Supplementary Figure 1. Model fits for each cause group, showing redistributed data, initial prediction before squeezing, and final estimates with uncertainty after squeezing.
Communicable, maternal, neonatal, and nutritional diseases

Jambi Males

Sumatera Selatan Males

Bengkulu Males

Lampung Males

Communicable, maternal, neonatal, and nutritional diseases

Jambi Females

Sumatera Selatan Females

Bengkulu Females

Lampung Females

Aim 2 Supplementary Figures
Communicable, maternal, neonatal, and nutritional diseases

Bangka Belitung Males

Communicable, maternal, neonatal, and nutritional diseases

Bangka Belitung Females

Communicable, maternal, neonatal, and nutritional diseases

Kepulauan Riau Males

Communicable, maternal, neonatal, and nutritional diseases

Kepulauan Riau Females

Communicable, maternal, neonatal, and nutritional diseases

DKI Jakarta Males

Communicable, maternal, neonatal, and nutritional diseases

DKI Jakarta Females

Communicable, maternal, neonatal, and nutritional diseases

Jawa Barat Males

Communicable, maternal, neonatal, and nutritional diseases

Jawa Barat Females
Communicable, maternal, neonatal, and nutritional diseases

- **Sulawesi Utara Males**
- **Sulawesi Utara Females**
- **Sulawesi Tengah Males**
- **Sulawesi Tengah Females**
- **Sulawesi Selatan Males**
- **Sulawesi Selatan Females**
- **Sulawesi Tenggara Males**
- **Sulawesi Tenggara Females**

**Aim 2 Supplementary Figures**
Aim 2 Supplementary Figures

Non-communicable diseases

DKI Jakarta Males

Non-communicable diseases

DKI Jakarta Females

Non-communicable diseases

Jawa Barat Males

Non-communicable diseases

Jawa Barat Females

Non-communicable diseases

Jawa Tengah Males

Non-communicable diseases

Jawa Tengah Females

Non-communicable diseases

DI Yogyakarta Males

Non-communicable diseases

DI Yogyakarta Females

[Graphs showing cause fraction against age for males and females in different regions, with bars indicating redistributed initial predictions and lines for final predictions after squeezing.]
Aim 2 Supplementary Figures

Non-communicable diseases
Maluku Males

Non-communicable diseases
Maluku Females

Non-communicable diseases
Maluku Utara Males

Non-communicable diseases
Maluku Utara Females

Non-communicable diseases
Papua Barat Males

Non-communicable diseases
Papua Barat Females

Non-communicable diseases
Papua Males

Non-communicable diseases
Papua Females
Aim 2 Supplementary Figures

Injuries Sulawesi Utara Males

Injuries Sulawesi Utara Females

Injuries Sulawesi Tengah Males

Injuries Sulawesi Tengah Females

Injuries Sulawesi Selatan Males

Injuries Sulawesi Selatan Females

Injuries Sulawesi Tenggara Males

Injuries Sulawesi Tenggara Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Injuries gorontalo Males

Injuries gorontalo Females

Injuries Sulawesi Barat Males

Injuries Sulawesi Barat Females

Injuries Maluku Males

Injuries Maluku Females

Injuries Maluku Utara Males

Injuries Maluku Utara Females
Aim 2 Supplementary Figures

Cirrhosis
Jawa Timur Males

Cirrhosis
Jawa Timur Females

Cirrhosis
Banten Males

Cirrhosis
Banten Females

Cirrhosis
Bali Males

Cirrhosis
Bali Females

Cirrhosis
Nusa Tenggara Barat Males

Cirrhosis
Nusa Tenggara Barat Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Chronic kidney disease

Aceh Males

Redistributed
Initial Prediction
Final Prediction after squeezing

Aceh Females

Sumatera Utara Males

Sumatera Utara Females

Sumatera Barat Males

Sumatera Barat Females

Riau Males

Riau Females

Chronic kidney disease

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Chronic kidney disease
Jawa Tengah Males

Chronic kidney disease
Di Yogyakarta Males

Chronic kidney disease
Jawa Timur Males

Chronic kidney disease
Banten Males

Redistributed
Final Prediction after squeezing

Chronic kidney disease
Jawa Tengah Females

Chronic kidney disease
Di Yogyakarta Females

Chronic kidney disease
Jawa Timur Females

Chronic kidney disease
Banten Females

Redistributed
Final Prediction after squeezing
Aim 2 Supplementary Figures

Chronic kidney disease
Sulawesi Utara Males

Chronic kidney disease
Sulawesi Utara Females

Chronic kidney disease
Sulawesi Tengah Males

Chronic kidney disease
Sulawesi Tengah Females

Chronic kidney disease
Sulawesi Selatan Males

Chronic kidney disease
Sulawesi Selatan Females

Chronic kidney disease
Sulawesi Tenggara Males

Chronic kidney disease
Sulawesi Tenggara Females
Aim 2 Supplementary Figures

Diabetes mellitus

Sulawesi Selatan Males

Diabetes mellitus

Sulawesi Selatan Females

Diabetes mellitus

Sulawesi Tenggara Males

Diabetes mellitus

Sulawesi Tenggara Females

Diabetes mellitus

Gorontalo Males

Diabetes mellitus

Gorontalo Females

Diabetes mellitus

Sulawesi Barat Males

Diabetes mellitus

Sulawesi Barat Females
Aim 2 Supplementary Figures

Drowning Jambi Males

Drowning Jambi Females

Drowning Sumatera Selatan Males

Drowning Sumatera Selatan Females

Drowning Bengkulu Males

Drowning Bengkulu Females

Drowning Lampung Males

Drowning Lampung Females
Aim 2 Supplementary Figures

Drowning
Bangka Belitung Males

Drowning
Bangka Belitung Females

Drowning
Kepulauan Riau Males

Drowning
Kepulauan Riau Females

Drowning
DKI Jakarta Males

Drowning
DKI Jakarta Females

Drowning
Jawa Barat Males

Drowning
Jawa Barat Females

Redistributed
Initial Prediction

Final Prediction after squeezing
Aim 2 Supplementary Figures

**Drowning**
- Papua Barat Males
- Papua Barat Females
- Papua Males
- Papua Females
- Aceh Males
- Aceh Females
- Sumatera Utara Males
- Sumatera Utara Females

Each graph shows the cause fraction for different genders and regions, with age on the x-axis and cause fraction on the y-axis. The graphs compare the redistributed results with the initial predictions and the final predictions after squeezing.
Aim 2 Supplementary Figures

Falls
Sumatera Barat Males

Falls
Sumatera Barat Females

Falls
Riau Males

Falls
Riau Females

Falls
Jambi Males

Falls
Jambi Females

Falls
Sumatera Selatan Males

Falls
Sumatera Selatan Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Falls
DKI Jakarta Males

Falls
DKI Jakarta Females

Falls
Jawa Barat Males

Falls
Jawa Barat Females

Falls
Jawa Tengah Males

Falls
Jawa Tengah Females

Falls
DI Yogyakarta Males

Falls
DI Yogyakarta Females
Aim 2 Supplementary Figures

Falls
Nusa Tenggara Timur Males

Falls
Nusa Tenggara Timur Females

Falls
Kalimantan Barat Males

Falls
Kalimantan Barat Females

Falls
Kalimantan Tengah Males

Falls
Kalimantan Tengah Females

Falls
Kalimantan Selatan Males

Falls
Kalimantan Selatan Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Interpersonal violence
Jawa Tengah Males

Interpersonal violence
Jawa Tengah Females

Interpersonal violence
DI Yogyakarta Males

Interpersonal violence
DI Yogyakarta Females

Interpersonal violence
Jawa Timur Males

Interpersonal violence
Jawa Timur Females

Interpersonal violence
Banten Males

Interpersonal violence
Banten Females
Aim 2 Supplementary Figures

Interpersonal violence
Bali Males

Interpersonal violence
Bali Females

Interpersonal violence
Nusa Tenggara Barat Males

Interpersonal violence
Nusa Tenggara Barat Females

Interpersonal violence
Nusa Tenggara Timur Males

Interpersonal violence
Nusa Tenggara Timur Females

Interpersonal violence
Kalimantan Barat Males

Interpersonal violence
Kalimantan Barat Females
Aim 2 Supplementary Figures

Interpersonal violence
Gorontalo Males

Interpersonal violence
Gorontalo Females

Interpersonal violence
Sulawesi Barat Males

Interpersonal violence
Sulawesi Barat Females

Interpersonal violence
Maluku Males

Interpersonal violence
Maluku Females

Interpersonal violence
Maluku Utara Males

Interpersonal violence
Maluku Utara Females
Aim 2 Supplementary Figures

Interpersonal violence
Papua Barat Males

Interpersonal violence
Papua Barat Females

Interpersonal violence
Papua Males

Interpersonal violence
Papua Females

Other unintentional injuries
Aceh Males

Other unintentional injuries
Aceh Females

Other unintentional injuries
Sumatera Utara Males

Other unintentional injuries
Sumatera Utara Females
Aim 2 Supplementary Figures

Other unintentional injuries
DKI Jakarta Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
DKI Jakarta Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
Jawa Barat Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
Jawa Barat Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
Jawa Tengah Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
Jawa Tengah Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
DI Yogyakarta Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Other unintentional injuries
DI Yogyakarta Females

Redistributed
Final Prediction after squeezing
Initial Prediction
Aim 2 Supplementary Figures

Other unintentional injuries
Nusa Tenggara Timur Males

Other unintentional injuries
Nusa Tenggara Timur Females

Other unintentional injuries
Kalimantan Barat Males

Other unintentional injuries
Kalimantan Barat Females

Other unintentional injuries
Kalimantan Tengah Males

Other unintentional injuries
Kalimantan Tengah Females

Other unintentional injuries
Kalimantan Selatan Males

Other unintentional injuries
Kalimantan Selatan Females

- Redistribution
- Initial Prediction
- Final Prediction after squeezing
Aim 2 Supplementary Figures

Other unintentional injuries
Sulawesi Selatan Males

Other unintentional injuries
Sulawesi Selatan Females

Other unintentional injuries
Sulawesi Tenggara Males

Other unintentional injuries
Sulawesi Tenggara Females

Other unintentional injuries
Gorontalo Males

Other unintentional injuries
Gorontalo Females

Other unintentional injuries
Sulawesi Barat Males

Other unintentional injuries
Sulawesi Barat Females
Aim 2 Supplementary Figures

Self-harm
Aceh Males

Self-harm
Aceh Females

Self-harm
Sumatera Utara Males

Self-harm
Sumatera Utara Females

Self-harm
Sumatera Barat Males

Self-harm
Sumatera Barat Females

Self-harm
Riau Males

Self-harm
Riau Females
Aim 2 Supplementary Figures

Transport injuries

Jawa Timur Males

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Banten Males

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Bali Males

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Nusa Tenggara Barat Males

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Jawa Timur Females

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Banten Females

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Bali Females

- Initial Prediction
- Final Prediction after squeezing
- Redistributed

Nusa Tenggara Barat Females

- Initial Prediction
- Final Prediction after squeezing
- Redistributed
Aim 2 Supplementary Figures

Transport injuries
Sulawesi Selatan Males

Transport injuries
Sulawesi Selatan Females

Transport injuries
Sulawesi Tenggara Males

Transport injuries
Sulawesi Tenggara Females

Transport injuries
Gorontalo Males

Transport injuries
Gorontalo Females

Transport injuries
Sulawesi Barat Males

Transport injuries
Sulawesi Barat Females
Maternal disorders
Bangka Belitung Females

Maternal disorders
Kepulauan Riau Females

Maternal disorders
DKI Jakarta Females

Maternal disorders
Jawa Barat Females

Maternal disorders
Jawa Tengah Females

Maternal disorders
DI Yogyakarta Females

Maternal disorders
Jawa Timur Females

Maternal disorders
Banten Females
Aim 2 Supplementary Figures

Maternal disorders
Sulawesi Utara Females

Maternal disorders
Sulawesi Tengah Females

Maternal disorders
Sulawesi Selatan Females

Maternal disorders
Sulawesi Tenggara Females

Maternal disorders
Gorontalo Females

Maternal disorders
Sulawesi Barat Females

Maternal disorders
Maluku Females

Maternal disorders
Maluku Utara Females
Aim 2 Supplementary Figures

Neoplasms

Lampung Males

Neoplasms

Lampung Females

Neoplasms

Bangka Belitung Males

Neoplasms

Bangka Belitung Females

Neoplasms

Kepulauan Riau Males

Neoplasms

Kepulauan Riau Females

Neoplasms

DKI Jakarta Males

Neoplasms

DKI Jakarta Females

- Redistributed
- Final Prediction after squeezing
Aim 2 Supplementary Figures

Neoplasms
Banten Males

Neoplasms
Banten Females

Neoplasms
Bali Males

Neoplasms
Bali Females

Neoplasms
Nusa Tenggara Barat Males

Neoplasms
Nusa Tenggara Barat Females

Neoplasms
Nusa Tenggara Timur Males

Neoplasms
Nusa Tenggara Timur Females
Neonatal encephalopathy due to birth asphyxia and trauma

Sumatera Selatan Males

Sumatera Selatan Females

Bengkulu Males

Bengkulu Females

Lampung Males

Lampung Females

Bangka Belitung Males

Bangka Belitung Females

Aim 2 Supplementary Figures
Neonatal encephalopathy due to birth asphyxia and trauma

Kepulauan Riau Males

Neonatal encephalopathy due to birth asphyxia and trauma

Kepulauan Riau Females

DKI Jakarta Males

DKI Jakarta Females

Jawa Barat Males

Jawa Barat Females

Jawa Tengah Males

Jawa Tengah Females
Neonatal encephalopathy due to birth asphyxia and trauma
Nusa Tenggara Barat Males

Neonatal encephalopathy due to birth asphyxia and trauma
Nusa Tenggara Barat Females

Neonatal encephalopathy due to birth asphyxia and trauma
Nusa Tenggara Timur Males

Neonatal encephalopathy due to birth asphyxia and trauma
Nusa Tenggara Timur Females

Neonatal encephalopathy due to birth asphyxia and trauma
Kalimantan Barat Males

Neonatal encephalopathy due to birth asphyxia and trauma
Kalimantan Barat Females

Neonatal encephalopathy due to birth asphyxia and trauma
Kalimantan Tengah Males

Neonatal encephalopathy due to birth asphyxia and trauma
Kalimantan Tengah Females
Neonatal encephalopathy due to birth asphyxia and trauma

Kalimantan Selatan Males

Kalimantan Selatan Females

Kalimantan Timur Males

Kalimantan Timur Females

Kalimantan Utara Males

Kalimantan Utara Females

Sulawesi Utara Males

Sulawesi Utara Females
Neonatal encephalopathy due to birth asphyxia and trauma

Sulawesi Barat Males

- Initial Prediction
- Final Prediction after squeezing

Sulawesi Barat Females

- Initial Prediction
- Final Prediction after squeezing

Maluku Males

- Initial Prediction
- Final Prediction after squeezing

Maluku Females

- Initial Prediction
- Final Prediction after squeezing

Maluku Utara Males

- Initial Prediction
- Final Prediction after squeezing

Maluku Utara Females

- Initial Prediction
- Final Prediction after squeezing

Papua Barat Males

- Initial Prediction
- Final Prediction after squeezing

Papua Barat Females

- Initial Prediction
- Final Prediction after squeezing
Aim 2 Supplementary Figures

Other neonatal disorders
Lampung Males

Other neonatal disorders
Lampung Females

Other neonatal disorders
Bangka Belitung Males

Other neonatal disorders
Bangka Belitung Females

Other neonatal disorders
Kepulauan Riau Males

Other neonatal disorders
Kepulauan Riau Females

Other neonatal disorders
DKI Jakarta Males

Other neonatal disorders
DKI Jakarta Females

Initial Prediction
Final Prediction after squeezing

Redistributed
Aim 2 Supplementary Figures

Preterm birth complications
Sumatera Utara Males

Preterm birth complications
Sumatera Utara Females

Preterm birth complications
Sumatera Barat Males

Preterm birth complications
Sumatera Barat Females

Preterm birth complications
Riau Males

Preterm birth complications
Riau Females

Preterm birth complications
Jambi Males

Preterm birth complications
Jambi Females

Initial Prediction
Final Prediction after squeezing

Redistributed
Aim 2 Supplementary Figures

Preterm birth complications
Nusa Tenggara Barat Males

Preterm birth complications
Nusa Tenggara Barat Females

Preterm birth complications
Nusa Tenggara Timur Males

Preterm birth complications
Nusa Tenggara Timur Females

Preterm birth complications
Kalimantan Barat Males

Preterm birth complications
Kalimantan Barat Females

Preterm birth complications
Kalimantan Tengah Males

Preterm birth complications
Kalimantan Tengah Females
Aim 2 Supplementary Figures

Preterm birth complications
Sulawesi Tengah Males

Preterm birth complications
Sulawesi Tengah Females

Preterm birth complications
Sulawesi Selatan Males

Preterm birth complications
Sulawesi Selatan Females

Preterm birth complications
Sulawesi Tenggara Males

Preterm birth complications
Sulawesi Tenggara Females

Preterm birth complications
Gorontalo Males

Preterm birth complications
Gorontalo Females
Aim 2 Supplementary Figures

Ischemic heart disease
Kepulauan Riau Males

Ischemic heart disease
Kepulauan Riau Females

Ischemic heart disease
DKI Jakarta Males

Ischemic heart disease
DKI Jakarta Females

Ischemic heart disease
Jawa Barat Males

Ischemic heart disease
Jawa Barat Females

Ischemic heart disease
Jawa Tengah Males

Ischemic heart disease
Jawa Tengah Females
Other cardiovascular and circulatory diseases

Aim 2 Supplementary Figures

Redistributed

Final Prediction after squeezing

Initial Prediction

Nusa Tenggara Barat Males

Nusa Tenggara Barat Females

Banten Males

Banten Females

Bali Males

Bali Females

Nusa Tenggara Timur Males

Nusa Tenggara Timur Females
Aim 2 Supplementary Figures

Other cardiovascular and circulatory diseases
Maluku Utara Males

Other cardiovascular and circulatory diseases
Maluku Utara Females

Other cardiovascular and circulatory diseases
Papua Barat Males

Other cardiovascular and circulatory diseases
Papua Barat Females

Other cardiovascular and circulatory diseases
Papua Males

Other cardiovascular and circulatory diseases
Papua Females

Cerebrovascular disease
Aceh Males

Cerebrovascular disease
Aceh Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

**Cerebrovascular disease**

**DI Yogyakarta Males**

![Graph showing cause fraction and age distribution for cerebrovascular disease in DI Yogyakarta Males.]

**DI Yogyakarta Females**

![Graph showing cause fraction and age distribution for cerebrovascular disease in DI Yogyakarta Females.]

**Jawa Timur Males**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Jawa Timur Males.]

**Jawa Timur Females**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Jawa Timur Females.]

**Banten Males**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Banten Males.]

**Banten Females**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Banten Females.]

**Bali Males**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Bali Males.]

**Bali Females**

![Graph showing cause fraction and age distribution for cerebrovascular disease in Bali Females.]

Legend:

- **Redistributed**
- **Final Prediction after squeezing**
- **Initial Prediction**
Aim 2 Supplementary Figures

Cerebrovascular disease
Nusa Tenggara Barat Males

Cerebrovascular disease
Nusa Tenggara Barat Females

Cerebrovascular disease
Nusa Tenggara Timur Males

Cerebrovascular disease
Nusa Tenggara Timur Females

Cerebrovascular disease
Kalimantan Barat Males

Cerebrovascular disease
Kalimantan Barat Females

Cerebrovascular disease
Kalimantan Tengah Males

Cerebrovascular disease
Kalimantan Tengah Females

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

**Cerebrovascular disease**

- **Papua Males**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Papua Females**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

**Diarrheal diseases**

- **Aceh Males**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Aceh Females**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Sumatera Utara Males**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Sumatera Utara Females**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Sumatera Barat Males**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed

- **Sumatera Barat Females**
  - Initial Prediction
  - Final Prediction after squeezing
  - Redistributed
Aim 2 Supplementary Figures

Diarrheal diseases
Maluku Utara Males

Diarrheal diseases
Maluku Utara Females

Diarrheal diseases
Papua Barat Males

Diarrheal diseases
Papua Barat Females

Diarrheal diseases
Papua Males

Diarrheal diseases
Papua Females

HIV/AIDS
Aceh Males

HIV/AIDS
Aceh Females
Aim 2 Supplementary Figures

HIV/AIDS
Kepulauan Riau Males

HIV/AIDS
Kepulauan Riau Females

HIV/AIDS
DKI Jakarta Males

HIV/AIDS
DKI Jakarta Females

HIV/AIDS
Jawa Barat Males

HIV/AIDS
Jawa Barat Females

HIV/AIDS
Jawa Tengah Males

HIV/AIDS
Jawa Tengah Females
Aim 2 Supplementary Figures

HIV/AIDS
Kalimantan Selatan Males

HIV/AIDS
Kalimantan Selatan Females

HIV/AIDS
Kalimantan Timur Males

HIV/AIDS
Kalimantan Timur Females

HIV/AIDS
Kalimantan Utara Males

HIV/AIDS
Kalimantan Utara Females

HIV/AIDS
Sulawesi Utara Males

HIV/AIDS
Sulawesi Utara Females
Aim 2 Supplementary Figures

Lower respiratory infections
Lampung Males

Lower respiratory infections
Lampung Females

Lower respiratory infections
Bangka Belitung Males

Lower respiratory infections
Bangka Belitung Females

Lower respiratory infections
Kepulauan Riau Males

Lower respiratory infections
Kepulauan Riau Females

Lower respiratory infections
DKI Jakarta Males

Lower respiratory infections
DKI Jakarta Females

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing

Redistributed
Initial Prediction
Final Prediction after squeezing
Aim 2 Supplementary Figures

Lower respiratory infections
Sulawesi Tenggara Males

Lower respiratory infections
Sulawesi Tenggara Females

Lower respiratory infections
Gorontalo Males

Lower respiratory infections
Gorontalo Females

Lower respiratory infections
Sulawesi Barat Males

Lower respiratory infections
Sulawesi Barat Females

Lower respiratory infections
Maluku Males

Lower respiratory infections
Maluku Females
Aim 2 Supplementary Figures

Malaria
Sumatera Selatan Males

Malaria
Sumatera Selatan Females

Malaria
Bengkulu Males

Malaria
Bengkulu Females

Malaria
Lampung Males

Malaria
Lampung Females

Malaria
Bangka Belitung Males

Malaria
Bangka Belitung Females

Redistributed
Final Prediction after squeezing

Initial Prediction
Aim 2 Supplementary Figures

Malaria
Nusa Tenggara Barat Males

Malaria
Nusa Tenggara Barat Females

Malaria
Nusa Tenggara Timur Males

Malaria
Nusa Tenggara Timur Females

Malaria
Kalimantan Barat Males

Malaria
Kalimantan Barat Females

Malaria
Kalimantan Tengah Males

Malaria
Kalimantan Tengah Females

Cause Fraction

age

Redistributed
Initial Prediction
Final Prediction after squeezing

0
20
40
60
80

0
2
4
6
8
1
Aim 2 Supplementary Figures

Other non-communicable diseases

Riau Males

Jambi Males

Sumatera Selatan Males

Bengkulu Males

Riau Females

Jambi Females

Sumatera Selatan Females

Bengkulu Females
Aim 2 Supplementary Figures

Other non-communicable diseases

Kalimantan Barat Males

Kalimantan Barat Females

Kalimantan Tengah Males

Kalimantan Tengah Females

Kalimantan Selatan Males

Kalimantan Selatan Females

Kalimantan Timur Males

Kalimantan Timur Females

Note: The graphs display cause fraction over age with lines indicating redistributed, initial prediction, and final prediction after squeezing.
Aim 2 Supplementary Figures

Breast cancer
Sumatera Selatan Males

Breast cancer
Sumatera Selatan Females

Breast cancer
Bengkulu Males

Breast cancer
Bengkulu Females

Breast cancer
Lampung Males

Breast cancer
Lampung Females

Breast cancer
Bangka Belitung Males

Breast cancer
Bangka Belitung Females
Aim 2 Supplementary Figures

Breast cancer
Kepulauan Riau Males

Breast cancer
Kepulauan Riau Females

Breast cancer
DKI Jakarta Males

Breast cancer
DKI Jakarta Females

Breast cancer
Jawa Barat Males

Breast cancer
Jawa Barat Females

Breast cancer
Jawa Tengah Males

Breast cancer
Jawa Tengah Females
Aim 2 Supplementary Figures

Breast cancer
Papua Males

Breast cancer
Papua Females

Cervical cancer
Aceh Females

Cervical cancer
Sumatera Utara Females

Cervical cancer
Sumatera Barat Females

Cervical cancer
Riau Females

Cervical cancer
Jambi Females

Cervical cancer
Sumatera Selatan Females
Aim 2 Supplementary Figures

Tracheal, bronchus, and lung cancer
Sumatera Barat Males

Tracheal, bronchus, and lung cancer
Sumatera Barat Females

Tracheal, bronchus, and lung cancer
Riau Males

Tracheal, bronchus, and lung cancer
Riau Females

Tracheal, bronchus, and lung cancer
Jambi Males

Tracheal, bronchus, and lung cancer
Jambi Females

Tracheal, bronchus, and lung cancer
Sumatera Selatan Males

Tracheal, bronchus, and lung cancer
Sumatera Selatan Females
Aim 2 Supplementary Figures
### Aim 2 Supplementary Figures

#### Other malignant neoplasms

**Bangka Belitung Males**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for males in Bangka Belitung)
- Redistributed vs. Initial Prediction

**Bangka Belitung Females**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for females in Bangka Belitung)
- Redistributed vs. Initial Prediction

**Kepulauan Riau Males**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for males in Kepulauan Riau)
- Redistributed vs. Initial Prediction

**Kepulauan Riau Females**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for females in Kepulauan Riau)
- Redistributed vs. Initial Prediction

**DKI Jakarta Males**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for males in DKI Jakarta)
- Redistributed vs. Initial Prediction

**DKI Jakarta Females**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for females in DKI Jakarta)
- Redistributed vs. Initial Prediction

**Jawa Barat Males**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for males in Jawa Barat)
- Redistributed vs. Initial Prediction

**Jawa Barat Females**

- Cause Fraction vs. age (Graph shows the distribution of cause fractions across different age groups for females in Jawa Barat)
- Redistributed vs. Initial Prediction
Aim 2 Supplementary Figures

Other malignant neoplasms
Gorontalo Males

Other malignant neoplasms
Gorontalo Females

Other malignant neoplasms
Sulawesi Barat Males

Other malignant neoplasms
Sulawesi Barat Females

Other malignant neoplasms
Maluku Males

Other malignant neoplasms
Maluku Females

Other malignant neoplasms
Maluku Utara Males

Other malignant neoplasms
Maluku Utara Females
Aim 2 Supplementary Figures

Chronic respiratory diseases
Sumatera Barat Males

Chronic respiratory diseases
Sumatera Barat Females

Chronic respiratory diseases
Riau Males

Chronic respiratory diseases
Riau Females

Chronic respiratory diseases
Jambi Males

Chronic respiratory diseases
Jambi Females

Chronic respiratory diseases
Sumatera Selatan Males

Chronic respiratory diseases
Sumatera Selatan Females
Aim 2 Supplementary Figures

Chronic respiratory diseases
Jawa Timur Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Jawa Timur Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Banten Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Banten Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Bali Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Bali Females

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Nusa Tenggara Barat Males

Redistributed
Final Prediction after squeezing
Initial Prediction

Chronic respiratory diseases
Nusa Tenggara Barat Females

Redistributed
Final Prediction after squeezing
Initial Prediction
Aim 2 Supplementary Figures

Chronic respiratory diseases

Sulawesi Selatan Males

Sulawesi Selatan Females

Sulawesi Tenggara Males

Sulawesi Tenggara Females

Gorontalo Males

Gorontalo Females

Sulawesi Barat Males

Sulawesi Barat Females
Aim 2 Supplementary Figures

Chronic respiratory diseases
Maluku Males

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Maluku Females

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Maluku Utara Males

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Maluku Utara Females

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Papua Barat Males

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Papua Barat Females

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Papua Males

Initial Prediction
Final Prediction after squeezing

Redistributed

Chronic respiratory diseases
Papua Females

Initial Prediction
Final Prediction after squeezing

Redistributed
Supplementary Figure 2. Cause distributions of deaths over age, by sex and province. Each figure shows the raw data, redistributed data, initial predictions before squeezing, and final estimates after squeezing. The following legend applies to Supplementary Figures 2 and 3.
Aim 2 Supplementary Figures

Age distribution of deaths
Aceh Males

Age distribution of deaths
Aceh Females

sample size 378
Aim 2 Supplementary Figures

Age distribution of deaths
Sumatera Utara Males

Age distribution of deaths
Sumatera Utara Females

sample size 4778
Aim 2 Supplementary Figures

Age distribution of deaths
Jambi Males

Age distribution of deaths
Jambi Females

sample size 242
Age distribution of deaths
Sumatera Selatan Males

Age distribution of deaths
Sumatera Selatan Females
Aim 2 Supplementary Figures

Age distribution of deaths
Bengkulu Males

Age distribution of deaths
Bengkulu Females
Aim 2 Supplementary Figures

Age distribution of deaths

DKI Jakarta Males

sample size 3354

Age distribution of deaths

DKI Jakarta Females

sample size 3354
Aim 2 Supplementary Figures

Age distribution of deaths
DI Yogyakarta Males

Age distribution of deaths
DI Yogyakarta Females
Aim 2 Supplementary Figures

Age distribution of deaths
Jawa Timur Males

Age distribution of deaths
Jawa Timur Females
Aim 2 Supplementary Figures

Age distribution of deaths

Banten Males

Banten Females

Sample size 1583
Aim 2 Supplementary Figures

Age distribution of deaths

Bali Males

Age distribution of deaths

Bali Females

Sample size 1467
Age distribution of deaths
Kalimantan Barat Males

Aim 2 Supplementary Figures

sample size 159

Age distribution of deaths
Kalimantan Barat Females

sample size 159
Age distribution of deaths
Kalimantan Selatan Males

Age distribution of deaths
Kalimantan Selatan Females
Aim 2 Supplementary Figures

Age distribution of deaths
Sulawesi Barat Males

Age distribution of deaths
Sulawesi Barat Females

Sample size 179
Aim 2 Supplementary Figures

Age distribution of deaths
Papua Males

Age distribution of deaths
Papua Females

sample size 171
Supplementary Figure 3. Cause distributions of YLLs over age, by sex and province. Each figure shows the final estimates of YLLs. The following legend applies to Supplementary Figures 2 and 3.
Aim 2 Supplementary Figures

Age distribution of YLLs
Sumatera Utara Males

Age distribution of YLLs
Sumatera Utara Females
Aim 2 Supplementary Figures

Age distribution of YLLs
Riau Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Age distribution of YLLs
Riau Females
Aim 2 Supplementary Figures

Age distribution of YLLs

Jambi Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Jambi Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
Sumatera Selatan Males

Age distribution of YLLs
Sumatera Selatan Females
Aim 2 Supplementary Figures

Age distribution of YLLs
Bengkulu Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Maternal disorders
- Breast cancer
- Cervical cancer
- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Maternal disorders
- Breast cancer
- Cervical cancer

Age distribution of YLLs
Bengkulu Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Maternal disorders
- Breast cancer
- Cervical cancer
- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Maternal disorders
- Breast cancer
- Cervical cancer

Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
DKI Jakarta Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Age distribution of YLLs
DKI Jakarta Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Aim 2 Supplementary Figures

**Age distribution of YLLs**

**Jawa Barat Males**

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung can
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circula
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

**Jawa Barat Females**

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung can
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circula
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
Jawa Tengah Males

Age distribution of YLLs
Jawa Tengah Females
Aim 2 Supplementary Figures

Age distribution of YLLs
Banten Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Age distribution of YLLs
Banten Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Age distribution of YLLs

Bali Males

Aim 2 Supplementary Figures

Age distribution of YLLs

Bali Females

Diarrheal diseases
HIV/AIDS
Lower respiratory infections
Malaria
Tuberculosis
Maternal disorders
NN enceph: birth asphyxia/trauma
Preterm birth complications
Other neonatal disorders
Other communicable diseases
Tracheal, bronchus, and lung can
Breast cancer
Cervical cancer
Other malignant neoplasms
Cerebrovascular disease
Ischemic heart disease
Other cardiovascular and circula
Diabetes mellitus
Chronic kidney disease
Cirrhosis
Chronic respiratory diseases
Other non–communicable diseases
Drowning
Falls
Interpersonal violence
Self–harm
Transport injuries
Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
Nusa Tenggara Barat Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Age distribution of YLLs
Nusa Tenggara Barat Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
Nusa Tenggara Timur Males

Age distribution of YLLs
Nusa Tenggara Timur Females
Aim 2 Supplementary Figures

Age distribution of YLLs
Kalimantan Barat Males

YLLs

Age distribution of YLLs
Kalimantan Barat Females

YLLs

Diarrheal diseases
HIV/AIDS
Lower respiratory infections
Malaria
Tuberculosis
Maternal disorders
NN enceph: birth asphyxia/trauma
Preterm birth complications
Other neonatal disorders
Other communicable diseases
Tracheal, bronchus, and lung cancer
Breast cancer
Cervical cancer
Other malignant neoplasms
Cerebrovascular disease
Ischemic heart disease
Other cardiovascular and circulatory diseases
Diabetes mellitus
Cirrhosis
Chronic respiratory diseases
Other non-communicable diseases
Drowning
Falls
Interpersonal violence
Self-harm
Transport injuries
Other unintentional injuries
Age distribution of YLLs
Kalimantan Tengah Males

Age distribution of YLLs
Kalimantan Tengah Females
Aim 2 Supplementary Figures

Age distribution of YLLs
Sulawesi Barat Males

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries

Age distribution of YLLs
Sulawesi Barat Females

- Diarrheal diseases
- HIV/AIDS
- Lower respiratory infections
- Malaria
- Tuberculosis
- Maternal disorders
- NN enceph: birth asphyxia/trauma
- Preterm birth complications
- Other neonatal disorders
- Other communicable diseases
- Tracheal, bronchus, and lung cancer
- Breast cancer
- Cervical cancer
- Other malignant neoplasms
- Cerebrovascular disease
- Ischemic heart disease
- Other cardiovascular and circulatory diseases
- Diabetes mellitus
- Chronic kidney disease
- Cirrhosis
- Chronic respiratory diseases
- Other non-communicable diseases
- Drowning
- Falls
- Interpersonal violence
- Self-harm
- Transport injuries
- Other unintentional injuries
Aim 2 Supplementary Figures

Age distribution of YLLs
Papua Barat Males

Age distribution of YLLs
Papua Barat Females
Aim 2 Supplementary Figures

Age distribution of YLLs

Papua Males

YLLs

0 10,000 20,000 30,000

Age

0 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 100

Diarrheal diseases
HIV/AIDS
Lower respiratory infections
Malaria
Tuberculosis
Maternal disorders
NN enceph: birth asphyxia/trauma
Preterm birth complications
Other neonatal disorders
Other communicable diseases
Tracheal, bronchus, and lung can
Breast cancer
Cervical cancer
Other malignant neoplasms
Cerebrovascular disease
Ischemic heart disease
Other cardiovascular and circula
Diabetes mellitus
Chronic kidney disease
Cirrhosis
Chronic respiratory diseases
Other non−communicable diseases
Drowning
Falls
Interpersonal violence
Self−harm
Transport injuries
Other unintentional injuries

Age distribution of YLLs

Papua Females

YLLs

0 10,000 20,000 30,000

Age

0 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 100

Diarrheal diseases
HIV/AIDS
Lower respiratory infections
Malaria
Tuberculosis
Maternal disorders
NN enceph: birth asphyxia/trauma
Preterm birth complications
Other neonatal disorders
Other communicable diseases
Tracheal, bronchus, and lung can
Breast cancer
Cervical cancer
Other malignant neoplasms
Cerebrovascular disease
Ischemic heart disease
Other cardiovascular and circula
Diabetes mellitus
Chronic kidney disease
Cirrhosis
Chronic respiratory diseases
Other non−communicable diseases
Drowning
Falls
Interpersonal violence
Self−harm
Transport injuries
Other unintentional injuries
Supplementary Figure 4. Heatmap of cause-specific mortality rates per 100,000 by province for age groups 0-4, 5-14, 15-49, 50-69, and 70+. Causes in the figure are ordered according to cause groups. Each row is color shaded to highlight differences in GMR across provinces. For example, if a column contains many red-shaded cells, then that province has higher GMR than the national GMR for many cause groups (such as Pape for HIV/AIDS, tuberculosis, and some injuries).

## Cause group

### Communicable/mothers/Nutritional diseases*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
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<tbody>
<tr>
<td>0‐4</td>
<td>76.4</td>
<td>32.0</td>
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<tr>
<td>5‐14</td>
<td>4.8</td>
<td>1.9</td>
</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
</tr>
</tbody>
</table>

### Lower respiratory infections

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0‐4</td>
<td>11.4</td>
<td>1.9</td>
</tr>
<tr>
<td>5‐14</td>
<td>31.2</td>
<td>33.5</td>
</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
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</tbody>
</table>

### Maternal mortality

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<th>Male</th>
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<tbody>
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<td>0‐4</td>
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<td>0.8</td>
</tr>
<tr>
<td>5‐14</td>
<td>4.8</td>
<td>1.9</td>
</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
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</table>

### Other non-communicable conditions

<table>
<thead>
<tr>
<th>Age Group</th>
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<th>Female</th>
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<tbody>
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<td>0‐4</td>
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<td>0.8</td>
</tr>
<tr>
<td>5‐14</td>
<td>4.8</td>
<td>1.9</td>
</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
</tr>
</tbody>
</table>

### Diabetic diseases

<table>
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<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0‐4</td>
<td>5.7</td>
<td>0.9</td>
</tr>
<tr>
<td>5‐14</td>
<td>2.0</td>
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</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
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### Gastrointestinal diseases

<table>
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<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
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<td>0‐4</td>
<td>5.7</td>
<td>0.9</td>
</tr>
<tr>
<td>5‐14</td>
<td>2.0</td>
<td>6.9</td>
</tr>
<tr>
<td>15‐49</td>
<td>6.0</td>
<td>0.3</td>
</tr>
<tr>
<td>70+</td>
<td>327.4</td>
<td>363.0</td>
</tr>
</tbody>
</table>

### Communicable/mothers/Nutritional diseases*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0‐4</td>
<td>5.4</td>
<td>6.8</td>
</tr>
<tr>
<td>5‐14</td>
<td>5.0</td>
<td>4.8</td>
</tr>
<tr>
<td>15‐49</td>
<td>4.1</td>
<td>0.8</td>
</tr>
<tr>
<td>70+</td>
<td>196.2</td>
<td>551.0</td>
</tr>
</tbody>
</table>

### Cardiovascular diseases

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
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#### Multimorbidity

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#### Comorbidity

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#### Other causes

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Supplementary Figure 5. Comparison of model fits with GBD 2016 data/estimates for select cause groups with low correlation: Other malignant neoplasms, drowning, malaria, HIV/AIDS, self-harm, and maternal conditions.

a) Other malignant neoplasms*

*No equivalent model fits for GBD because this cause group aggregates all cancers other than breast and cervical cancers.

b) Drowning

GBD 2016 model fits: Source: [http://ihmeuw.org/4km4](http://ihmeuw.org/4km4) (Females) [http://ihmeuw.org/4km3](http://ihmeuw.org/4km3) (Males)
c) Malaria

GBD model fits: Source: [http://ihmeuw.org/4km1](http://ihmeuw.org/4km1) (Females) [http://ihmeuw.org/4km2](http://ihmeuw.org/4km2) (Males)
d) HIV/AIDS

GBD model fits:  Source: [http://ihmeuw.org/4km5](http://ihmeuw.org/4km5) (Females)  [http://ihmeuw.org/4km6](http://ihmeuw.org/4km6) (Males)
e) Self-harm

GBD model fits: Source: [http://ihmeuw.org/4km7](http://ihmeuw.org/4km7) (Females) [http://ihmeuw.org/4km8](http://ihmeuw.org/4km8) (Males)
f) Maternal conditions

For maternal conditions, the triangle data points in the GBD figure are the verbal autopsy data that also feed into my model. The other diamond data points are extracted from sibling histories.

GBD model fits: Source: [http://ihmeuw.org/4kp6](http://ihmeuw.org/4kp6)
Supplementary Figure 6. Comparison of cause-specific mortality in Indonesia and the four countries represented in the PHMRC physician-certified verbal autopsy validation datasets used to generate my analytical cause list.