calculation or reading.

published we asked the same ten questions of it, from "what exactly is the target?" to "what does the report say about all this in one sentence beside the number?"⁷⁶

4.5 Checks and review

CHECK	WHAT IT IS	STATUS
Source check	Each figure confirmed in the source's own words	Done for every figure used, on the dates in the notes; figures that could be confirmed only by quoting the page through a retrieval tool say so
Arithmetic check	Every derived figure produced by the script; sums and ranges checked	Done, 4 October 2026
Internal re-derivation	A second pass, working only from the evidence table and the script, regenerates the numbers	Not done for this version
Wording and sourcing check	Every figure carries a note; no comparison across bases; no prohibited wording	Done, 4 October 2026, by automated checks and the author's read
External review	An independent statistician or epidemiologist outside Encierro reviews the method	Not done. This report has not been externally reviewed; every source is given in full in the notes so that any reader can check each figure

The internal re-derivation is a second pass by the same team and the same tools; it is not independent, and we do not describe it as independent.⁷⁷

4.6 Limits of the method

The grading scheme is adapted from established conventions for evaluating sources and surveillance systems; it is not a validated instrument.⁷⁸ The 15 percent allowance for counting error is a judgement. The figures rest on press reports of official counts that we could not check against the originals. Several methodological references were read only in summary, and are marked as such in the references.⁷⁹ The method covers numbers. It does not decide tone, advice to runners, or anything about any individual's chance of harm.

⁷⁶ Encierro's method document, section 5A.9 (ten-question assessment checklist). Comment: the questions cover the target, the definition, the share captured, the denominator and its error, the number of events and years, how much years differ, changes in process or measurement, independent corroboration, the source's assurance level and overall certainty, and the one-sentence statement beside the number.

⁷⁷ HM Treasury, "The AQUA Book: guidance on producing quality analysis for government", revised edition 30 July 2025, <https://www.gov.uk/guidance/the-aqua-book>, accessed 3 October 2026, Read in summary only. Comment: the AQUA Book separates the analyst from the assurer. A re-run by the same team, or by a second run of the same AI tool, is a useful check but not an independent one.

⁷⁸ German RR, et al., "Updated guidelines for evaluating public health surveillance systems", MMWR Recommendations and Reports 2001;50(RR-13), <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm>, accessed 4 October 2026; UK Office for Statistics Regulation, "Quality Assurance of Administrative Data", <https://osr.statisticsauthority.gov.uk/guidance/administrative-data-and-official-statistics/> (page listed). Comment: the CDC attributes (data quality, sensitivity, predictive value positive, representativeness, timeliness, stability) and the regulator's assurance levels are used as yardsticks, not as certifications.

⁷⁹ Encierro's method document, section 9 (limitations of the method itself). Comment: references read only in summary are marked as such in these notes.

5. The numbers

These are counts of what happened in past years. They describe the event as a whole, not the chance of anything happening to any one person, and they do not predict a future run.⁸⁰

Each figure below is shown on its own basis. Five different things are published under the word "injured" in Pamplona, and they cannot be added together or compared with each other without saying so.⁸¹ Rates are given per run-start: one person standing on the route before one run. Someone who runs on four mornings is counted four times.⁸² Each rate appears in three sentences: what was counted and by whom; the statistical range, then the range allowing for error in the runner count; and what the years together can and cannot tell us.⁸³

5.0 The denominator: runners counted by the city

From 2012 to 2023 the Ayuntamiento de Pamplona counted runners from Policía Municipal camera images taken minutes before the rocket on each of the eight mornings.⁸⁴ The yearly totals were:

YEAR	RUN-STARTS COUNTED	COUNTING METHOD
2012	20,669 ⁸⁵	Original
2013	17,813 ⁸⁶	Original
2014	17,126 ⁸⁷	Original
2015	16,629 ⁸⁸	Original
2016	16,448 ⁸⁹	Original
2017	17,126 ⁹⁰	Original

⁸⁰ Standing sentence of this report. Comment: it is repeated at the start of section 5 and in section 11 (limitations). It is the reason every rate in this section is written in the past tense and per run-start.

⁸¹ See note 10.

⁸² See note 11.

⁸³ See note 45.

⁸⁴ See note 21.

⁸⁵ Same article as 21. Read in full. Reported figure. Comment: the 2014 article gives the 2012 total (20,669; busiest run 8 July, 4,234) and the 2013 total (17,813; busiest 7 July, 3,900) as comparisons. The 2012 count is included in the run-start total (note 100) but in no rate, because no injury series on a single basis was found for 2012.

⁸⁶ See note 85.

⁸⁷ Same article as 21. Read in full. Reported figure. Comment: 2014 total 17,126, a fall of 4 percent; per-run counts 2,483; 2,506; 1,822; 1,927; 1,825; 2,225; 2,924; 1,414 (they add to 17,126). See the conflict in note 98.

⁸⁸ EFE, published in Diario de Navarra, "El número de corredores en el encierro bajó el año pasado casi un 3%" (Runner numbers fell almost 3 percent last year), 29 June 2016, https://www.diariodenavarra.es/noticias/navarra/pamplona_comarca/pamplona/2016/06/29/el_numero_corredores_encierro_bajo_ano_pasado_casi_3_468200_1702.html, accessed 3 October 2026. Read in full. Reported figure. Comment: reports the 2015 count (16,629) a year late, when the city presented its 2015 data. The 2.9 percent fall is consistent with a 2014 total of 17,126, which supports that figure for 2014 (note 98).

⁸⁹ Diario de Navarra, "El 82% de los corredores del encierro se autodefine como 'corredor perfecto'" (82 percent of encierro runners describe themselves as a "perfect runner"), 19 July 2016, https://www.diariodenavarra.es/noticias/san_fermin/2016/07/19/el_los_corredores_del_encierro_autodefine_como_corredor_perfecto_472485_2101.html, accessed 3 October 2026. Read in full. Reported figure. Comment: 2016 total 16,448, 181 fewer than 2015; per-run counts 2,594; 2,706; 2,384; 2,109; 1,790; 1,646; 1,734; 1,485.

YEAR	RUN-STARTS COUNTED	COUNTING METHOD
2018	14,110 ⁹¹	Revised (more restrictive zones)
2019	13,800 ⁹²	Revised
2020, 2021	No encierros ⁹³	
2022	13,100 ⁹⁴	Revised
2023	16,730 ⁹⁵	Revised
2024 to 2026	Not found ⁹⁶	

Three things limit this denominator. The method changed in 2018, so counts before and after are not strictly comparable.⁹⁷ The same total, 17,126, is reported for both 2014 and 2017 with different per-run figures, and one of the two may be a reporting error.⁹⁸ And we did not find a city count for 2024,

⁹⁰ Diario de Navarra, "Menos cornadas y más corredores en los encierros de San Fermín 2017" (Fewer horn wounds and more runners in the 2017 encierros), 16 July 2017, <https://www.diariodenavarra.es/noticias/san-fermin/2017/07/16/menos-cornadas-mas-corredores-los-encierros-san-fermin-2017-541882-2101.html>, accessed 3 October 2026. Read in full. Reported figure. Comment: gives 17,126 (an increase of 678 on 2016) and a per-run table (2,504; 2,984; 2,501; 1,995; 1,933; 2,140; 1,724; 1,345) that adds to 17,126. The city's 2019 release (note 92) also gives 17,126 "contabilizadas" for 2017. See note 98.

⁹¹ See note 43.

⁹² Ayuntamiento de Pamplona, press release on the 2019 runner survey and count, 18 July 2019, <https://www.pamplona.es/en/node/25275>, accessed 3 October 2026. Read in full (Spanish text). Measured figure. Comment: the one city release in the series that is still online and was read in the city's own words. 13,800 run-starts (1,725 a day); 646 runners surveyed; gives 14,110 for 2018 and 17,126 for 2017 as comparisons.

⁹³ Europa Press, as published by Bolsamania, "Pamplona suspende los Sanfermines en julio de 2020 y no se descarta otra fecha", 21 April 2020, <https://www.bolsamania.com/noticias/empresas/economiaturismo--amp-pamplona-suspende-los-sanfermines-en-julio-de-2020-y-no-se-descarta-otra-fecha--7438101.html>; and Reuters, as published by Cyprus Mail, "Spain's Pamplona cancels bull-running festival for second year in row", 26 April 2021, <https://cyprus-mail.com/2021/04/26/spains-pamplona-cancels-bull-running-festival-for-second-year-in-row>; both accessed 4 October 2026 through a retrieval tool, which returned the speaker, date and reason. Reported figure. Comment: the city suspended the July 2020 fiesta because of the COVID-19 pandemic (announced by the deputy mayor) and the 2021 fiesta for the same reason (announced by the mayor, citing high contagion and low vaccination in Navarra).

⁹⁴ Ayuntamiento de Pamplona, "La participación en los actos organizados estos Sanfermines se incrementa un 20% con respecto a los de 2019", 15 July 2022, <https://www.pamplona.es/en/node/56746>, accessed 4 October 2026. The page would not load in a browser; its text was retrieved with a retrieval tool, which returned the exact sentence: "en el encierro, en el que han participado 13.100 personas". Measured figure. Comment: 13,100 run-starts. The city's 2023 balance (note 95) reports 28 percent more participants in 2023, consistent with 13,100 (16,730 is 27.7 percent above 13,100; our arithmetic).

⁹⁵ Ayuntamiento de Pamplona, "Casi 1,5 millones de personas participan en los actos programados por el Ayuntamiento de Pamplona en San Fermín 2023, pese a la lluvia de los días 6 y 7 de julio", 15 July 2023, <https://www.pamplona.es/en/node/61330>, accessed 4 October 2026 (exact sentences retrieved with a retrieval tool). Measured figure. Comment: "un total de 16.730 corredores en el conjunto de los ocho encierros programados"; three horn wounds; and "31 traslados en ambulancia desde el recorrido del encierro y otros cuatro desde la Plaza de Toros". The ambulance transfers do not state their destination, so they are not the same count as runners taken to the hospital complex (note 124).

⁹⁶ See note 44.

⁹⁷ See note 43.

⁹⁸ Our comparison of notes 87, 88, 90, 43 and 92. Our calculation or reading. Comment: two Diario de Navarra originals (2014 and 2017) give exactly 17,126 for two different years, with two different per-run breakdowns that each add to 17,126. Evidence for 2014: the 2015 fall of 2.9 percent to 16,629 works only from 17,126. Evidence for 2017: the 2017 per-run table, the "+678 on 2016" statement, the city's 2019 release and the 2018 article's "376 a day fewer" (which implies 2,140 a day, or 17,120 over eight days). A coincidence to the unit is possible but improbable. Both years are used as reported; the effect on any rate is

2025 or 2026 when this analysis was carried out; a 2024 newspaper report said the city had stopped counting. No rate is given here for those years.⁹⁹ Across the ten counted fiestas the city recorded about 163,550 run-starts.¹⁰⁰

5.1 Injured people seen by the health service (Health Department basis)

The Gobierno de Navarra Health Department reports, at the end of each fiesta, the number of people injured in the encierros who were seen by the hospital (Hospital Universitario de Navarra) and by the out-of-hospital emergency service (SUE).¹⁰¹

YEAR	INJURED, HEALTH DEPARTMENT BASIS	RUN-STARTS	PER 1,000 RUN-STARTS (RANGE ALLOWING FOR COUNTING ERROR)
2019	78 ¹⁰² (provisional)	13,800	5.7 (3.9 to 8.3)
2022	92 ¹⁰³ (provisional)	13,100	7.0 (4.9 to 10.1)
2023	44 ¹⁰⁴ (provisional)	16,730	2.6 (1.7 to 4.2)
2024	56 ¹⁰⁵	not found	none

under 1 percent if either is off by a few hundred. The question is on the list for the city (gap G15, section 8).

⁹⁹ See note 44.

¹⁰⁰ Our arithmetic: 20,669 + 17,813 + 17,126 + 16,629 + 16,448 + 17,126 + 14,110 + 13,800 + 13,100 + 16,730 = 163,551. Our calculation or reading. Comment: the total includes 2012, which is used in no rate, and 2022, whose count rests on an exact sentence retrieved from the city's page (note 94).

¹⁰¹ See note 4.

¹⁰² Noticias de Navarra, report of the Health Department's San Fermín 2022 balance, 14 July 2022, <https://www.noticiasdenavarra.com/san-fermin/2022/07/14/san-fermin-atenciones-urgencias-5814984.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: encierro attentions by the regional health service (hospital plus out-of-hospital) were 92 in 2022 against 78 in 2019, an increase of 17.9 percent; hospital admissions caused by the run were 6 in 2022 against 17 in 2019. The Department described 2022's injuries as milder. Both years cover 6 to 13 July plus the run of 14 July, and the figures were provisional on the day ("a falta de confirmar" the last day). The 2019 figures appear in this 2022 article as a comparison; no 2019 article with them was read.

¹⁰³ See note 102.

¹⁰⁴ Noticias de Navarra, "Osasunbidea ha registrado 341 atenciones relacionadas..." (report of the Health Department's San Fermín 2023 balance), 14 July 2023, <https://www.noticiasdenavarra.com/san-fermin/2023/07/14/osasunbidea-registrado-341-atenciones-relacionadas-7051244.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: 44 encierro attentions, 3 horn wounds, 7 admitted (one by horn wound), with 2022 quoted as 6 admitted (four by horn). The 44 was provisional, pending the last day's confirmation. In the same press round the fiesta-wide total moved from 385 provisional to 415 final (an 8 percent change, as given in the 2024 balance), so the encierro line may also have changed; we keep 44 and label it provisional. Diario de Navarra's 2024 analysis counted 2 horn wounds for 2023 rather than 3 (note 8).

¹⁰⁵ Noticias de Navarra, "Balance sanitario San Fermín 2024", 15 July 2024, <https://www.noticiasdenavarra.com/san-fermin/2024/07/15/balance-sanitario-san-fermin-2024-8481625.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: the fiesta-wide list gives 56 "heridos de los encierros": 43 at HUN (41 trauma, 2

YEAR	INJURED, HEALTH DEPARTMENT BASIS	RUN-STARTS	PER 1,000 RUN-STARTS (RANGE ALLOWING FOR COUNTING ERROR)
2025	45 ¹⁰⁶ (hospital only)	not found	none
2026	71 ¹⁰⁷	not found	none

Rate card 5.1 (2023 shown; 2019 and 2022 follow the same pattern in the table). In 2023 the Health Department recorded 44 injured people in the encierros, and the city counted 16,730 run-starts: about 2.6 per 1,000, or about 1 in 380.^{108,109} Allowing for chance alone the range is about 1 in 520 to 1 in 280; allowing also for an error of up to 15 percent either way in the runner count, it is about 1 in 600 to 1 in 240, and injuries that never reached the health service would push it higher by an amount for which we found no measure.¹¹⁰ The three years with both figures differ almost threefold, far more than chance explains, so these figures describe each year and do not define a typical one.¹¹¹

Two further points. The 2025 figure counts hospital cases alone and is not comparable with 2024 and 2026, which add the out-of-hospital service; on the hospital-only basis the three years were 43, 45 and 60.^{112,113} And the four counts on the full basis from 2022 to 2026 (2025 left out, because it is hospital only) spread about two and a half times as widely as a stable rate would produce.¹¹⁴

horn wounds) plus 13 at the out-of-hospital services. Admissions were not given.

¹⁰⁶ Health Department note on San Fermín 2025 as reprinted by okdiario Navarra, "Salud realiza en San Fermín 508 atenciones propias de fiestas...", 15 July 2025, <https://navarra.okdiario.com/articulo/sanfermin/salud-realiza-san-fermin-508-atenciones-propias-fiestas-7213-urgencias-911-menos-que-2024/20250715114031607867.html>, accessed 3 October 2026. Read in full. Reported figure (a regional outlet's reprint of the Department's note). The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: the hospital paragraph gives 45 people hurt in the encierros at HUN (40 trauma, 5 horn wounds). The out-of-hospital paragraph has no encierro line. So 45 is a hospital-only figure, and it is not stated whether any out-of-hospital encierro cases occurred. That makes 2025 not comparable with 2024 (43 + 13) and 2026 (60 + 11). The coverage of 2026 compared 71 with 45 ("26 more"); that comparison mixes bases. The same reprint mentions nine people admitted, but does not say all nine came from the encierros, so no 2025 admissions figure is used.

¹⁰⁷ See note 7.

¹⁰⁸ See note 104.

¹⁰⁹ Our arithmetic: 44 divided by 16,730 = 0.263 percent = 2.63 per 1,000 = about 1 in 380. Our calculation or reading. Script section 5.1.

¹¹⁰ Our arithmetic. Exact 95 percent interval 0.191 to 0.353 percent (1 in 523 to 1 in 283); with the runner count varied by plus or minus 15 percent, 0.166 to 0.415 percent (1 in 602 to 1 in 241). Our calculation or reading. Comment: a stress test in Encierro's method document, section 5A.4, which also allows the true number of injured to be up to twice the counted number, widens the 2023 range to about 0.21 to 0.58 percent. Those multipliers are assumptions, not measurements; they show how much the answer depends on what was not counted.

¹¹¹ Our arithmetic. 2019: 5.7 per 1,000 (about 1 in 180); 2022: 7.0 (about 1 in 140); 2023: 2.6 (about 1 in 380). Test of equal rates: chi-square 31.2 on 2 degrees of freedom, $p = 0.0000002$. Our calculation or reading. Comment: three years cannot give a sensible range for a typical year (the statistical model has too few points), so each year is reported as itself. Possible reasons for the spread include crowd, weather, bulls, the number of weekend runs, provisional counting and changes in how cases were classified; none has been tested.

¹¹² See note 106.

¹¹³ Our comparison of notes 105, 106 and 7. Our calculation or reading. Comment: hospital-only counts 43 (2024), 45 (2025), 60 (2026). The 2026 hospital figure is 33 percent above 2025 (our arithmetic); without runner counts, it cannot be said whether that reflects more runners, more injuries per runner, or chance.

5.2 Runners taken to the hospital complex

A narrower count, the number of runners hurt who needed care at the Complejo Hospitalario de Navarra (the hospital complex, excluding the San Martín centre), was reported each year by news agencies from the Health Department's daily bulletins.¹¹⁵ It is the most consistent series we found.

YEAR	TAKEN TO THE HOSPITAL COMPLEX	RUN-STARTS	PER 1,000 RUN-STARTS (RANGE ALLOWING FOR COUNTING ERROR)
2013	50 ¹¹⁶	17,813	2.8 (1.8 to 4.4)
2014	42 ¹¹⁷	17,126	2.5 (1.5 to 3.9)
2015	37 ¹¹⁸	16,629	2.2 (1.4 to 3.6)
2016	67 ¹¹⁹	16,448	4.1 (2.8 to 6.1)
2017	51 ¹²⁰	17,126	3.0 (1.9 to 4.6)
2018	42 ¹²¹	14,110	3.0 (1.9 to 4.7)
2019	35 ¹²²	13,800	2.5 (1.5 to 4.2)
2022	52 ¹²³	13,100	4.0 (2.6 to 6.1)

¹¹⁴ Our arithmetic on 92, 44, 56 and 71 (2022, 2023, 2024 and 2026; 2025 is left out because it counts hospital cases only). Mean 65.8; dispersion chi-square 19.5 on 3 degrees of freedom, $p = 0.0002$. Our calculation or reading. Comment: a count with a stable underlying rate would vary by about plus or minus 8 a year around 66; the observed standard deviation is about 21, about two and a half times that. Without runner counts for 2024 and 2026, this cannot separate a change in crowd size from a change in harm per runner. With note 111, it is the strongest evidence in the record that year-to-year differences on this basis are real and not chance.

¹¹⁵ See note 5.

¹¹⁶ See note 20.

¹¹⁷ See note 20.

¹¹⁸ See note 20.

¹¹⁹ See note 20.

¹²⁰ See note 20.

¹²¹ EFE, published in Diario de Navarra, "Balance de heridos de los encierros de San Fermín 2018", 14 July 2018, <https://www.diariodenavarra.es/noticias/san-fermin/2018/07/14/balance-heridos-los-encierros-san-fermin-2018-601245-2101.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: 42 runners taken to the hospital complex, 2 by horn wound, against 51 and 7 in 2017. Per-run: 5, 5, 5, 7, 4, 2, 7, 7. Europa Press repeated the 2 horn wounds in 2019.

¹²² Europa Press, published in Diario de Navarra, "Nueve heridos por asta y carreras veloces en los encierros de San Fermín 2019", 14 July 2019, <https://www.diariodenavarra.es/noticias/san-fermin/2019/07/14/nueve-heridos-por-asta-carreras-veloces-los-encierros-san-fermin-2019-657849-2101.html>, accessed 3 October 2026. Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: 35 taken to the hospital complex, 8 by horn and the rest trauma. The headline says nine horn wounds; the article explains the official count is eight because one runner grazed by a horn refused care. We use 8, the official figure (note 8).

¹²³ Mikel Bernués (DNN), "Resumen de los encierros de San Fermín 2022: los Cebadita rompen el dicho de carrera rápida y limpia", Onda Vasca, 16 July 2022, <https://www.ondavasca.com/resumen-de-los-encierros-de-san-fermin-2022-los-cebadita-rompen-el-dicho-de-carrera-rapida-y-limpia/>, accessed 4 October 2026. The page would not load in a browser; a retrieval tool returned the exact sentences. Reported figure. Comment: "La cifra de corredores trasladados crece: los últimos Sanfermines

YEAR	TAKEN TO THE HOSPITAL COMPLEX	RUN-STARTS	PER 1,000 RUN-STARTS (RANGE ALLOWING FOR COUNTING ERROR)
2023	Not on this basis ¹²⁴	16,730	none

Rate card 5.2. From 2013 to 2017, news agencies reported 247 runners taken to the hospital complex against 85,142 run-starts counted by the city: about 2.9 per 1,000, or about 1 in 350; in 2018 and 2019, under the revised count, 77 against 27,910: about 2.8 per 1,000, or about 1 in 360.¹²⁵ Allowing for chance alone, the earlier period's range is about 1 in 390 to 1 in 300; allowing also for counting error it is about 1 in 450 to 1 in 260.¹²⁶ From 2013 to 2017 the yearly figures varied more than chance alone would readily produce, and a range for a typical past year in that period runs from about 1 in 710 to 1 in 170, which describes the spread of past years and is not a forecast. No clear trend was found: from 2013 to 2019 the rate changed by about 1.5 percent a year, with a range from a fall of 3.9 percent to a rise of 7.3 percent; adding 2022 gives a rise of about 3.7 percent a year (from a fall of 0.1 percent to a rise of 7.6 percent), so a modest rise cannot be ruled out.¹²⁷

prepandemia fueron 35, y este año han sido 52", in a passage on transfers to the Complejo Hospitalario de Navarra. The 2019 figure (35) matches the agency tally for 2019 (note 122), which supports reading 52 as the same count. The article does not name the body that produced the figure. A single press source; the 2022 row should be read with that in mind.

¹²⁴ Ayuntamiento de Pamplona, 2023 balance (note 95), and Agence France-Presse as published by El Observador, "Terminaron los encierros de San Fermín con un total de 30 heridos", 14 July 2023, <https://www.elobservador.com.uy/espana/terminaron-los-encierros-de-san-fermin-con-un-total-de-30-heridos-20237146180/amp>, accessed 4 October 2026 (retrieval tool). Reported figure. Comment: no 2023 figure on the hospital-complex basis was found. The city counted 35 ambulance transfers (31 from the route, 4 from the bullring) without stating where they went; the agency report gives the regional government's running count of 35 injured people (29 to 13 July plus 6 on the last run, of whom 5 went to the hospital), while its headline says 30. Both are wider counts than runners taken to the hospital complex, so 2023 is left out of that series.

¹²⁵ Our arithmetic. 2013 to 2017: 247 in 85,142 = 0.290 percent (2.90 per 1,000; about 1 in 350); exact 95 percent 0.255 to 0.329 percent (1 in 392 to 1 in 304); with plus or minus 15 percent on the runner count 0.222 to 0.387 percent (1 in 451 to 1 in 259). 2018 and 2019: 77 in 27,910 = 0.276 percent (2.76 per 1,000; about 1 in 360); exact 0.218 to 0.345 percent; with counting error 0.189 to 0.406 percent. Our calculation or reading. Comment: the periods are reported separately because the runner count changed method in 2018 (Encierro's method document, section 5.4). The revised method counts fewer runners, so on a like-for-like count the later rate would, if anything, be lower than shown.

¹²⁶ See note 125.

¹²⁷ Our arithmetic (calculation script). 2013 to 2017: test of equal rates chi-square 11.7 on 4 degrees of freedom, $p = 0.020$; range for a typical past year (random-effects prediction interval) 0.142 to 0.588 percent (1 in 707 to 1 in 170). 2018, 2019 and 2022 (revised count; 2023 has no figure on this basis): chi-square 4.6 on 2 degrees of freedom, $p = 0.10$. Across 2013 to 2019, combined across the 2018 break as a labelled check: pooled 0.287 percent; chi-square 12.5 on 6 degrees of freedom, $p = 0.053$; range for a typical past year 0.185 to 0.444 percent (1 in 542 to 1 in 225). Adding 2022 (eight years, also a check): pooled 0.298 percent (about 1 in 340); chi-square 16.8 on 7 degrees of freedom, $p = 0.019$; range 0.188 to 0.472 percent (1 in 531 to 1 in 212). Trend (Poisson regression with run-starts as exposure): 2013 to 2019, plus 1.5 percent a year (95 percent interval minus 3.9 to plus 7.3; $p = 0.59$); 2013 to 2019 plus 2022, plus 3.7 percent a year (minus 0.1 to plus 7.6; $p = 0.054$). Both trend fits cross the 2018 change in counting, which lowered the later runner counts and so, if anything, raised the later rates. Our calculation or reading. Comment: a range for a typical past year describes how much past years differed from each other. It is wider than the interval for the average. It is not a forecast, because the event changes (routes, rules, counting, crowds) and we found no runner counts after 2023.

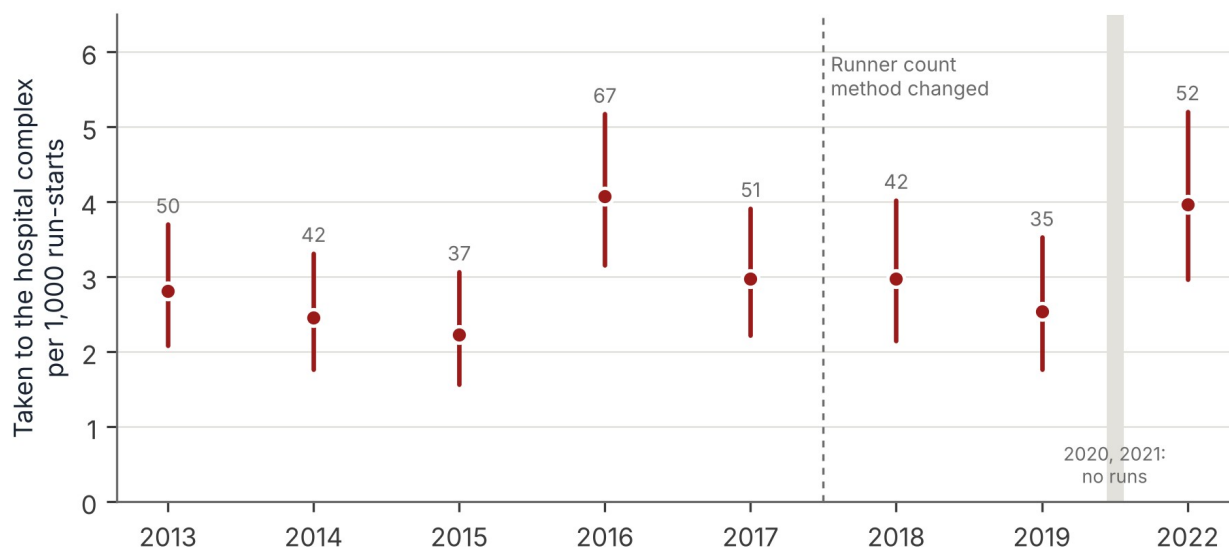


Fig. 1. Runners taken to the hospital complex per 1,000 run-starts, 2013 to 2022. Dots show each year's rate; vertical lines show the exact 95 percent range for chance alone; numbers above are the counts. 2023 is not shown because no count on this basis was found. Sources: EFE and Europa Press reports in *Diario de Navarra* (2013 to 2019), *Onda Vasca* (2022) and the Ayuntamiento de Pamplona's runner counts; see the notes to section 5.2.

5.3 Horn wounds

YEAR	HORN WOUNDS	RUN-STARTS	PER 1,000 RUN-STARTS (EXACT RANGE)
2013	6 ¹²⁸	17,813	0.34 (0.12 to 0.73)
2014	8 ¹²⁹	17,126	0.47 (0.20 to 0.92)
2015	10 ¹³⁰	16,629	0.60 (0.29 to 1.1)
2016	12 ¹³¹	16,448	0.73 (0.38 to 1.3)
2017	7 ¹³²	17,126	0.41 (0.16 to 0.84)
2018	2 ¹³³	14,110	0.14 (0.02 to 0.51)
2019	8 ¹³⁴	13,800	0.58 (0.25 to 1.1)
2022	6 ¹³⁵	13,100	0.46 (0.17 to 1.0)

¹²⁸ As note 20 (EFE via *Diario de Navarra*, 14 July 2017). Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: horn wounds 2013 6; 2014 8; 2015 10; 2017 7. The 2017 article notes 7 was the lowest since 2013.

¹²⁹ See note 128.

¹³⁰ See note 128.

¹³¹ *Diario de Navarra*, 16 July 2017 (note 90), gives 12 horn wounds for 2016; the EFE article of 14 July 2017 (note 20) implies 14 ("doubled" from 7). Reported figure. Comment: we use 12, the figure stated outright, and show 14 as a sensitivity: with 14, the horn-wound rates remain statistically consistent with one rate ($p = 0.093$ instead of 0.21).

¹³² See note 128.

¹³³ See note 121.

¹³⁴ See note 122.

YEAR	HORN WOUNDS	RUN-STARTS	PER 1,000 RUN-STARTS (EXACT RANGE)
2023	3 ¹³⁶	16,730	0.18 (0.04 to 0.52)
2024	2 ¹³⁷	not found	none
2025	5 ¹³⁸	not found	none
2026	6 ¹³⁹	not found	none

Rate card 5.3. Across the twelve fiestas from 2013 to 2026, the sources record 75 horn wounds, an average of about six a fiesta, with single years ranging from two to twelve.¹⁴⁰ In the years with a runner count, there were 43 horn wounds against 85,142 run-starts from 2013 to 2017, about 0.51 per 1,000 or about 1 in 2,000 (range for chance about 1 in 2,700 to 1 in 1,500), and 19 against 57,740 from 2018 to 2023 under the revised count, about 0.33 per 1,000 or about 1 in 3,000 (about 1 in 5,000 to 1 in 1,900); the two periods' ranges overlap. Combining all nine years as a check gives about 1 in 2,300.¹⁴¹ The yearly figures are consistent with one unchanging rate, although counts this small can detect only large differences, and a downward drift is neither shown nor ruled out; with six events a year, a single fiesta can show anything from two to twelve by chance alone, so one year's count says little about the next.¹⁴²

¹³⁵ As note 123 (Onda Vasca, 16 July 2022, exact sentence retrieved): "Tres de las seis cornadas de las fiestas llevan la firma del hierro gaditano." Reported figure. Comment: six horn wounds in 2022. Consistent with the Health Department's 2023 comparison, which gave six admissions in 2022, four of them for horn wounds (note 104).

¹³⁶ See note 104.

¹³⁷ Noticias de Navarra 15 July 2024 (note 105: 2 horn wounds at HUN) and Natxo Gutiérrez, "El balance del encierro se salda con solo dos corneados", Diario de Navarra, 16 July 2024, <https://www.diariodenavarra.es/noticias/san-fermin/2024/07/16/el-balance-encierro-salda-dos-corneados-toro-615743-2101.html>, accessed 3 October 2026, Read in full. Reported figure. Comment: two independent press sources agree on 2: one wound by a bull in Santo Domingo on 12 July and one graze from a lead steer. The Associated Press figure of 4 gored in 2024, repeated elsewhere, is unexplained and is not used. Whether a graze from a steer counts as a "horn wound" is exactly the definitional question in note 8.

¹³⁸ See note 106.

¹³⁹ See note 7.

¹⁴⁰ Our sum of notes 104, 105, 106 and 7, 20, 121 and 122, 128, 131, 135 and 137. 2013 to 2026, twelve fiestas: 6, 8, 10, 12, 7, 2, 8, 6, 3, 2, 5, 6 = 75; mean 6.25 (exact 95 percent interval for the mean 4.9 to 7.8). Our calculation or reading. Comment: the 2023 value (3) was provisional on the day.

¹⁴¹ Our arithmetic. By period: 2013 to 2017, 43 horn wounds in 85,142 run-starts = 0.051 percent (about 1 in 1,980; exact 95 percent 1 in 2,736 to 1 in 1,470); 2018 to 2023 (revised count; 2018, 2019, 2022, 2023), 19 in 57,740 = 0.033 percent (about 1 in 3,040; exact 1 in 5,048 to 1 in 1,946); the exact intervals of the two periods overlap. Combined across the 2018 break, as a labelled check: 62 in 142,882 = 0.043 percent (about 1 in 2,300); exact 95 percent 1 in 3,006 to 1 in 1,798; with plus or minus 15 percent on the runner count, 1 in 3,457 to 1 in 1,528. Our calculation or reading.

¹⁴² Our arithmetic. Test of equal rates across nine years: chi-square 10.8 on 8 degrees of freedom, $p = 0.21$. Counts per fiesta: dispersion chi-square 16.4 on 11 degrees of freedom, $p = 0.13$. A Poisson count with mean 6.25 falls between 2 and 12 in 95 percent of years. Rate trend with run-starts as exposure, 2013 to 2023: minus 4.6 percent a year, 95 percent interval minus 11.9 to plus 3.4, $p = 0.25$ (Encierro's method document, section 5A.5). Our calculation or reading. Comment: "consistent with one rate" is weak evidence: counts this small give tests little power, so the data cannot prove the rate was constant. They also cannot show it fell.

Sources disagree by one or two wounds in four of these years (2016, 2019, 2023, 2024), and we found no published official definition of a horn wound; the notes give each conflict and the figure used.¹⁴³

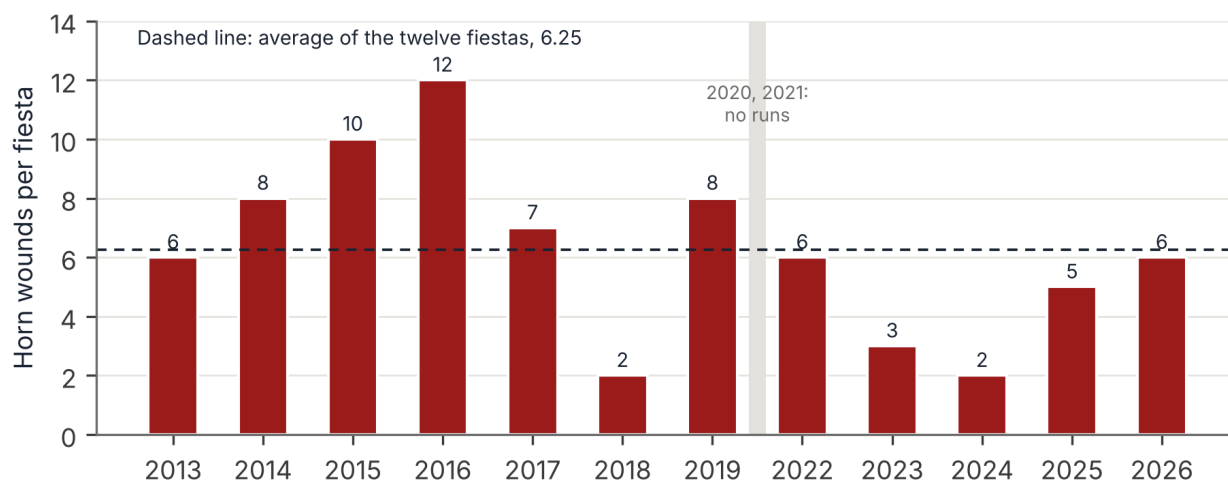


Fig. 2. Horn wounds recorded per fiesta, 2013 to 2026. Sources as in section 5.3; four years have counts that differ by one or two between sources, and the figure shows the count used in this report.

5.4 Admitted to hospital because of the run

YEAR	ADMITTED	RUN-STARTS	PER 1,000 RUN-STARTS (EXACT RANGE)
2017	12 ¹⁴⁴	17,126	0.70 (0.36 to 1.2)
2019	17 ¹⁴⁵	13,800	1.2 (0.72 to 2.0)
2022	6 ¹⁴⁶	13,100	0.46 (0.17 to 1.0)
2023	7 ¹⁴⁷	16,730	0.42 (0.17 to 0.86)
2026	9, two of them in intensive care ¹⁴⁸	not found	none

Rate card 5.4. In the four years with both figures, the Health Department and the press reported 42 runners admitted to hospital because of the run against about 60,760 run-starts: about 0.7 per 1,000, or about 1 in 1,400.¹⁴⁹ The four yearly figures ran from about 1 in 2,400 to about 1 in 810 and differed

¹⁴³ See note 8.

¹⁴⁴ Diario de Navarra, 16 July 2017 (note 90). Read in full. Reported figure. Comment: 64 attended at the hospital complex and the San Martín centre, including the 7 gored; 12 of the 64 needed admission. The city's 2018 note on 2017 gives the same 64 and 7 (Ayuntamiento de Pamplona, 11 June 2018, <https://www.pamplona.es/en/node/4742>, read in summary only).

¹⁴⁵ See note 102.

¹⁴⁶ See note 102.

¹⁴⁷ See note 104.

¹⁴⁸ See note 7.

¹⁴⁹ Our arithmetic. $12 + 17 + 6 + 7 = 42$ admissions in 60,756 run-starts = 0.069 percent (0.69 per 1,000; about 1 in 1,400); exact 0.050 to 0.093 percent. Yearly: 2017 about 1 in 1,400; 2019 about 1 in 810; 2022 about 1 in 2,200; 2023 about 1 in 2,400. Test of equal rates: chi-square 8.7 on 3 degrees of freedom, $p = 0.034$. Range for a typical past year: about 1 in 12,000 to 1 in 180, too wide to be useful. Our calculation or reading.

more than chance alone would readily produce.¹⁵⁰ Four years cannot define a typical year, and "admitted" is counted on the day, so later admissions may be missed.¹⁵¹

5.5 Within one fiesta: the eight runs of 2026

The daily medical reports for the eight runs of 2026, as published by Diario de Navarra, show how injuries spread across the fiesta.¹⁵² The headline counts per run were 4, 3, 13, about 10, 15, 11, 8 and 13, about 77 in all, against the Health Department's final figure of 71.¹⁵³ The two do not match because the daily headlines include people attended at the bullring and first reports that were not updated; they are a different quantity from the final balance.¹⁵⁴ Horn wounds in the daily reports add to six, matching the final figure.¹⁵⁵ Injuries were reported at every section of the route, from Santo Domingo to the bullring.¹⁵⁶ This reconstruction describes one year and is not a basis for any statement about where or to whom injuries happen in general.

5.6 Deaths

The city's list records 16 deaths in the encierro, from 1910 to 2009.¹⁵⁷ Eleven occurred before 1980 and five from 1980 onwards. Six of those who died were from Pamplona, six from elsewhere in Navarra, two from elsewhere in Spain (Badajoz and Alcalá de Henares), one from Mexico and one from the United States. They were aged between 17 and 63.¹⁵⁸

YEAR	DATE	AGE	FROM	WHERE CAUGHT, AND CIRCUMSTANCES
2009	10 July	27	Alcalá de Henares (Madrid)	Telefónica stretch; gored in the neck and lung by a bull from the Jandilla ranch that had separated from the herd; died in hospital the same day ^{159,160}

¹⁵⁰ See note 149.

¹⁵¹ See note 6.

¹⁵² See note 19.

¹⁵³ See note 36.

¹⁵⁴ See note 36.

¹⁵⁵ Our reconstruction from note 19: one horn wound each in runs 2, 3, 5 and 6, and two in run 8 (after a first report of three was corrected) = 6, matching the Department's 6 (note 7) and the Cruz Roja balance's 6 (Europa Press via Diario de Navarra, 15 July 2026, <https://www.diariodenavarra.es/noticias/san-fermin/2026/07/15/cruz-roja-atendido-total-1-499-personas-sanfermines-2026-828444-55.html>, Read in full). Our calculation or reading. Comment: the run 6 wound was treated at the bullring and the person was not taken to hospital, so how the Department counted it at the hospital is unclear; the totals match, but the match may hide offsetting differences.

¹⁵⁶ Note 19. Reported figure. Comment: injuries were reported in Santo Domingo, the Plaza del Ayuntamiento, Mercaderes, Estafeta, the Telefónica bend, Espoz y Mina, the Callejón, the Bajada de Javier and the bullring. Places are given only for people listed individually, mostly those taken to hospital, so the reports cannot show where injuries are concentrated, even for 2026.

¹⁵⁷ See note 9.

¹⁵⁸ See note 9.

¹⁵⁹ See note 9.

¹⁶⁰ Associated Press, as published by WPVI-TV (6abc), "One dead at running of the bulls", 10 July 2009, <https://6abc.com/archive/6908591>; and Europa Press, as published by Público, "Víctima número 15 en la historia de los Sanfermines", 10 July 2009, <https://www.publico.es/actualidad/victima-numero-15-historia-sanfermines.html>; both accessed 4 October 2026 through a retrieval tool. Reported figure. Comment: the agencies report that the runner was gored in the neck and lung by a bull from the Jandilla ranch that had separated from the herd, and died in hospital the same morning. The agency counts of deaths at the time (15) differ from the city's later list (16), which includes the 1910 case.

YEAR	DATE	AGE	FROM	WHERE CAUGHT, AND CIRCUMSTANCES
2003	Caught 8 July; died 24 September	63	Pamplona	Head injuries in the run; died after about two and a half months in hospital; he had run the encierro since the age of 14 ^{161,162}
1995	13 July	22	Illinois, United States	Plaza Consistorial; fell, got up, and was gored by a bull from the Torrestrella ranch; reported to be running for the first time ^{163,164}

The three most recent deaths show how different the circumstances were: a first-time runner from abroad in 1995, a local man who had run for nearly fifty years in 2003, and a 27-year-old from near Madrid in 2009, whose experience as a runner we found no source describing.¹⁶⁵ Three cases cannot show whether experience changes the risk of death, and this report draws no conclusion from them.

No death in the encierro was recorded in any source we read from 2010 to 2026.¹⁶⁶ A run of years without a death does not show that the risk of death is zero.

5.7 Falls and the physical setting

One peer-reviewed study filmed runners from above on Calle Estafeta during two runs, on 8 and 9 July 2019, and tracked each person's movement.¹⁶⁷ As the bulls approached, runners went from standing to running, and speed and crowd density rose together, to about 4 metres a second at about one person per square metre.¹⁶⁸ The researchers recorded 20 falls in the two recordings, all of them as the bulls passed, and 14 of the 20 in falls involving more than one person.¹⁶⁹ The study measured

¹⁶¹ See note 9.

¹⁶² Europa Press, as published by Público, 10 July 2009 (note 160), and the city's list (note 9). Reported figure. Comment: the agency describes him as a Pamplona man who had run the encierro since the age of 14 and was a board member of the football club Osasuna; he suffered head injuries in the run of 8 July 2003 and died after about two and a half months in hospital. The city gives 24 September 2003 as the date of death.

¹⁶³ See note 9.

¹⁶⁴ Burt Constable, "Running with bulls annual reminder of suburban tragedy", Daily Herald (Arlington Heights, Illinois), 9 July 2014, <https://www.dailyherald.com/20140709/news/running-with-bulls-annual-reminder-of-suburban-tragedy/>; Deseret News, "Pamplona victim's trip was a graduation present", 14 July 1995, <https://www.deseret.com/1995/7/14/19182272/pamplona-victim-s-trip-was-a-graduation-present/>; Europa Press via Público, 10 July 2009 (note 160); all accessed 4 October 2026 through a retrieval tool. Reported figure. Comment: the reports describe a 22-year-old from Glen Ellyn, Illinois, travelling after graduation, who decided to run on the spur of the moment, fell, stood up and was gored in the Plaza Consistorial by a Torrestrella bull. The "first time" description comes from the 2014 newspaper retrospective and is consistent with the 1995 report; neither is an official record.

¹⁶⁵ Our reading of notes 160, 162 and 164. Our calculation or reading. Comment: none of the agency or newspaper reports we read for 2009 describes the runner's previous experience, so the report does not characterise it. Three deaths in thirty years are far too few to show any pattern by experience, origin or age.

¹⁶⁶ Our search of the sources in this report. Our calculation or reading. Comment: the city's December 2023 list ends in 2009 (note 9), and the Health Department balances for 2024, 2025 and 2026 as reported by the press (notes 105, 106 and 7) mention no death in the encierro; nor did any other source we read.

¹⁶⁷ See note 25.

¹⁶⁸ Same paper as 25. Comment: mean speed and density rose together as the bulls approached, because runners switched from standing to running; at the highest speeds and densities the data thin out, which the authors describe as an "inaccessible region" and link to falls. Values are read from the paper's text and figures, rounded.

¹⁶⁹ Same paper as 25. Comment: 13 falls in one recording and 7 in the other; 6 involved one person and 14 occurred in groups. The share of runners in view who fell was between about 0.08 and 0.21, and the authors say the upper value is probably too

movement and falls, not injuries; it covers two runs at two points on the route in one year, and its fall figures are not a rate per runner or per run.¹⁷⁰

5.8 Who runs

The city surveyed runners on the route each year from 2012 to 2019.¹⁷¹ Between 43 and 65 percent of the runners interviewed each year said they were running for the first time.

YEAR	INTERVIEWS	FIRST-TIME (PERCENT)	RANGE IF THE SAMPLE WERE RANDOM
2013	517	56 ¹⁷²	52 to 60
2014	739	65 ¹⁷³	62 to 68
2015	749	59 ¹⁷⁴	55 to 63
2016	771	46 ¹⁷⁵	43 to 50
2017	755	50 ¹⁷⁶	46 to 54
2018	724	43 ¹⁷⁷	39 to 47
2019	646	52 ¹⁷⁸	48 to 56

The surveys describe who runs, not who gets hurt. No public source we found links injury to whether someone was running for the first time, and this report does not estimate it.¹⁷⁹ We did not find the

high.

¹⁷⁰ Our assessment of the paper (note 25). Comment: the study does not record injuries, experience, age or nationality, and its fall shares are fractions of the people in the camera's view at one moment, not a rate per runner or per run. It is cited for the physical setting only.

¹⁷¹ See note 22.

¹⁷² EFE, from a city statement, published in Diario de Navarra, "El 56% de quienes han corrido el encierro lo ha hecho por primera vez", 17 July 2013, https://www.diariodenavarra.es/noticias/san_fermin/2013/actualidad/2013/07/17/el_quienes_han_corrido_encierro_han_hecho_por_primera_vez_124450_2682.html, accessed 3 October 2026. Read in full. Reported figure. Also the city's own annual report: Ayuntamiento de Pamplona, Memoria de gestión municipal 2013, "Gestión de la vía pública", <https://www.pamplona.es/aytomemoria2013/es/memoria-gestion-municipal/seguridad-ciudadana/gestion-via-publica.htm> (Read in summary only). Comment: 517 interviews; 56 percent first-time.

¹⁷³ As note 21 (Diario de Navarra, 18 July 2014). Read in full. Reported figure. Comment: 739 interviews; 65 percent first-time.

¹⁷⁴ As note 88 (EFE via Diario de Navarra, 29 June 2016, on 2015). Read in full. Reported figure. Comment: 749 interviews; 59 percent first-time.

¹⁷⁵ As note 89 (Diario de Navarra, 19 July 2016). Read in full. Reported figure. Comment: 771 interviews; 46 percent first-time.

¹⁷⁶ Diario de Navarra, "La mitad de los corredores de los encierros de este año participaron por primera vez", 18 July 2017, <https://www.diariodenavarra.es/noticias/san-fermin/2017/07/18/la-mitad-los-corredores-los-encierros-este-ano-estrenaron-542177-2101.html>, accessed 3 October 2026. Read in full. Reported figure. Comment: 755 interviews; 50 percent first-time.

¹⁷⁷ As note 43 (Diario de Navarra, 17 July 2018). Read in full. Reported figure. Comment: 724 interviews; 43 percent first-time, described as the lowest in the city's surveys since 2012.

¹⁷⁸ As note 92 (Ayuntamiento de Pamplona, 18 July 2019). Read in full. Measured figure. Comment: 646 interviews; 52 percent first-time. The same release gives 11 percent of runners in its worst category ("perfectos inútiles"), against 0 to 2 percent in every other year; treat that line as unverified.

¹⁷⁹ See note 15.

survey design published, so the ranges shown assume a random sample that cannot be confirmed.¹⁸⁰ The year-to-year spread (about 33 to 73 percent for any one year) is wider than sampling alone would produce.¹⁸¹

6. What the records tell us

Read together, the public records support a short list of statements about past encierros. Each is limited to what was counted, by whom and when, and carries a label for how far the evidence supports it.¹⁸²

QUESTION	WHAT THE RECORDS SUPPORT	LABEL	CERTAINTY
How often were runners taken to the hospital complex?	From 2013 to 2019, news agencies reported between 35 and 67 runners a fiesta taken to the hospital complex: about 2.9 for every 1,000 run-starts counted by the city from 2013 to 2017, and about 2.8 in 2018 and 2019 under the revised count. Yearly figures from 2013 to 2022 stayed within about 2 to 4 per 1,000; no clear trend was found, though a modest rise cannot be ruled out. ^{183,184}	Probable	Low to moderate

¹⁸⁰ See note 49.

¹⁸¹ Our arithmetic on 2013 to 2019 (2012 excluded: "more than 60" is not a figure). Mean 53 percent; between-year standard deviation 7.6 points against about 1.9 points expected from sampling; 95 percent range for one year about 33 to 73 percent. Our calculation or reading. Comment: either the mix of runners changed from year to year, or the survey's method did, or both.

¹⁸² Encierro's method document, section 6.4, and section 9.2 of this report. Comment: established means the statement rests on a measuring body's own text or on agreement between independent sources; probable means one credible source or consistent press relays of official figures; uncertain means sources conflict or are weak; unknown means no usable source. The labels are our judgement.

¹⁸³ See note 125.

¹⁸⁴ See note 127.

QUESTION	WHAT THE RECORDS SUPPORT	LABEL	CERTAINTY
How many horn wounds were there?	From 2013 to 2026, sources recorded between 2 and 12 horn wounds a fiesta, about six on average: about 1 for every 2,000 run-starts from 2013 to 2017 and 1 in 3,000 from 2018 to 2023. The yearly figures are consistent with one unchanging rate, though counts this small can show only large differences. ^{185,186,187}	Probable	Low to moderate
How many people did the health service see?	On the Health Department's basis, the encierros produced 78 injured people in 2019, 92 in 2022 and 44 in 2023, about 5.7, 7.0 and 2.6 per 1,000 run-starts; the counts for 2024 to 2026 (56, 45 at the hospital alone, 71) have no runner count beside them. ^{188,189,190,191,192}	Probable for each year	Low to moderate for each year; very low for a typical year
How often was someone admitted to hospital?	In the four years with both figures, between 6 and 17 runners a fiesta were admitted because of the run, about 0.4 to 1.2 per 1,000 run-starts. ¹⁹³	Uncertain	Low
Did injuries vary between years?	On the Health Department's basis, yes: the yearly counts differed far more than chance explains, so a single year is a poor guide to another. Runners taken to the hospital complex varied more than chance from 2013 to 2017 but less clearly across 2013 to 2019, and horn-wound counts were consistent with chance. ^{194,195,196,197}	Probable	Moderate for the Health Department basis; low for the others

¹⁸⁵ See note 140.

¹⁸⁶ See note 141.

¹⁸⁷ See note 142.

¹⁸⁸ See note 102.

¹⁸⁹ See note 104.

¹⁹⁰ See note 105.

¹⁹¹ See note 106.

¹⁹² See note 7.

¹⁹³ See note 149.

¹⁹⁴ See note 111.

¹⁹⁵ See note 114.

¹⁹⁶ See note 127.

¹⁹⁷ See note 142.

QUESTION	WHAT THE RECORDS SUPPORT	LABEL	CERTAINTY
What did the deaths list record?	The city's list records 16 deaths from 1910 to 2009, the most recent in 2009; no death in the encierro was recorded in any source we read from 2010 to 2026. ^{198,199}	Established	High for the list itself
Who ran?	Between 43 and 65 percent of runners interviewed by the city each year from 2013 to 2019 said they were running for the first time. ^{200,201}	Probable	Low
When did falls happen?	In the two runs filmed for a peer-reviewed study in 2019, all 20 recorded falls happened as the bulls passed, mostly in groups. ²⁰²	Established for those two runs	Moderate for those runs; not generalisable
Do the different sources agree?	For horn wounds, where two or more sources give a count for the same year, they differ by one or two at most: in 2016, 2019, 2023 and 2024 the sources differ by one or two, and in 2026 the Health Department, Cruz Roja and the daily reports all give six. Counts of injured people on different bases are not expected to agree. ^{203,204}	Probable	Low to moderate

What these statements add up to

Over the years the public record covers, the encierro sent somewhere between two and four people to the hospital complex for every thousand times someone stood on the route, and produced a horn wound roughly once for every two thousand or more such times.²⁰⁵ Those are statements about the event as a whole in past years. They are not anyone's chance of injury, and they come with limits that section 7 sets out beside them.²⁰⁶

¹⁹⁸ See note 9.

¹⁹⁹ See note 166.

²⁰⁰ See note 172.

²⁰¹ See note 178.

²⁰² See note 169.

²⁰³ See note 8.

²⁰⁴ See note 155.

²⁰⁵ Our summary of notes 125, 127 and 141. Our calculation or reading. Comment: "between two and four per thousand" is the spread of the yearly hospital-complex rates from 2013 to 2022 (2.2 to 4.1 per 1,000); "roughly once for every two thousand or more" covers the horn-wound rates by period (about 1 in 2,000 from 2013 to 2017 and about 1 in 3,000 from 2018 to 2023).

²⁰⁶ See note 80.

7. What the records do not tell us

Absence of evidence is reported here as prominently as evidence.²⁰⁷ Each row names a question readers ask, why the public record cannot answer it, and what would.

QUESTION	WHY THE RECORDS CANNOT ANSWER IT	WHAT WOULD	WHO MAY HOLD IT
1. What is my chance of being hurt?	Rates are per run-start, an event-level count. The number of different people who ran is unknown, and no record we found shows how each person ran. ²⁰⁸	Person-level data on who ran, how often and how, linked to outcomes	Not collected in any source we found ²⁰⁹
2. What will next year look like?	Counts describe past years. The event and the counting both changed, and we found no runner counts after 2023. ²¹⁰	Continued counts under stable rules, and even then a range, not a forecast	City, Health Department

²⁰⁷ Encierro's method document ("absence of data is stated as prominently as data"). Comment: section 7 sits beside section 6 in the final layout so that neither is read without the other.

²⁰⁸ See note 11.

²⁰⁹ Our assessment. Comment: a person-level risk would need to know how many different people ran, how many times each ran, where and how close to the herd, and outcomes for each. The city's count is of run-starts in snapshots, its surveys are anonymous interviews of a few percent of run-starts, and the health records are of patients. We found no body that links them, and linking health records to individuals raises data-protection questions this report does not attempt to answer (Encierro's method document, section 5.7, 6.6).

²¹⁰ See note 74.

QUESTION	WHY THE RECORDS CANNOT ANSWER IT	WHAT WOULD	WHO MAY HOLD IT
3. Are first-timers hurt more often?	No public source we found records whether an injured person was running for the first time. ²¹¹	Experience recorded for injured runners, and for all runners	Health Department, hospital (gap G1) ²¹²
4. Has any safety measure reduced injuries?	We found no evaluation; before-and-after counts have no comparison group and the definitions changed. ²¹³	A designed evaluation with stable counting	City, regional government (gap G11)
5. Is the run more or less dangerous than other activities?	No comparison was found that counts the same kind of harm in the same way over the same period. ²¹⁴	Matched definitions and exposure measures	Not applicable
6. How many injuries never reached a clinic?	Every count depends on someone being seen by a counted service. People who treat themselves or leave are missed. ²¹⁵	A survey of runners after the run, or linked first-aid and hospital records	First-aid bodies, Health Department (gap G4)
7. How serious were the injuries, and how did people recover?	The records we found stop at admission and, occasionally, intensive care; none we found follows injured people afterwards. ²¹⁶	Severity scores and follow-up	Hospital (gaps G1, G17)

²¹¹ See note 15.

²¹² Encierro's method document, section 8.3. Comment: gaps are numbered G1 to G17 and listed in section 8.2 with who may hold each and whether a request has been made. G1: case definition and aggregated tables of injured people by age, sex, origin, injury, route section, severity and any experience status, from the Health Department and the hospital.

²¹³ See note 16.

²¹⁴ See note 14.

²¹⁵ Encierro's method document, section 3.4 (sensitivity, the share of all true cases that enter a count) and 8.2 (which rates the Health Department count as covering people who sought care only). Comment: the Cruz Roja and DYA counts, which run several times higher than the hospital counts (note 3), show that many people receive care on the street; how many hurt people receive no care at all is unknown.

²¹⁶ See note 6.

QUESTION	WHY THE RECORDS CANNOT ANSWER IT	WHAT WOULD	WHO MAY HOLD IT
8. Where on the route do injuries happen, year after year?	Place on the route is published per person in daily reports, mostly for those taken to hospital, and has been compiled for two fiestas at most. ^{217,218}	Route-section tables for every year	Health Department, Cruz Roja (gaps G1, G4)
9. Why do the counts differ so much between years?	Crowd, bulls, weather, weekend runs, provisional counting and classification all change at once, and none is recorded alongside the counts. ²¹⁹	Per-run counts with conditions recorded, over many years	Health Department, city (gap G13)
10. How do 2024, 2025 and 2026 compare with earlier years?	We did not find a runner count for those years, so no rate is calculated here; counts alone cannot separate more runners from more harm per runner. ^{220,221}	Resumed runner counts	City (gap G2)
11. Is the risk of death zero?	No death in the encierro was recorded in any source we read after 2009, but a run of years without a death cannot show that the risk is zero. ²²²	Many more years of records	Not obtainable quickly
12. Is any count complete?	We found no published case definition from any counting body. ²²³	Published definitions and methods	Health Department, city (gaps G1, G2, G16)

What a zero count means. When no event of a kind is recorded over a period, it shows that the event was not recorded in that period. It does not show that the event cannot happen.²²⁴

²¹⁷ See note 156.

²¹⁸ Noticias de Navarra, 14 July 2023 (note 104): the 2023 balance gives hospital cases by stretch of the route (Estafeta 9, Telefónica 9, Mercaderes 6, Santo Domingo 5, bullring 2, Callejón 2, Ayuntamiento 1). Read in full. Reported figure. The Health Department's own bulletin could not be opened: the Gobierno de Navarra press room on navarra.es could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily; the figure is taken from the named news report and has not been verified against the bulletin. Comment: this is the only whole-fiesta count by stretch found; it covers hospital cases in one year, provisional on the day. With 2026 (note 156) it gives two fiestas, not enough to say where injuries concentrate in general. The stretches are also of different lengths and carry different numbers of runners, which a fair comparison would need to allow for.

²¹⁹ See note 111.

²²⁰ See note 44.

²²¹ See note 113.

²²² See note 166.

²²³ See note 4.

²²⁴ Comment: absence of a recorded event over a period is evidence about that period only. It does not establish that the event cannot happen.

8. What we do not know

8.1 Data used in this report, year by year

The map below shows, for each fiesta since 2012, which of the six main series this report could use on a single basis. A blank ("None") means we did not find or could not use a figure on that basis, not that no such data exist; much of it may be held by the bodies named in section 8.2.²²⁵

Key: **Full** = a figure on this basis was found and used, from a source read in full; **Full (exact sentences)** = the page would not load in a browser, so its exact sentences were retrieved and quoted, and the page itself was not viewed; **None** = no figure on this basis found or used in this report; "no fiesta" = no encierros held.

YEAR	RUNNER COUNT	HEALTH DEPT INJURED	TAKEN TO HOSPITAL COMPLEX	HORN WOUNDS	ADMITTED	RUNNER SURVEY
2012	Full	None	None	None	None	Full
2013	Full	None	Full	Full	None	Full
2014	Full	None	Full	Full	None	Full
2015	Full	None	Full	Full	None	Full
2016	Full	None	Full	Full (sources differ)	None	Full
2017	Full (total disputed)	None	Full	Full	Full	Full
2018	Full (new method)	None	Full	Full	None	Full
2019	Full	Full	Full	Full	Full	Full
2020	no fiesta	no fiesta	no fiesta	no fiesta	no fiesta	no fiesta
2021	no fiesta	no fiesta	no fiesta	no fiesta	no fiesta	no fiesta
2022	Full (exact sentences)	Full	Full (exact sentences)	Full (exact sentences)	Full	None
2023	Full (exact sentences)	Full (provisional)	None (ambulance transfers only)	Full	Full	None
2024	None (not found)	Full	None	Full	None	None

²²⁵ Our compilation from the section 5 notes. Our calculation or reading. Comment: the map follows the idea of an evidence and gap map, which shows where evidence exists and where it is missing: International Initiative for Impact Evaluation (3ie), "Evidence gap maps", <https://3ieimpact.org/evidence-hub/evidence-gap-maps>, accessed 3 October 2026. Ours maps our own sources, not a systematic search of a field. A figure on a different basis (for example 2016's 87 at the hospital complex and the San Martín centre, or 2023's ambulance transfers) is shown as "None" for the series it does not belong to.

YEAR	RUNNER COUNT	HEALTH DEPT INJURED	TAKEN TO HOSPITAL COMPLEX	HORN WOUNDS	ADMITTED	RUNNER SURVEY
2025	None (not found)	Full (hospital only)	None	Full	None	None
2026	None (not found)	Full	None	Full	Full	None

2020 and 2021: no encierros were held.²²⁶

Three things stand out. The longest single-basis series, runners taken to the hospital complex, runs from 2013 to 2019 and has one further year, 2022. The Health Department series used here begins in 2019, the year before the pandemic, and has a runner count for three of its six years. And for 2024 to 2026 we found no runner count to turn any count into a rate.²²⁷

8.2 The gaps, and who may be able to close them

GA P	WHAT IS MISSING	WHAT IT DOES TO THIS REPORT	WHO MAY HOLD IT	REQ UEST ED	STATUS
G1	The Health Department's case definition, and tables of injured people by age, sex, origin, injury, route section, severity and any experience status	Every Health Department figure is undefined; no figure by experience or route is possible	Department of Health, hospital, SUE	Not yet	Open
G2	Raw runner counts, the counting method and its error; whether counts were made after 2023 and, if not, why	Every rate carries an assumed error; no rate after 2023	Ayuntamiento, Policía Municipal	Not yet	Open
G3	The runner survey's questions, sampling, response rate and weighting	Survey ranges assume a random sample that cannot be checked	Ayuntamiento, Protección Civil	Not yet	Open
G4	Cruz Roja and DYA counts for the encierro alone, with locations	Street-level care cannot be compared with hospital counts	Cruz Roja, DYA, SOS Navarra	Not yet	Open

²²⁶ See note 93.

²²⁷ Our reading of the map. Our calculation or reading. Comment: the 2019 Health Department figure is known from a 2022 article's comparison (note 102), not from a 2019 article.

GA P	WHAT IS MISSING	WHAT IT DOES TO THIS REPORT	WHO MAY HOLD IT	REQ UEST ED	STATUS
G5	A 2006 university compilation of basic data on the encierros, 1980 to 2005 (García Olaverri and others, Universidad Pública de Navarra), found in Dialnet and not yet read	Earlier years may be documented in a source we have not seen	Universidad Pública de Navarra; libraries	n/a	Open
G6	Health Department totals for 2010 to 2018; out-of-hospital encierro cases in 2025; the Department's own notes	Gaps and one non-comparable year in the series	Department of Health	Not yet	Partly closed (2024 found)
G9	A search of Spanish-language research databases	Hospital series published in Spanish could have been missed	Dialnet, SciELO	n/a	Closed for this version: both searched on 4 October 2026 (see G5)
G10	The criteria behind the city's list of deaths	The list's scope is undocumented	Ayuntamiento	Not yet	Open
G11	Any evaluation of a safety measure	No effect can be stated	Ayuntamiento, regional government	Not yet	Open
G13	Per-run injury and runner counts for more years	Whether injuries rise with crowd size or late in the fiesta cannot be tested	Department of Health, city	Not yet	Open
G14	Whether the 2025 count includes out-of-hospital cases	2025 cannot be compared with 2024 and 2026	Department of Health	Not yet	Open
G15	Why 17,126 is given as the total for both 2014 and 2017	One denominator may be wrong	Ayuntamiento, Policía Municipal	Not yet	Open
G16	An official definition of a horn wound	Counts differ by one or two in four years	Department of Health	Not yet	Open
G17	Year-by-year hospital admissions caused by the run	This report has admissions for five years	Department of Health, hospital	Not yet	Open

8.3 What would change the conclusions most

In order: the Health Department's definition and tables (G1), which would turn the report's strongest figures from press relays into measured counts and could, for the first time, show injury by experience or by route section; the city's raw counts and method (G2), which would replace an

assumed error with a real one and could give rates after 2023; and the first-aid organisations' encierro-only counts (G4), which would show how much harm never reaches a hospital.²²⁸

8.4 Requests sent

No requests had been sent when this version was published. Requests to the bodies named above, made under Navarra's and Spain's transparency laws, and any replies, will be reported in later versions.²²⁹

9. How confident we are

Every key figure in this report carries two kinds of statement about uncertainty: a range (how far the number itself could be from the truth) and a plain sentence about the quality of the evidence behind it.²³⁰ This section brings the second kind together.

9.1 Three layers, in plain words

Confidence in any rate here depends on three things (section 4.4): chance, which the statistical range covers; what was not counted or was counted wrongly, which only stated assumptions can explore; and whether the event stayed the same from year to year, which it did not.²³¹ In the Pamplona record, the third layer is the largest. The random error within one year is smaller than the differences between years and between definitions.²³²

9.2 Certainty by question

The ratings below use four plain labels for our conclusions (established, probable, uncertain, unknown) and an overall certainty from very low to high, adapted by analogy from the GRADE approach used in health research.²³³ "Assurance" says how much is known about how the source counted, from A0 (nothing documented) to A3 (fully documented).²³⁴

²²⁸ Encierro's method document, section 8.3 (ranking by what would most raise credibility). Comment: the ranking is a judgement. A reader who thinks severity or long-term outcomes matter more than counts would rank G17 higher.

²²⁹ Ley Foral 5/2018, de 17 de mayo, de Transparencia, acceso a la información pública y buen gobierno (Navarra), <https://www.boe.es/eli/es-nc/lf/2018/05/17/5/con> ; Ley 19/2013, de 9 de diciembre, de transparencia, acceso a la información pública y buen gobierno, <https://www.boe.es/eli/es/l/2013/12/09/19/con> ; accessed 4 October 2026 (consolidated texts listed). Comment: requests, and any replies, will be reported in later versions.

²³⁰ Encierro's method document, section 6.3, following van der Bles et al. 2019 (note 72): "direct" uncertainty is expressed as a range around a number; "indirect" uncertainty is a statement about the quality of the evidence. The paper reports that people interpret verbal probability words very differently, which is why this report avoids words such as "likely" or "rare" about rates and gives ranges instead.

²³¹ See note 72.

²³² See note 75.

²³³ Encierro's method document, section 6.4 (conclusion labels) and 5A.7 (certainty by question, provisional). GRADE Working Group framework as summarised by BMJ Best Practice, "What is GRADE?", <https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/>, Read in summary only. Comment: GRADE rates certainty in effect estimates as high, moderate, low or very low, lowering it for risk of bias, inconsistency, indirectness, imprecision and publication bias. This report applies the same vocabulary to descriptive counts by analogy; GRADE itself was not designed for that, and the ratings are our judgement.

²³⁴ Encierro's method document, section 5A.2 and 5A.7, after the UK Office for Statistics Regulation's Quality Assurance of Administrative Data toolkit (note 78). Comment: every source in this report is A0 or A1 because no counting body has published its definitions or checks; a published method would raise it.

QUESTION	SOURCE ASSURANCE	MAIN LIMITS	OVERALL CERTAINTY	LABEL
Runners taken to the hospital complex per run-start (2013 to 2017, and 2018 to 2019)	A0 to A1: agency tallies of the Department's bulletins	Press relay; counts people taken to one hospital, not all injured; runner-count error; years vary	Low to moderate	Probable ²³⁵
Horn wounds: about six a fiesta; per run-start, by period	A0 to A1	Small counts; sources differ by one or two in four years; no published definition found	Low to moderate	Probable ²³⁶
Health Department injured per run-start, in each of 2019, 2022 and 2023	A0 to A1	No published definition found; provisional counts; press relay	Low to moderate for each year; very low for a typical year	Probable for each year; Unknown for a typical year ²³⁷
Admitted to hospital because of the run	A1	Four years with a runner count; counted on the day	Low	Uncertain ²³⁸
Deaths recorded on the city's list	A1	Inclusion criteria not found published	High for the list itself	Established ²³⁹
Share of first-time runners in the city's surveys	A0 to A1	Survey design not found published; years differ	Low	Probable that it ranged from about 43 to 65 percent in 2013 to 2019 ²⁴⁰
Whether first-timers are hurt more often	None found	No source found	No data found	Unknown ²⁴¹
Whether injuries rise with crowd size or late in the fiesta	A0	One year of paired counts	Very low	Unknown (hypothesis only) ²⁴²

²³⁵ Notes 20, 121, 122, 125 and 127. Comment: rated low to moderate because the yearly figures fall within a narrow range in both periods and no clear trend was found, but every figure is a press tally of bulletins we could not see, of one level of harm only.

²³⁶ Notes 140, 141, 142 and 8.

²³⁷ Notes 102, 104, 110, 111. Comment: each year's figure is reasonably secure on the Department's own definition, which we did not find published, though provisional on the day and relayed by the press; the threefold difference between years means none of them stands for a typical year.

²³⁸ Notes 144, 149 and 6.

²³⁹ See note 9.

²⁴⁰ Notes 172, 173, 174, 175, 176, 177, 178, 15, 49 and 181.

²⁴¹ See note 15.

²⁴² Our exploratory per-run analysis of 2017 and 2018 (per-run runner counts, note 90; per-run transfers for 2018, note 121), recorded in Encierro's research notes, available on request. Our calculation or reading. Comment: in 2017 the number taken to hospital each morning did not rise with that morning's runner count (rank correlation minus 0.08, eight runs), and the last two runs had the most transfers in both 2017 and 2018 despite small crowds. Eight data points from one year cannot support any statement; the pattern is listed as a question for more data (gap G13, section 8), not a finding.

QUESTION	SOURCE ASSURANCE	MAIN LIMITS	OVERALL CERTAINTY	LABEL
Risk to any one person	None found	No person-level denominator found	No data found	Unknown ²⁴³

9.3 What would raise confidence most

The Health Department's definitions and tables, the city's raw counts and method, and the first-aid organisations' encierro-only counts, in that order (section 8.3).²⁴⁴ Even with all three, the third layer would remain: a stable, well-counted past still describes the past.

9.4 The yardsticks used

None of the standards below was written for the encierro. Each is a recognised standard for one part of the problem, used by analogy: the quality dimensions of the European Statistics Code of Practice; the UK statistics regulator's toolkit for judging administrative data; the total-survey-error framework; the international guide to expressing measurement uncertainty and its simulation supplement; good practice in quantitative bias analysis; the distinction between counting what happened and inferring about another period; the GRADE certainty labels; exact interval methods; and the reporting logic of the STROBE and RECORD statements and the International Olympic Committee's injury-surveillance consensus. The note gives each reference; the report follows their logic and does not claim compliance with any of them.²⁴⁵

10. Context

10.1 How the run has changed

The encierro of 2026 is not the encierro of 2013. The rules and access to the route have changed, and so has the counting.²⁴⁶

- **The ordinance.** Since 2014 a city ordinance has set the rules on the route: a minimum age of 18, no entry after the closing of access, no running under the influence of drink or drugs, no unsuitable footwear, no recording devices without authorisation, no touching the bulls.²⁴⁷

Breaches are fined under Navarra's law on public shows and recreational activities (Ley Foral

²⁴³ See note 209.

²⁴⁴ See note 228.

²⁴⁵ References, each confirmed against Crossref on 4 October 2026 unless stated: European Statistics Code of Practice, Eurostat, <https://ec.europa.eu/eurostat/web/quality/european-quality-standards/european-statistics-code-of-practice> (page listed); UK regulator's toolkit (note 78); Groves RM, Lyberg L, "Total survey error: past, present and future", Public Opinion Quarterly 2010;74(5):849 to 879, <https://doi.org/10.1093/poq/nfq065>; Lash et al. 2014 (note 73); Deming 1975 (note 72); GRADE (note 233); Garwood 1936 and Brown, Cai and DasGupta 2001 (note 66); Benchimol EI, et al., "The REporting of studies Conducted using Observational Routinely-collected health Data (RECORD) statement", PLOS Medicine 2015;12(10):e1001885, <https://doi.org/10.1371/journal.pmed.1001885>; STROBE checklists, <https://www.strobe-statement.org/checklists/>; IOC consensus (note 2). Comment: the report is built on the logic of these standards and does not claim compliance with any of them.

²⁴⁶ Notes 247, 248, 249, 250, 251, 252, 253 and 254 and Encierro's method document, section 5A.5 ("stability, the condition for any extrapolation"). Our calculation or reading. Comment: listed so that readers can see why a past year is not a stand-in for another year.

2/1989), from up to 600 euros for minor breaches to 6,001 to 60,000 euros for very serious ones.²⁴⁸ The city reported 14 sanctions in 2017 and 5 in 2026.²⁴⁹

- **The 2026 changes.** In 2026 the city stopped runners standing still in the bullring before the bulls arrive, limited access to the route to the Plaza Consistorial, and moved entry to the route, in the city's words, "from 7:15 to 7:30"; the ordinance already said that no runner may enter the route after 7:30.^{250,251}
- **The street surface.** Since a trial in 2005, and every year from 2006 except 2020 and 2021, the city has treated part of the route with an anti-slip product the night before the runs, about 1,500 litres over about 1,875 square metres from Santo Domingo through the Mercaderes bend to Estafeta.²⁵² The city gives the aim as preventing both the bulls and the runners from slipping on that stretch.²⁵³
- **The barriers.** A double wooden fence runs along about 850 metres of the route, built each year from late May to early July, both to separate spectators from the herd and to give runners a refuge.²⁵⁴

²⁴⁷ Ayuntamiento de Pamplona, Ordenanza municipal del encierro, Boletín Oficial de Navarra no. 123, 25 June 2014, amended in no. 130, 4 July 2014, https://www.pamplona.es/system/files/files-migrated/VARIOS/ordenanza_encierro.pdf, accessed 4 October 2026 (exact text of the articles retrieved with a retrieval tool). Measured figure. Comment: article 4.4, no one under eighteen may take part; article 4.2, from 07:30 only runners may remain on the route, and no one wishing to run may enter after 07:30; article 4.11 lists prohibited conduct, including being on the route drunk or under the effect of drugs (f), unsuitable footwear such as heels, flip-flops, sandals or clogs (g), touching the animals or catching their horns except to prevent a goring (k), and using any image or sound recording device, including mobile phones, without authorisation (n).

²⁴⁸ Ley Foral 2/1989, de 13 de marzo, reguladora de espectáculos públicos y actividades recreativas (Navarra), article 26, Lexnavarra, <https://www.lexnavarra.navarra.es/detalle.asp?r=2587>, accessed 4 October 2026 (exact text retrieved with a retrieval tool). Measured figure. Comment: very serious breaches, 6,001 to 60,000 euros; serious, 601 to 6,000 euros; minor, up to 600 euros. The ordinance itself sets no amounts.

²⁴⁹ Diario de Navarra, 16 July 2017 (note 90, Read in full): 14 sanctions in 2017; Ayuntamiento de Pamplona, "Balance San Fermín 2026", <https://www.pamplona.es/actualidad/noticias/BalanceSanFermín2026>, Read in full: 5 in 2026 (two for touching or calling the bulls, one recording device, one standing in fenced areas or doorways, one door left open). Measured and reported figures.

²⁵⁰ Ayuntamiento de Pamplona, 29 May 2026 (note 74): "La entrada al recorrido del Encierro pasa de las 7:15 a las 7:30 horas", access "exclusivamente desde la Plaza Consistorial", and a ban on runners who enter the bullring before the bulls arrive remaining in the ring. Measured figure.

²⁵¹ Ordinance article 4.2 (note 247) and the 2026 release (note 250). Comment: the ordinance sets 07:30 as the time after which no runner may enter; the 2026 release moves the time for entering the route from 7:15 to 7:30. The 2021 video-tracking study (note 25) reports that runners were admitted from 7:15 in 2019.

²⁵² Ayuntamiento de Pamplona, "La aplicación de antideslizante en el recorrido del encierro cumple veinte años", 1 July 2026, <https://www.pamplona.es/en/node/78543>, accessed 4 October 2026 (exact sentences retrieved with a retrieval tool); Noticias de Navarra, 3 July 2026, <https://www.noticiasdenavarra.com/san-fermin/2026/07/03/aplicados-1-500-litros-antideslizante-11280295.html>, Read in full. Measured and reported figures. Comment: about 1,500 litres over about 1,875 square metres, from the end of the Santo Domingo slope to a few metres past the Mercaderes bend; first trial 2005, routine from 2006, except the cancelled fiestas of 2020 and 2021. The contractor's name appears in the press article and is not repeated here.

²⁵³ Same city release as 252: the stated aim is to stop "los toros y las personas que corren" slipping on that stretch and creating risky situations. Comment: neither source gives an effect on injuries. Diario de Navarra's 2024 analysis said the surface "keeps working" although bulls fell at the Mercaderes bend on the first two days (note 137); that is a reporter's observation, not a measurement.

²⁵⁴ Ayuntamiento de Pamplona, "Comienza el montaje del doble vallado de seguridad que hace posible los Encierros", 31 May 2024, <https://www.pamplona.es/en/node/66343>, accessed 4 October 2026 (exact sentences retrieved with a retrieval tool). Measured figure. Comment: about 900 posts, 2,700 planks and 70 doors along the 850 metres of the run, assembled until 6 July; the same carpentry firm has built it since 1992.

- **The route's length.** Sources give 875 metres, 848.6 metres and 825 metres.²⁵⁵ This report does not use the length in any calculation.

No evaluation of whether any of these measures changed the number or severity of injuries was found.²⁵⁶

10.2 What researchers have studied

Three pieces of research bear on the encierro directly, and none is a count of injuries.

- **How runners move.** A 2021 peer-reviewed study tracked runners on video during two runs and showed that falls clustered at the moment the bulls passed, when crowd speed and density peaked (section 5.7).²⁵⁷
- **What experts think matters.** A 2008 peer-reviewed study asked 55 experts to rate the risk to runners in different scenarios. They rated a runner's present condition (sleep, alcohol, drugs), experience, knowledge of the rules and fitness as the most influential factors. The study measured expert opinion, not injury, and was financed by a private company that owned the resulting tool.²⁵⁸ Its authors said that the historical records available to them covered only the injured, which is why they turned to expert judgment; that remains true of the records we found.²⁵⁹
- **The medical operation.** A 2020 article by a member of the bullring's medical team describes the infirmary and the care chain, and gives a five-year total of hospital transfers without stating which five years.²⁶⁰

Hospital series from bull events in other towns exist, such as a study of 387 patients with horn wounds at the Hospital General de Castellón, but they count different events with different participants and are not used.²⁶¹

10.3 How other mass gatherings report

Medical teams at large events usually report two figures per 1,000 attendees: the number of people who presented for care and the number taken to hospital.²⁶² This report follows that convention by

²⁵⁵ 875 m: the 2021 video-tracking study (note 25). 848.6 m: Diario de Navarra, 16 July 2017 (note 90). 825 m: the 2008 expert-judgment study (note 26). Comment: the figures may measure different start or end points; not resolved.

²⁵⁶ See note 16.

²⁵⁷ See note 25.

²⁵⁸ See note 26.

²⁵⁹ Note 26; the abstract states that the lack of high-quality historical data prevented a sufficiently detailed statistical model. Comment: the strongest peer-reviewed statement that the historical record is inadequate for estimating individual risk.

²⁶⁰ Álvarez Caperochipi, "Operativo sanitario de encierros y corridas: la enfermería de la plaza", Pregón Siglo XXI no. 56 (2020), pp. 113 to 117, indexed in Dialnet; Read in full from the published PDF. Reported figure, partly untraced. Comment: 249 hospital transfers "in the last five years", 38 of them horn wounds (15 percent); window not stated. If the window were 2015 to 2019, the agency series in section 5.2 gives 232 transfers to the hospital complex and 39 horn wounds; the difference may be transfers to other centres. That is our inference, not the author's statement, and the figure is not used for any rate.

²⁶¹ Martínez Ramos D, "Heridas por asta de toro en el Hospital General de Castellón: estudio de 387 pacientes", Cirugía Española 2006;80(1):16 to 22, indexed in Dialnet, <https://dialnet.unirioja.es/servlet/articulo?codigo=2017236>, listed 4 October 2026 (full text not available there; not read). Comment: hospital series from bull events in other Spanish towns (for example Tudela and Castellón) describe patients at other events, with no participant counts comparable to Pamplona's and different event formats; they are not used.

²⁶² Arbon P, Bridgewater FHG, Smith C, "Mass gathering medicine: a predictive model for patient presentation and transport rates", Prehospital and Disaster Medicine 2001;16(3):150 to 158, <https://doi.org/10.1017/s1049023x00025905> (confirmed

showing rates per 1,000 run-starts. A proposed template for post-event medical reports groups what should be recorded into four areas: the event, its hazards, the medical capacity, and the clinical outcomes.²⁶³ For the encierro the event and capacity are partly documented, the hazards are described in words and one video study, and the clinical outcomes are published as counts without definitions.²⁶⁴

11. Limitations, and how not to use this report

These are counts of what happened in past years. They describe the event as a whole, not the chance of anything happening to any one person, and they do not predict a future run.²⁶⁵

11.1 Limitations

- The figures come from public bodies and press reports. We have not audited them, and we could not check the Health Department's figures against its own bulletins: the navarra.es press room could not be made to load at the time of reporting, despite the use of several different devices, and the site is presumed to have been down, temporarily.²⁶⁶
- We found no published case definition from any counting body. Counts from different bodies overlap and cannot be added.^{267,268}
- The city counted run-starts from police camera images taken just before each run. The count is approximate and changed method in 2018, and we did not find a count for 2024 to 2026, so this report has no denominator for those years.^{269,270,271}
- The runner surveys were interviews on the route, and we did not find their design published.²⁷²
- No public source we found links injury to whether someone was running for the first time, and we have not estimated it.²⁷³
- We found no evaluation of whether any safety measure changed the number of injuries.²⁷⁴
- No death in the encierro was recorded in any source we read after 2009; a run of years without a death does not show that the risk of death is zero.²⁷⁵

against Crossref; read in summary). Comment: the "patient presentation rate" and "transport to hospital rate" per 1,000 attendees are the standard measures in mass-gathering medicine.

²⁶³ Turris SA, Rabb H, Chasmar E, et al., "Measuring the masses: a proposed template for post-event medical reporting", Prehospital and Disaster Medicine 2021;36(2):218 to 226, <https://doi.org/10.1017/s1049023x21000091> (confirmed against Crossref; read in summary).

²⁶⁴ Encierro's method document, section 6.1 (mass-gathering template check). Our calculation or reading.

²⁶⁵ See note 80.

²⁶⁶ See note 54.

²⁶⁷ See note 4.

²⁶⁸ See note 37.

²⁶⁹ See note 21.

²⁷⁰ See note 43.

²⁷¹ See note 44.

²⁷² See note 22.

²⁷³ See note 15.

²⁷⁴ See note 16.

²⁷⁵ See note 166.

- Some figures rest on a single press report, and some pages could be read only by retrieving their exact sentences with a retrieval tool; the notes say which.²⁷⁶
- A 2006 university compilation of basic data for 1980 to 2005, found in Dialnet, has not been read for this version.²⁷⁷
- This report has not been externally reviewed. Every source is given in full in the notes so that any reader can check each figure.²⁷⁸
- No requests for data had been made to the Health Department, the city or the first-aid organisations when this version was published.²⁷⁹
- Last verified: 4 October 2026. Version: 1.0.

11.2 How not to use this report

- Do not quote a figure without its basis and year. "71 injured" and "35 taken to hospital" are different counts, not a trend.²⁸⁰
- Do not compare figures from different bases, or from either side of the 2018 change in the runner count, as if they measured the same thing.²⁸¹
- Do not read a rate per run-start as one person's chance of being hurt.²⁸²
- Do not read a period without a recorded death, or any zero count, as no risk.²⁸³
- Do not read a past year, or an average of past years, as a forecast.²⁸⁴
- Do not use any figure here to suggest that the run is safe, safer than something else, or more dangerous than something else. The report makes no such comparison.²⁸⁵

11.3 Limits of our own method

Section 4.6 describes them: a grading scheme adapted from other fields, a judgement about counting error, press relays we could not verify, and references read only in summary.

12. Corrections, versions and updates

- **Version.** This is version 1.0, published on 4 October 2026. Each later version will be dated, and earlier versions kept.²⁸⁶

²⁷⁶ Comment: figures that could be confirmed only by retrieving the page's exact sentences with a retrieval tool, because the page would not open in a browser, say so in their notes (for example notes 94, 123, 247).

²⁷⁷ See note 29.

²⁷⁸ See note 77.

²⁷⁹ See note 55.

²⁸⁰ See note 10.

²⁸¹ See note 43.

²⁸² See note 11.

²⁸³ See note 224.

²⁸⁴ See note 74.

²⁸⁵ Comment: the words "safe" and "safer" appear in this report only in this warning. Encierro never describes the run as safe.

²⁸⁶ Comment: the commitments follow the practice of official statistics producers, who are expected to explain revisions candidly and to publish quality information with their figures: UK Statistics Authority, Code of Practice for Statistics, Edition 3.0, 3 November 2025, <https://osr.statisticsauthority.gov.uk/publications/the-code-of-practice-for-statistics/pages/3/>, accessed 3 October 2026. Encierro is not a producer of official statistics and applies the Code's principles voluntarily, without any claim of

- **Reporting an error.** Write to aupa@encierro.com. We aim to acknowledge a credible report within two working days and to correct a confirmed error within seven.²⁸⁷
- **How corrections appear.** A material correction is shown at the top of the report with its date and what changed. No correction is made silently.²⁸⁸
- **If a source changes.** If a body revises or withdraws a figure we use, we say so beside the figure and in the change log, and recalculate.²⁸⁹
- **Updates.** The next full update is planned after the 2027 fiesta, adding new counts and any new publication, rerunning the calculations and regrading the sources.²⁹⁰
- **Unscheduled review.** A death in the encierro, a new official dataset, a change to the ordinance or the access rules, a new peer-reviewed study, or the city resuming its runner counts or surveys will each prompt a review.²⁹¹
- **Review.** This report has not been externally reviewed. Every source is given in full in the notes so that any reader can check each figure.²⁹²

Change log

DATE	VERSION	CHANGE
4 October 2026	1.0	First publication

13. How to cite this report

- **Cite as:** Clancey, D. (2026). *How dangerous is the running of the bulls in Pamplona? What the public records show and what they cannot* (Encierro Research Report No. 1, Version 1.0). Encierro. <https://encierro.com/blog/the-encierro/running-of-the-bulls-injuries-and-deaths/>²⁹³
- **Data and calculations.** Every figure, its source and its calculation are given in the notes. The calculation script and Encierro's method document are available on request from aupa@encierro.com.²⁹⁴
- **Reuse.** Copyright 2026 Encierro. Brief quotation with attribution and a link is welcome. Official figures remain those of the bodies that produced them.²⁹⁵
- **Contact.** aupa@encierro.com.

endorsement.

²⁸⁷ See note 286.

²⁸⁸ See note 286.

²⁸⁹ Our addition. Comment: modelled on the notices journals publish when a source's reliability is in question; the specific publishers' policies were seen only as search results and are not cited as authority.

²⁹⁰ See note 286.

²⁹¹ See note 286.

²⁹² See note 77.

²⁹³ Comment: the stable address of the report is the blog post that carries it; the PDF edition is linked from that post.

²⁹⁴ Comment: the figures, their sources and our calculations are given in full in the notes. No separate data file is published with version 1.0; the calculation script and Encierro's method document are available on request from aupa@encierro.com. No table allows an injured person to be identified.

²⁹⁵ Comment: official figures remain those of the bodies that produced them. No third-party figure or photograph is reproduced in this report.

References

APA 7, alphabetical by first author. Every source cited in a footnote appears here, and nothing appears here that is not cited.

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ABOUT ENCIERRO

Encierro is a team of active bull runners in Pamplona who have offered instruction and education on the encierro since 2007. We do not encourage running; we educate those who are considering it. This report is for information. Decisions about taking part, and the risks involved, remain the reader's own.

HOW TO CITE THIS REPORT

Clancey, D. (2026). *How dangerous is the running of the bulls in Pamplona? What the public records show and what they cannot* (Encierro Research Report No. 1, Version 1.0). Encierro. <https://encierro.com/blog/the-encierro/running-of-the-bulls-injuries-and-deaths/> · Corrections: aupa@encierro.com