

Links to the key Peruvian national databases used and database map for:

Ivermectin for COVID-19 in Peru: 14-fold reduction in nationwide excess deaths, $p < 0.002$ for effect by state, then 13-fold increase after ivermectin use restricted (Chamie JJ, Hibberd JA, Scheim DE)

Although COVID-19 case fatalities are mentioned peripherally in this paper as noted, all natural cause excess deaths is a more reliable figure, and this is used in all analyses. As cited in footnote number 12, these data are downloaded from the National Death Information System (SINADEF), *Ministerio de Salud de Peru* (Ministry of Health of Peru), at this link: cloud.minsa.gob.pe/s/NctBnHXDnocgWAg/download. That link downloads a zip file, and extracting that zip file yields the data file named SINADEF_DATOS_ABIERTOS_mmddyyyy.xlsx, where *mm* is numeric month, *dd* is day and *yyyy* is year. This Peruvian data repository currently provides this download file, which contains data records that track deaths from January 1, 2017 through a few days prior to the retrieval date. The current file contains about 593,000 records, one for each death in Peru since January 1, 2017.

As noted in the paper, retroactive adjustments can occasionally be made to add a record for a death, for example, of someone who died in a remote location and whose death became known days afterwards. Such retroactive adjustments are rare and have only incidental impact on the data analysis. Nevertheless, for precision, the authors saved frozen snapshots from the two key periods for which analysis was performed. Results on deaths for all ages and all states of Peru through February 1, 2021, as presented in Figure 1A, were obtained from the database of February 14, 2021; we checked our data files and found a frozen database that we saved from shortly after then, SINADEF_DATOS_ABIERTOS_23022021.csv. The authors have made this file publicly retrievable for any use appropriate to such anonymized public record content, including data validation, at the file in this Dryad data package with that name.

All other data analyses, the core results of this paper, were derived using the database frozen on December 13, 2020, SINADEF_DATOS_ABIERTOS_13122020.csv.

This is likewise publicly retrievable for any use appropriate to such anonymized public record content, including data validation, at the file in this Dryad data package with that name.

Note that both of these files are exactly as downloaded on the dates of the suffix of their respective file names. The field headers are in the original Spanish language; the highest degree of data integrity has been maintained by depositing these frozen data files unaltered from the Peruvian SINADEF database.

The structure of this database with respect to the analysis performed here is quite simple. For column R (see the column headers through column R below), “Muerte Violenta,” any values other than “Sin Registro” are excluded. This excludes deaths from e.g. homicides, suicides, or automobiles accidents. Column J records the state of residence of the deceased, one of 25 states of Peru (see the paper’s discussion on use of the term “state” for these divisions). Records with either the value “extranjero” (outside of Peru) or “sin registro” (not reported) are excluded. Column M, “Fecha,” is the date of death. Column D, “Edad,” is the age at death, and column E, “Tiempo Edad,” is units of time for D (e.g., it could be “DIAS,” days, for an infant death). For all analyses except for all-Peru excess deaths in Fig 1A through February 1, 2021, only records for subjects age ≥ 60 were used. Thus, selection was performed for column E=“AÑOS” and column $D \geq 60$. Although this database contains 31 total data fields, only these five columns, D, E, J, M and R, were used in this analysis.

As reported in the paper, total monthly (natural) all-cause deaths fluctuated with a mean value of 5.2% and a standard deviation of 3.8% for the months from January 2017 through February 2020, prior to the pandemic. Because beginning March 1, 2020, during the period of the pandemic, fluctuations in such all-cause deaths were much greater than that, on the order of 200%, it was reasonable to use the average daily value of all-cause deaths of January through February 2020, state by state, as a baselines for determining excess all-cause deaths. Note that all daily averages of excess-all cause deaths are 7-day moving averages. Any of the analyses presented in this paper can thus be validated directly from these data sources. And to recap, except for the aggregate national statistics presented in Figure 1A for excess deaths on August 1 and November 1, 2020 and February 1, 2021, all analyses were performed from just one excel spreadsheet per the link above for the frozen database of December 13, 2020.

Image of headers of columns A through R and sample data from the SINADEF DATOS ABIERTOS database

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R			
Nº	TIPO SEGL	SEXO	EDAD	TIEMPO	ESTAD	NIVEL	COD# U	PAIS	DOM	DEPARTAMENTO	PROVINCIA	DISTRITO	FECHA	AÑO	MES	TIPO L	INSTI	MUERTE	VIOLE	NE
1	SIS	MASCULIN	4 AÑOS	SOLTEF	IGNOF	92-33-2	PERU	SAN MARTIN	MARISCAL	JUANJUI		1/17/2020	2020	1	EESS	GOBIÉ	SIN REGISTRO	NC		
2	SIS	FEMENIN	86 AÑOS	SOLTEF	PRIM	92-33-2	PERU	SAN MARTIN	LAMAS	TABALOSC		1/3/2020	2020	1	DOMI	SIN R	SIN REGISTRO	NC		
3	IGNORAD	MASCULIN	38 AÑOS	IGNOR	IGNOF	93-32-0	FILIPINAS	EXTRANJERO	EXTRANJE	EXTRANJE		1/19/2020	2020	1	OTRO	SIN R	SIN REGISTRO	SI		
4	USUARIO	FEMENIN	64 AÑOS	SOLTEF	PRIM	92-33-1	PERU	LIMA	LIMA	SAN JUAN		1/6/2020	2020	1	DOMI	SIN R	SIN REGISTRO	SI		
5	IGNORAD	MASCULIN	20 AÑOS	SOLTEF	IGNOF	92-33-2	PERU	CALLAO	CALLAO	BELLAVIST		1/13/2020	2020	1	EESS	GOBIÉ	HOMICIDIO	SI		
6	IGNORAD	MASCULIN	1 DIAS	SIN RE	IGNOF	SIN REC	SIN REGIS	SIN REGISTRO	SIN REGIS	SIN REGIS		1/4/2020	2020	1	EESS	ESSAL	SIN REGISTRO	SI		
7	IGNORAD	MASCULIN	36 AÑOS	SOLTEF	SUPER	92-33-1	PERU	LIMA	LIMA	ATE		1/26/2020	2020	1	DOMI	SIN R	SIN REGISTRO	SI		
8	SIS	MASCULIN	36 AÑOS	SOLTEF	SECUN	92-33-1	PERU	LIMA	LIMA	CARABAY		1/23/2020	2020	1	EESS	MINS,	HOMICIDIO	SI		
9	IGNORAD	MASCULIN	86 AÑOS	CASAD	SECUN	92-33-1	PERU	LIMA	LIMA	LA MOLIN		1/29/2020	2020	1	EESS	PRIVA	NO SE CONOCE	SI		
10	IGNORAD	MASCULIN	64 AÑOS	CASAD	IGNOF	92-33-1	PERU	LIMA	LIMA	RIMAC		1/22/2020	2020	1	EESS	MINS,	SIN REGISTRO	SI		
11	IGNORAD	MASCULIN	42 AÑOS	SOLTEF	IGNOF	92-11-0	ECUADOR	EXTRANJERO	EXTRANJE	EXTRANJE		1/4/2020	2020	1	EESS	MINS,	HOMICIDIO	SI		
12	SIS	MASCULIN	40 AÑOS	SOLTEF	SECUN	92-33-0	PERU	CUSCO	CUSCO	CUSCO		1/24/2020	2020	1	EESS	GOBIÉ	SIN REGISTRO	NC		