

# COVID-19 situation report for WHO Africa Region

10/04/2020

Produced by the TIBA COVID-19 Epidemic Response Unit

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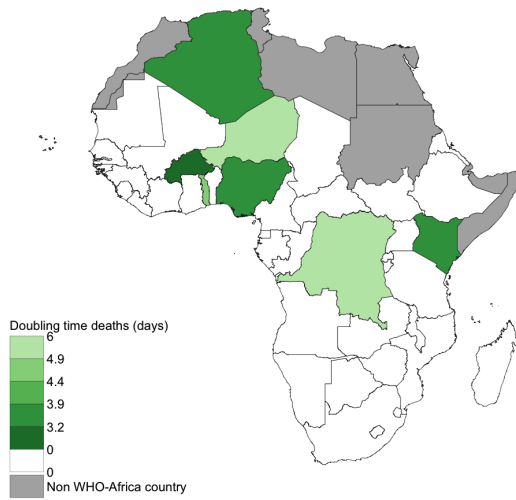
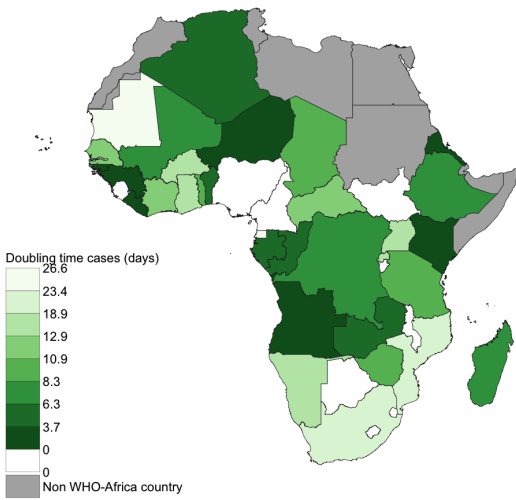
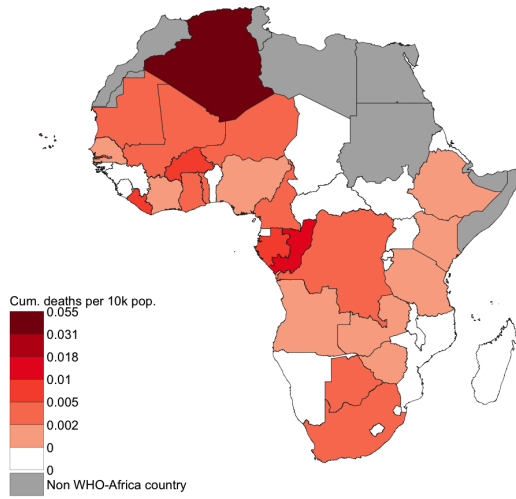
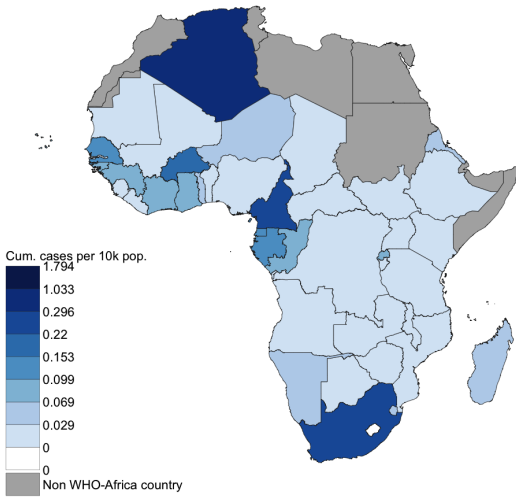
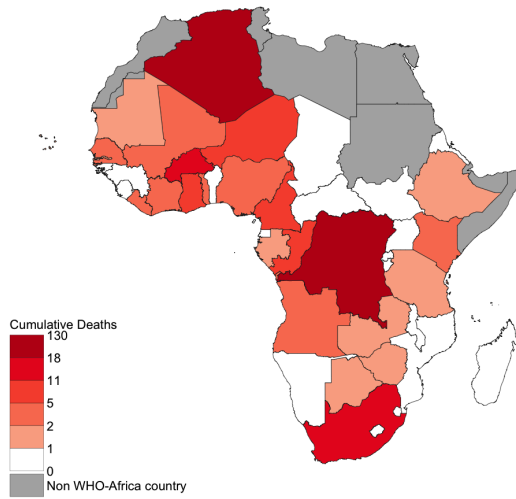
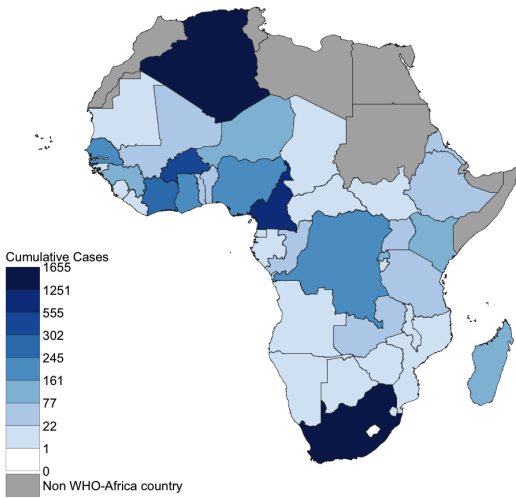
## Section 1: Overview of WHO Africa situation



We compare the size and rate of increase of the COVID-19 epidemic across the countries included in WHO Africa Region.

The maps below summarise the in-country situations:

- Top row: cumulated reported cases (left) and deaths (right).
- Middle row: cumulated reported cases (left) and deaths (right) per 10,000 population on a log10 scale.
- Bottom row: overview of doubling time of cumulative incidence (left) and deaths (right). Doubling times are estimated over a 7 day period up to 06/04/2020.



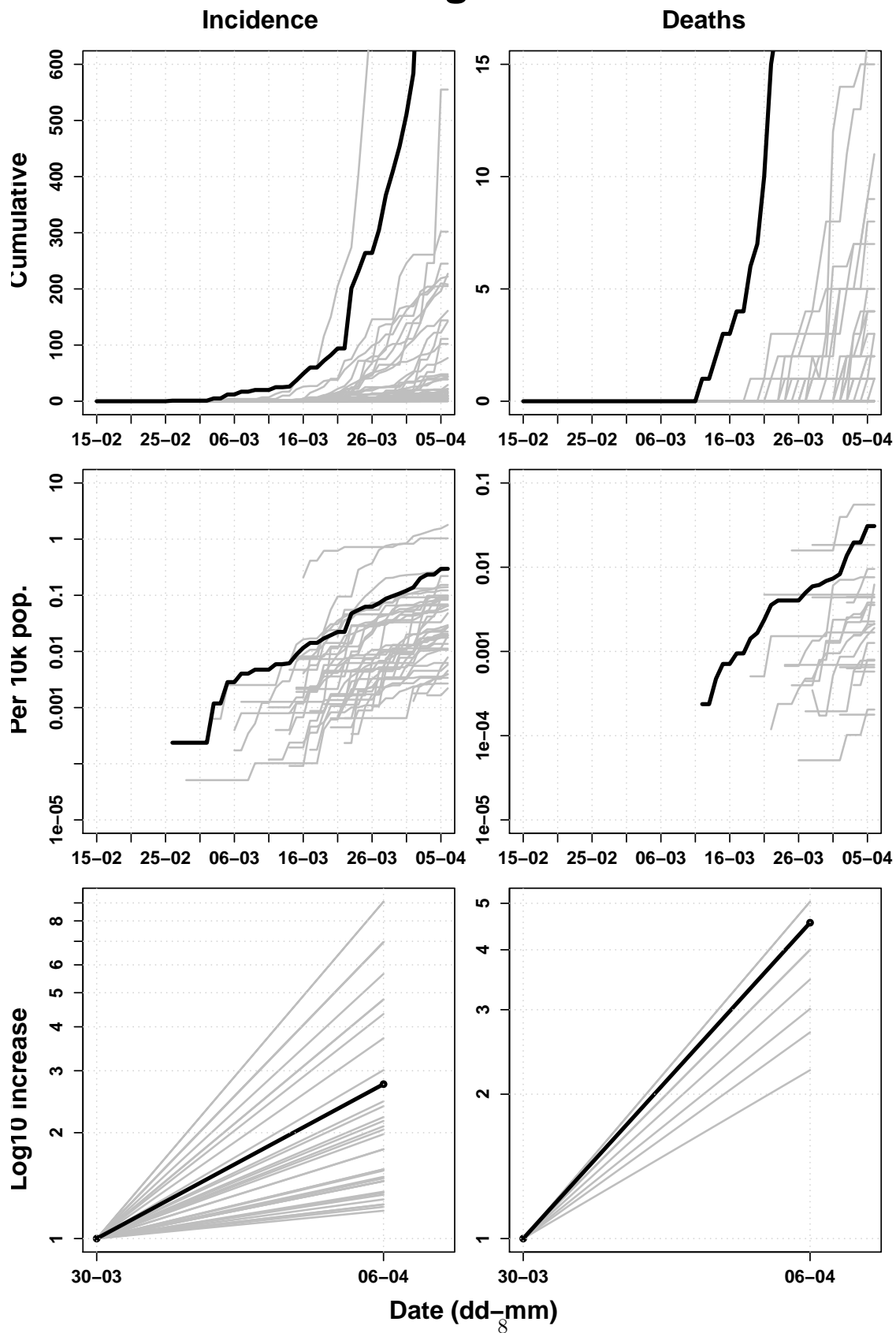
## Section 2: Individual countries situations

As of 06/04/2020, each panel below shows for each country:

- Top row: cumulated reported cases (left) and deaths (right).
- Middle row: cumulated reported cases (left) and deaths (right) per 10,000 population on a log10 scale.
- Bottom row: log10 increase in number of cases (left) and deaths (right) based on the doubling times (of incidence and deaths respectively) estimated over a 7 day period up to 06/04/2020.

Algeria

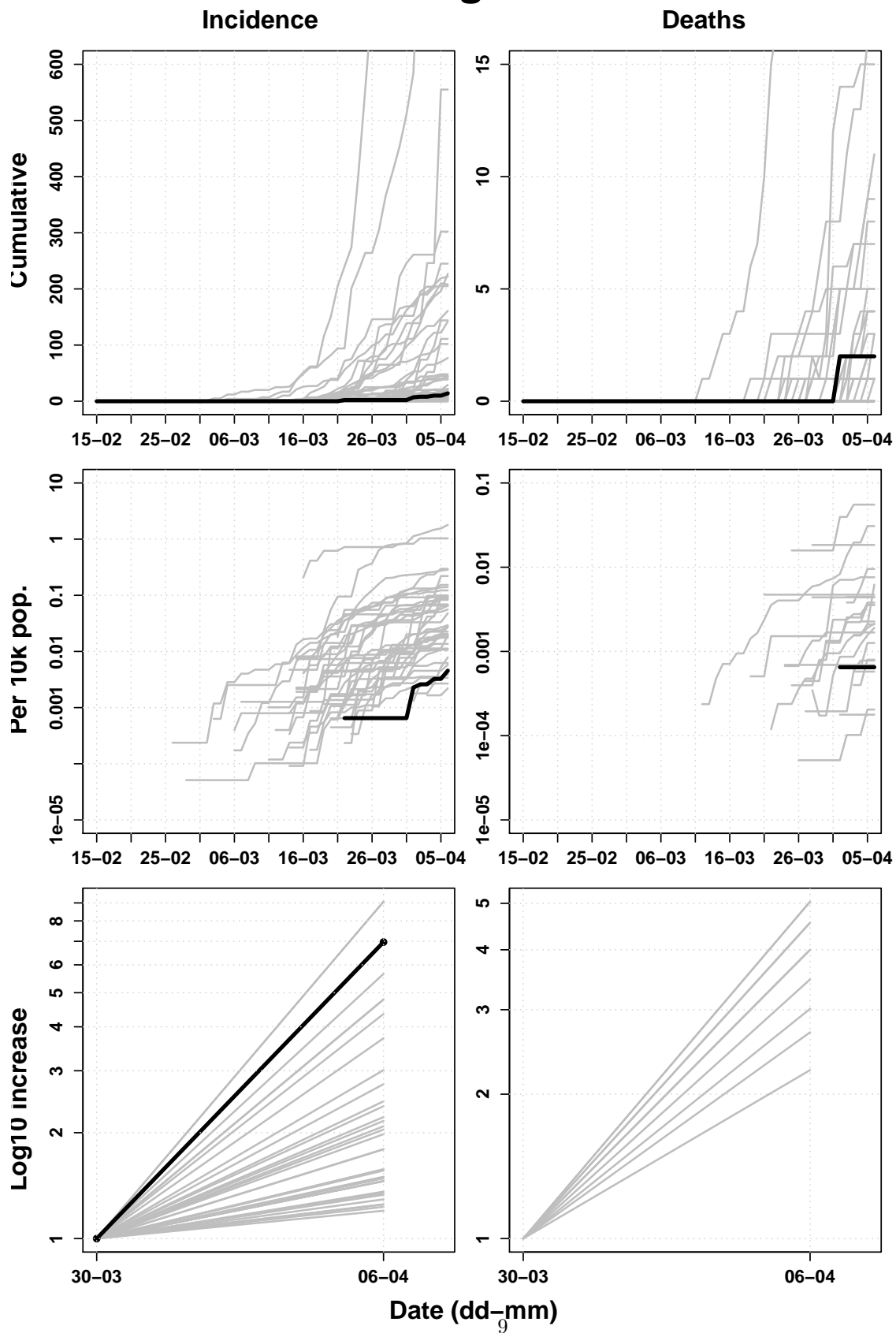
# Algeria





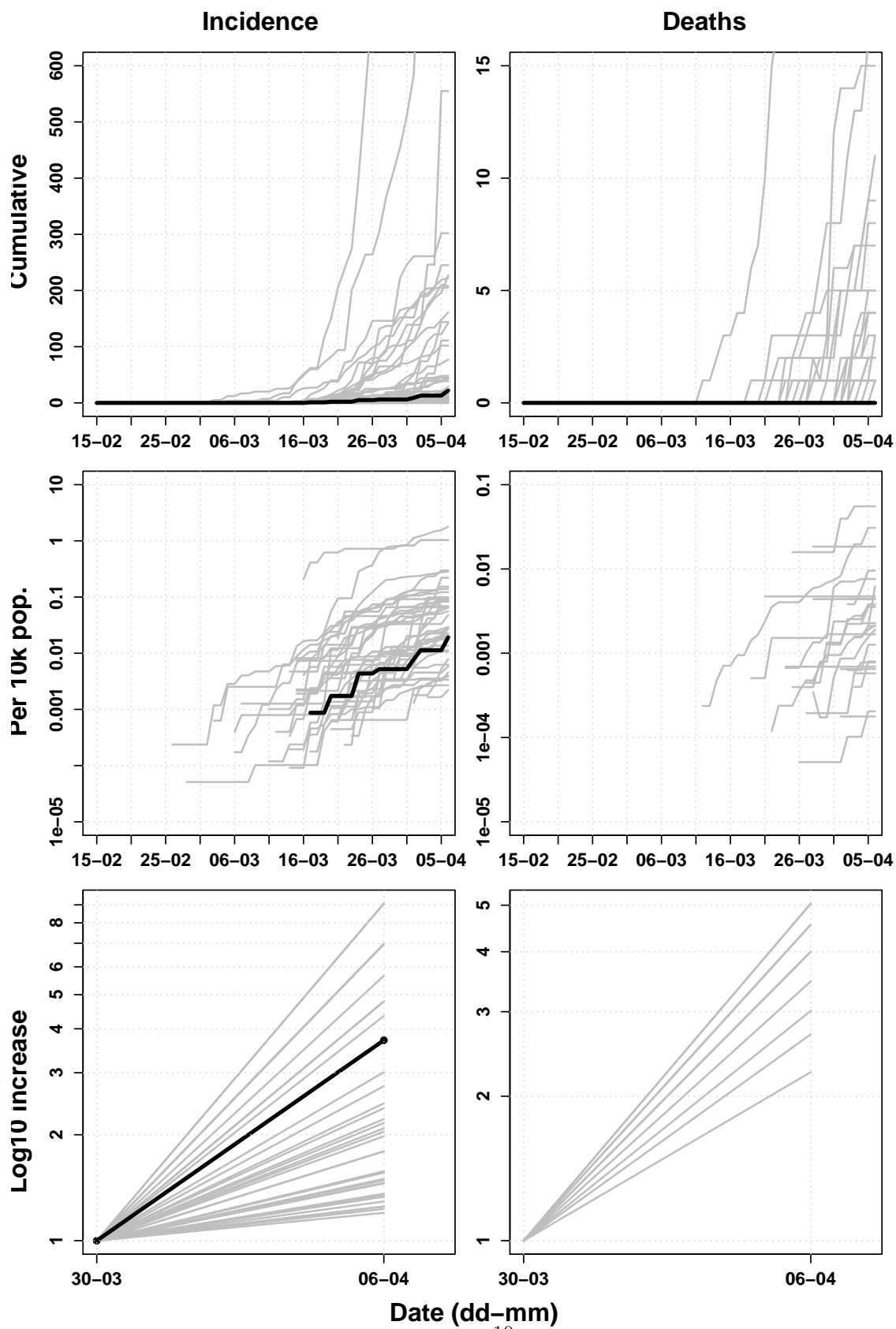
Angola

# Angola



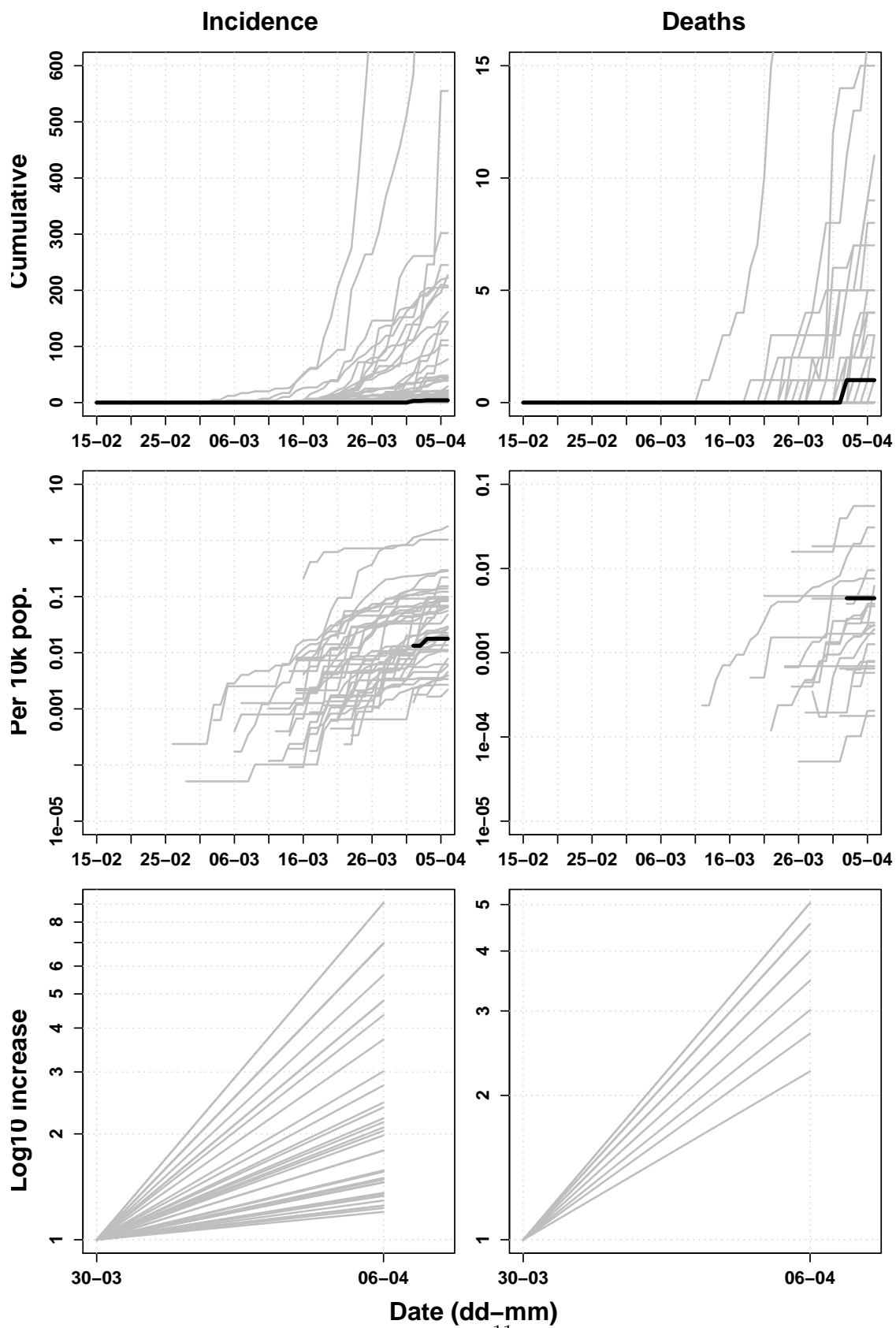
Benin

# Benin

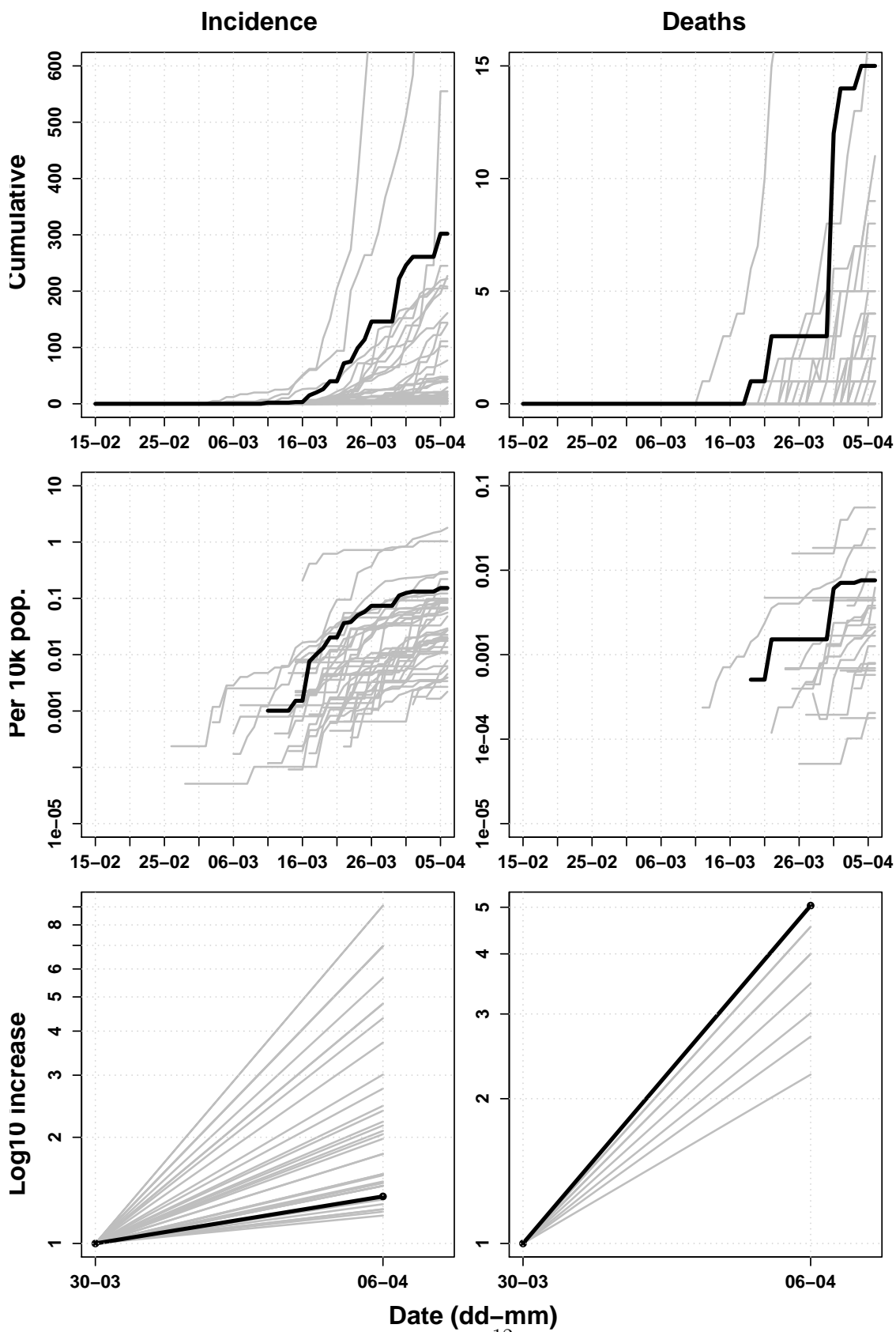


Botswana

# Botswana

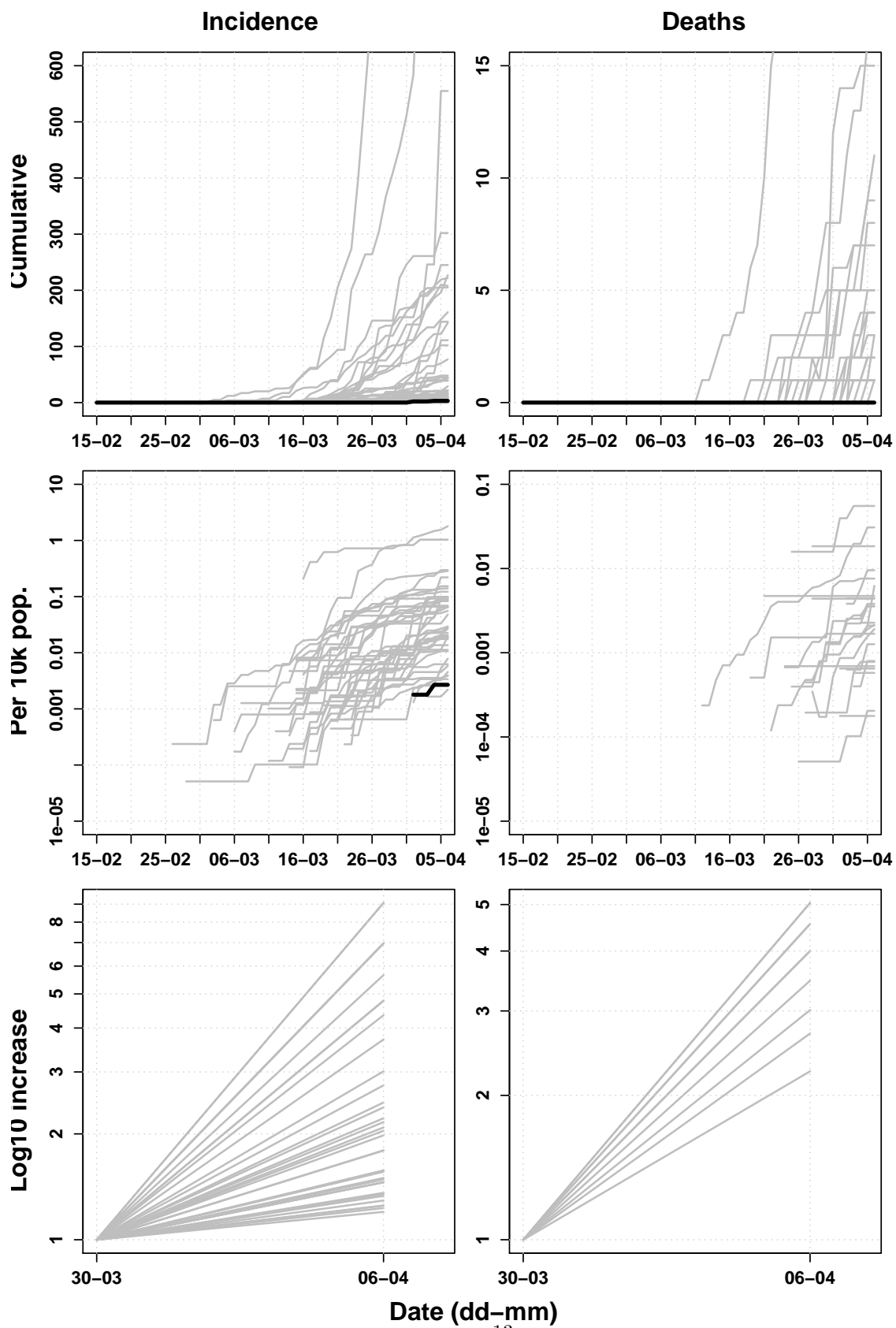


# Burkina Faso



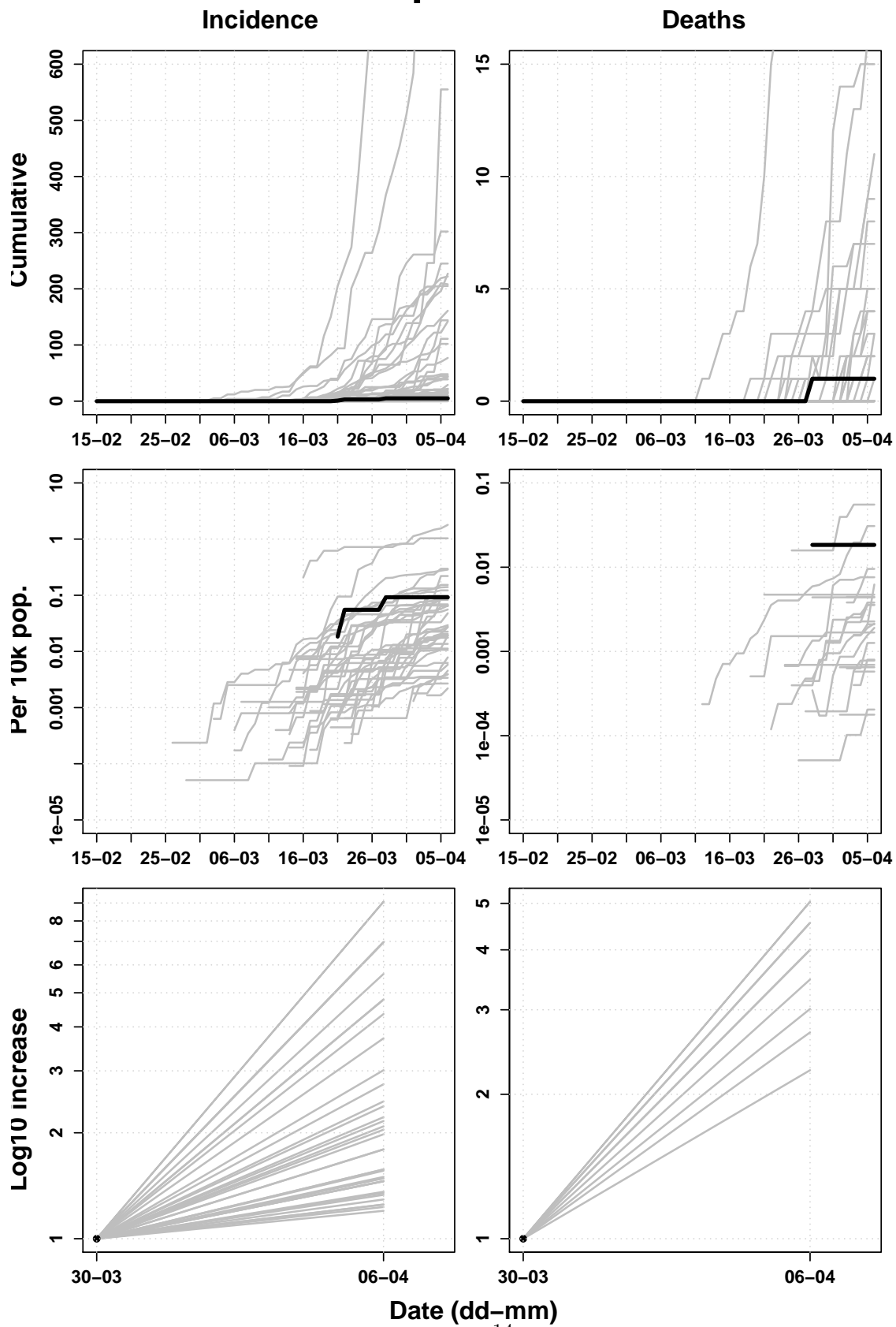
Burundi

# Burundi



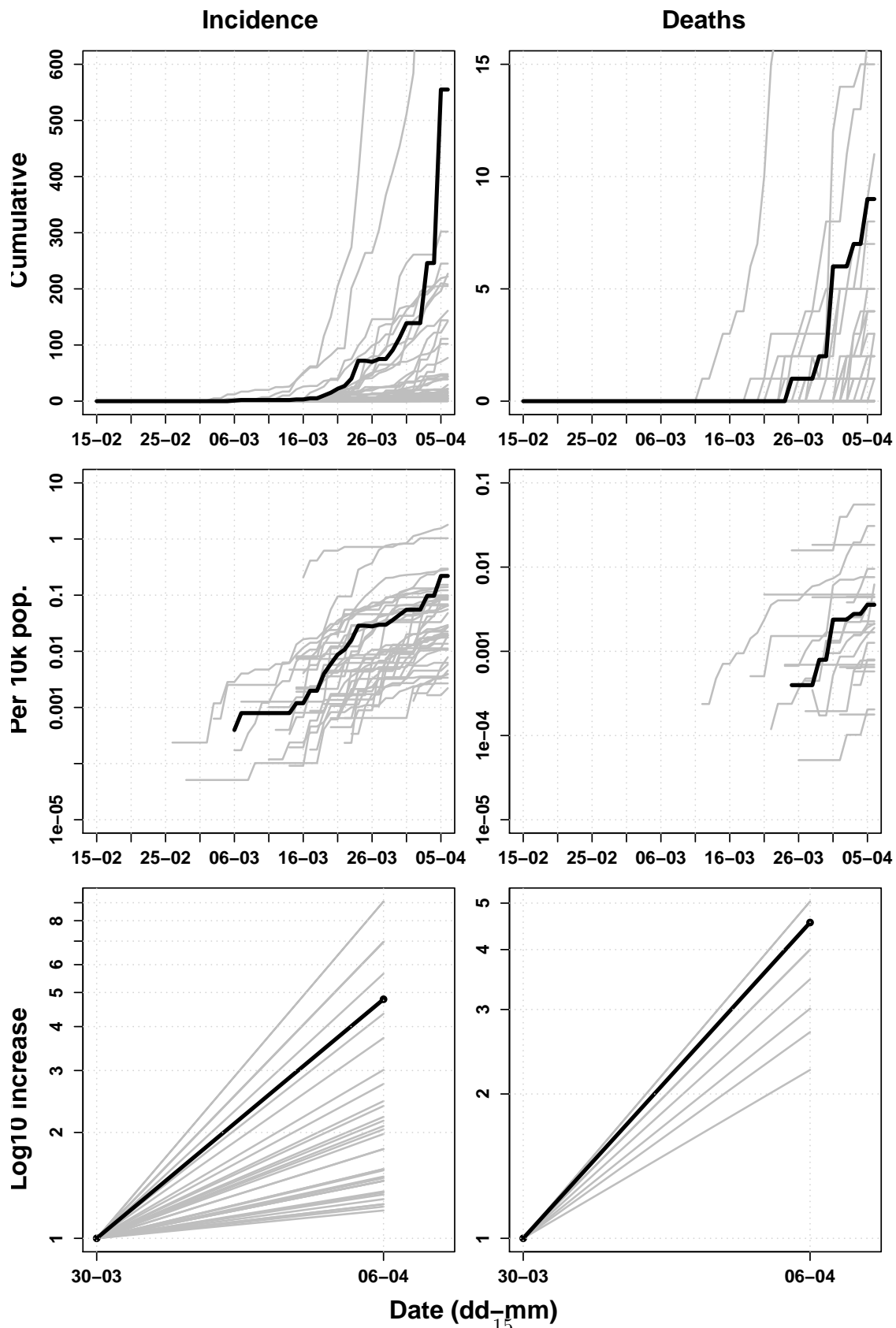
Cameroon

## Cape Verde



Cape Verde

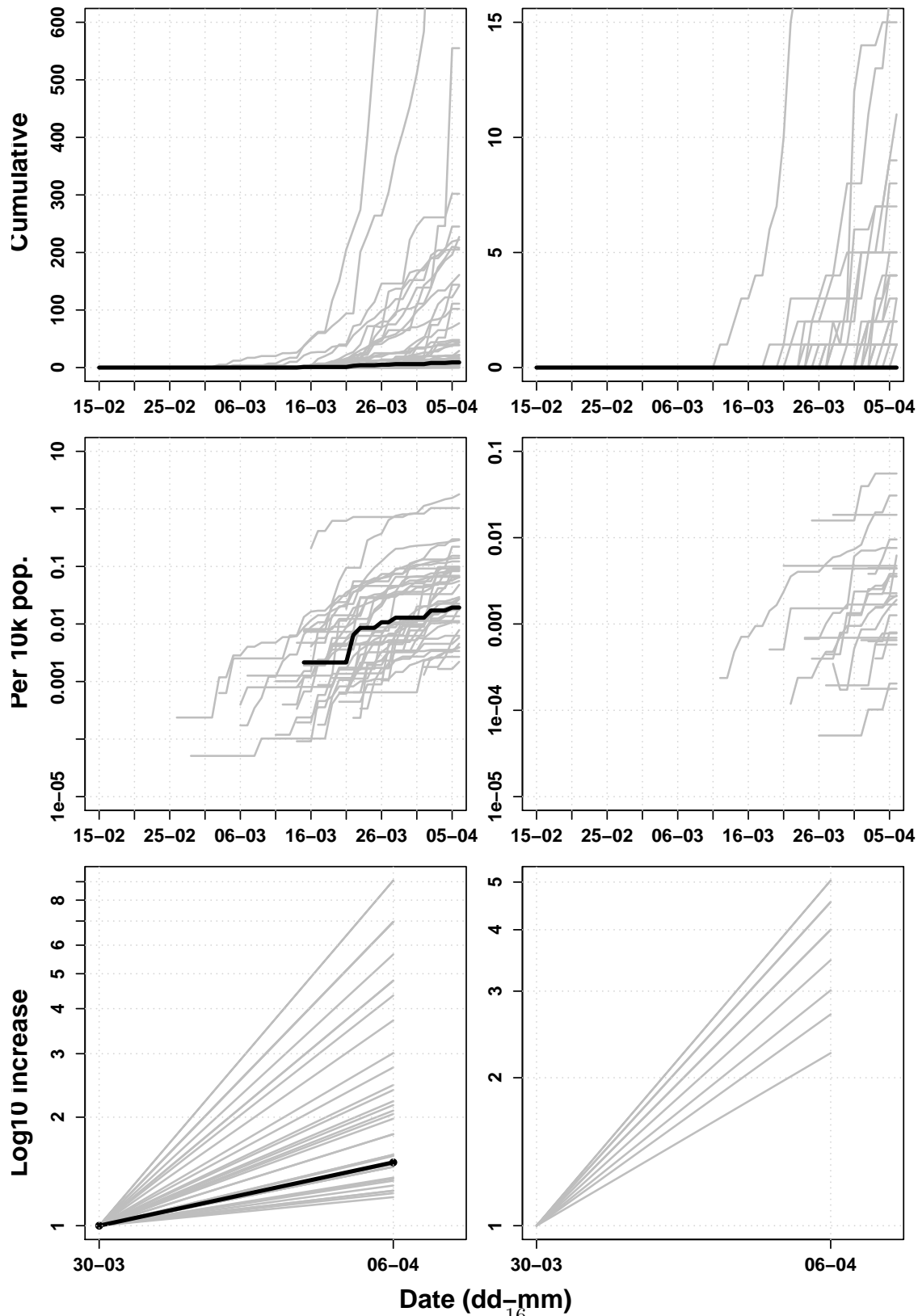
## Cameroon



# Central African Republic

Incidence

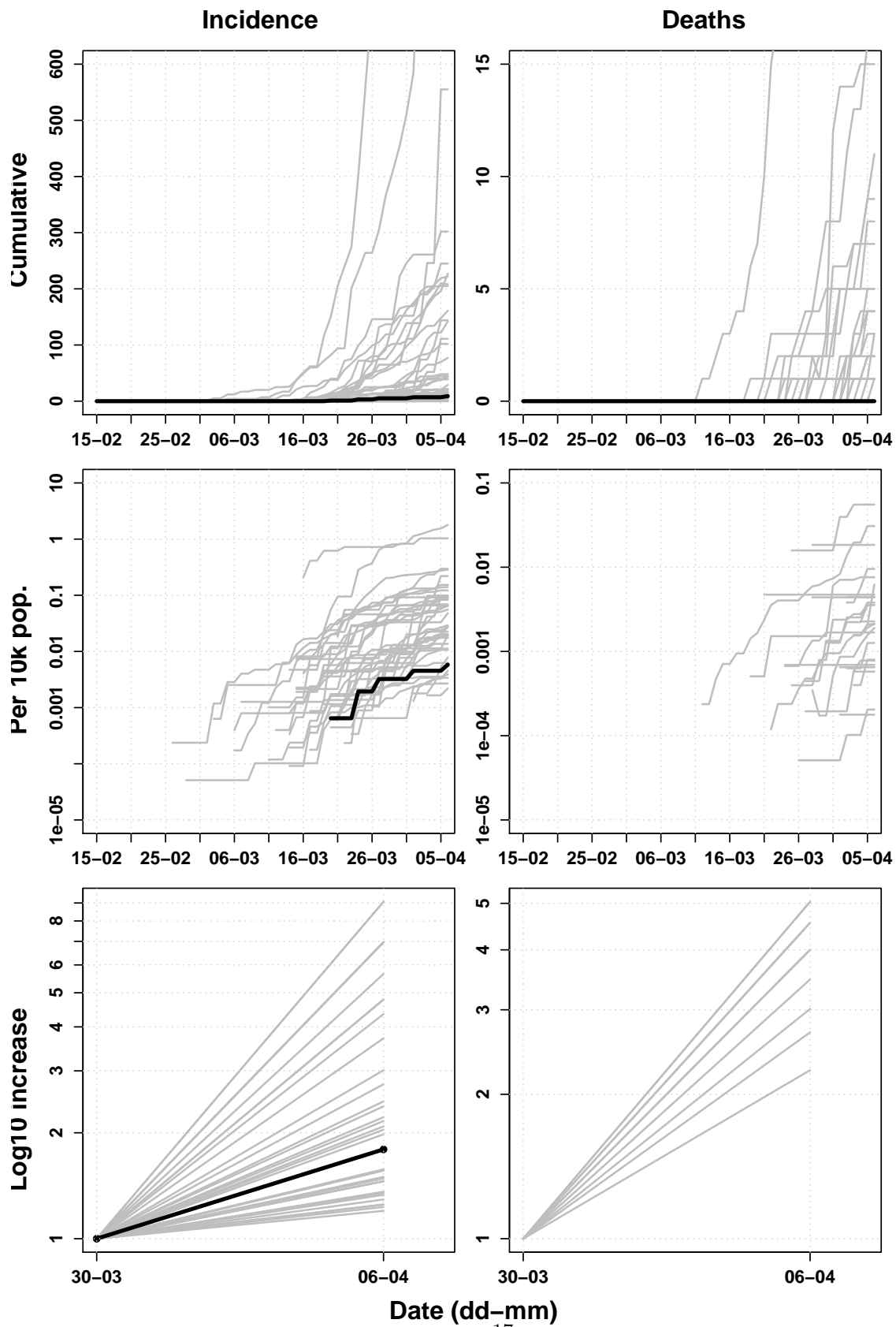
Deaths



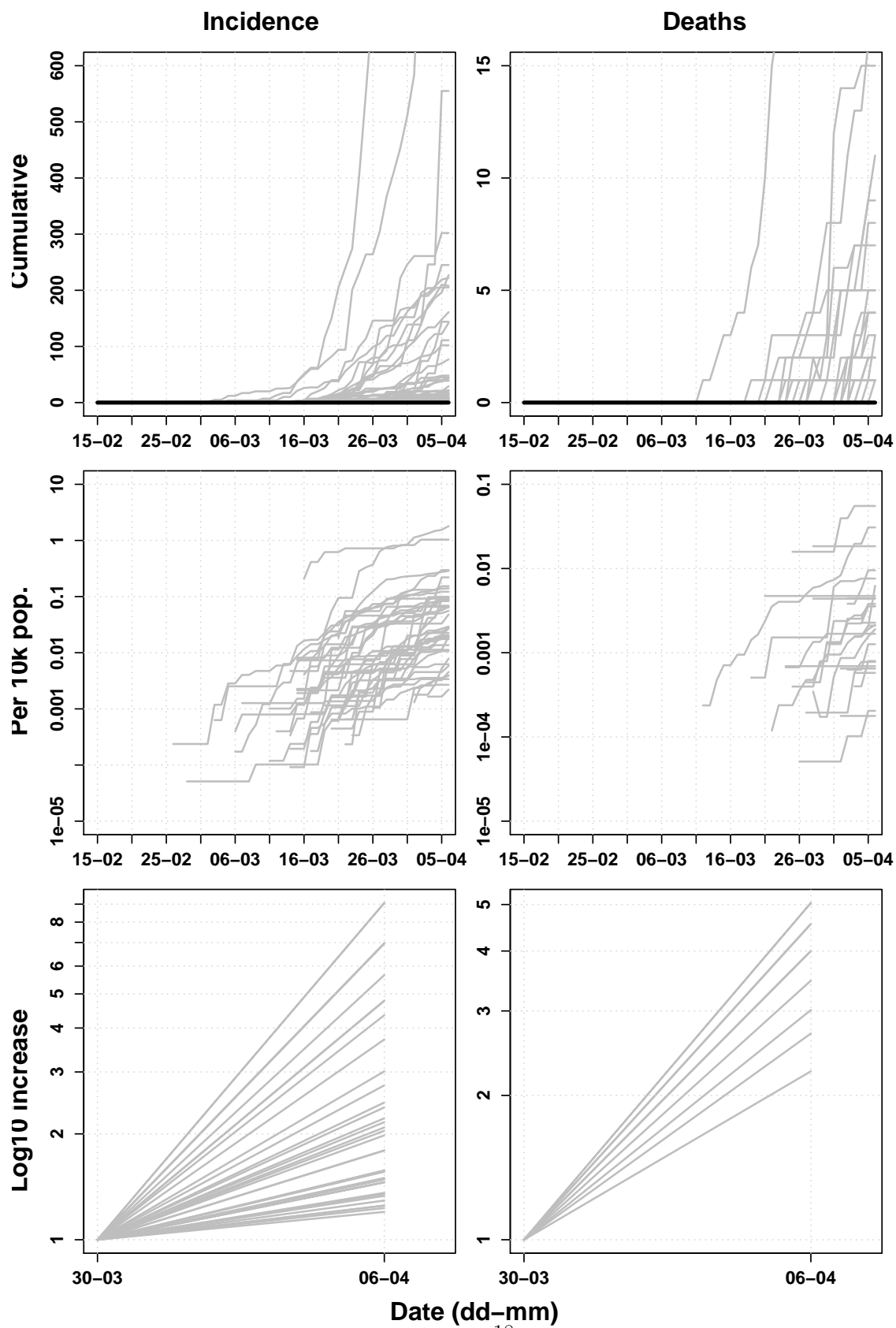


Chad

# Chad

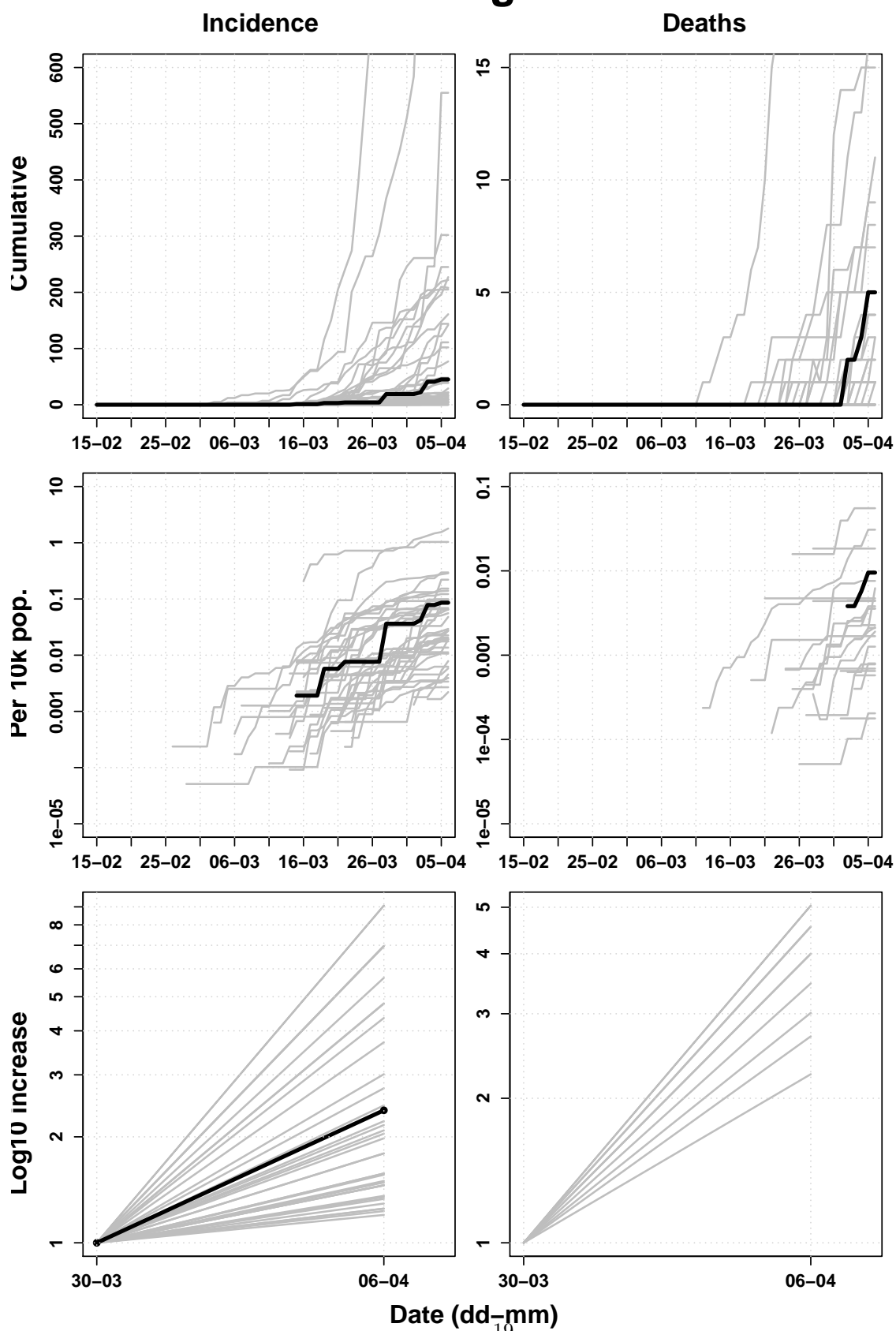


# Comoros

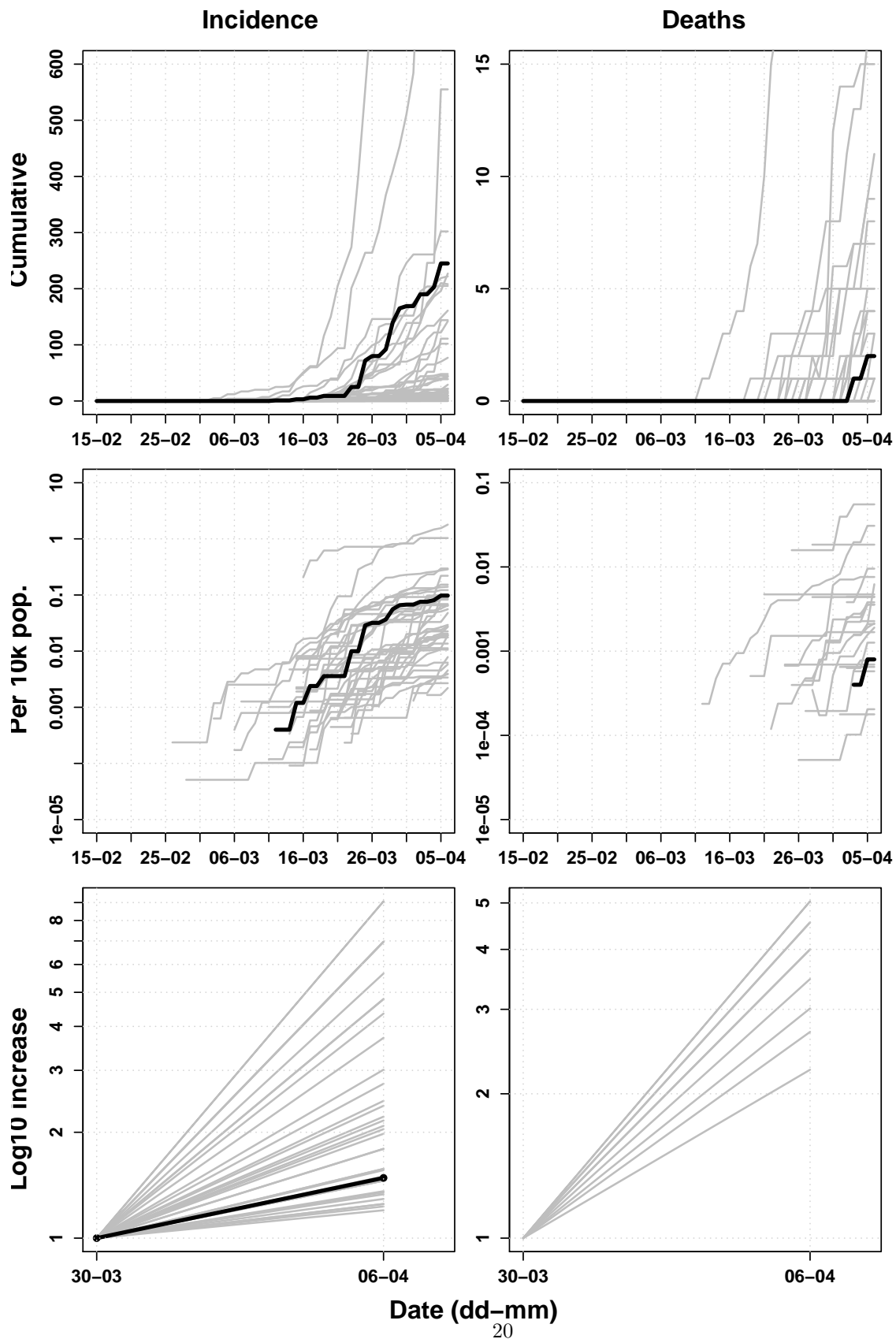


Congo

# Congo

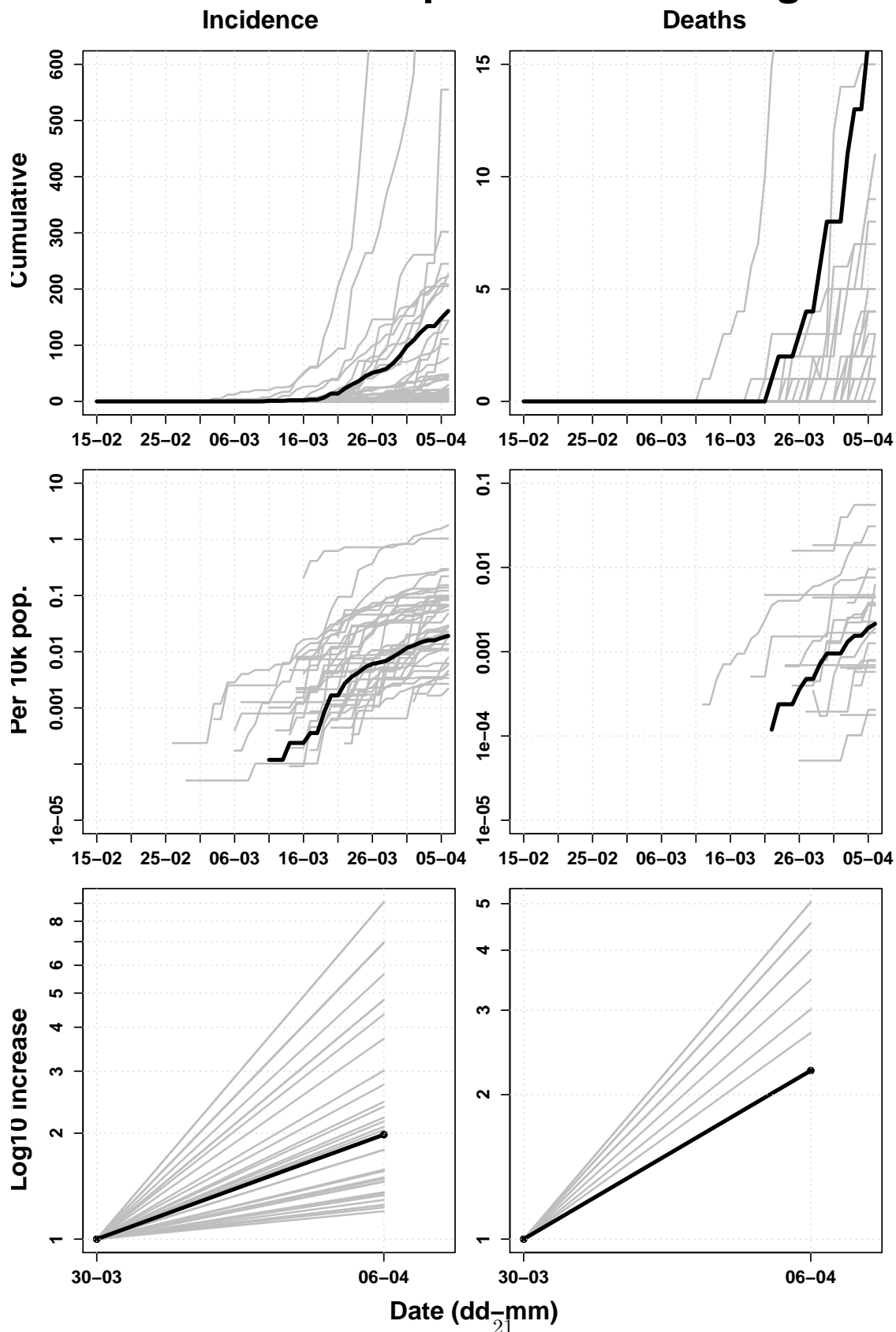


# Cote d'Ivoire

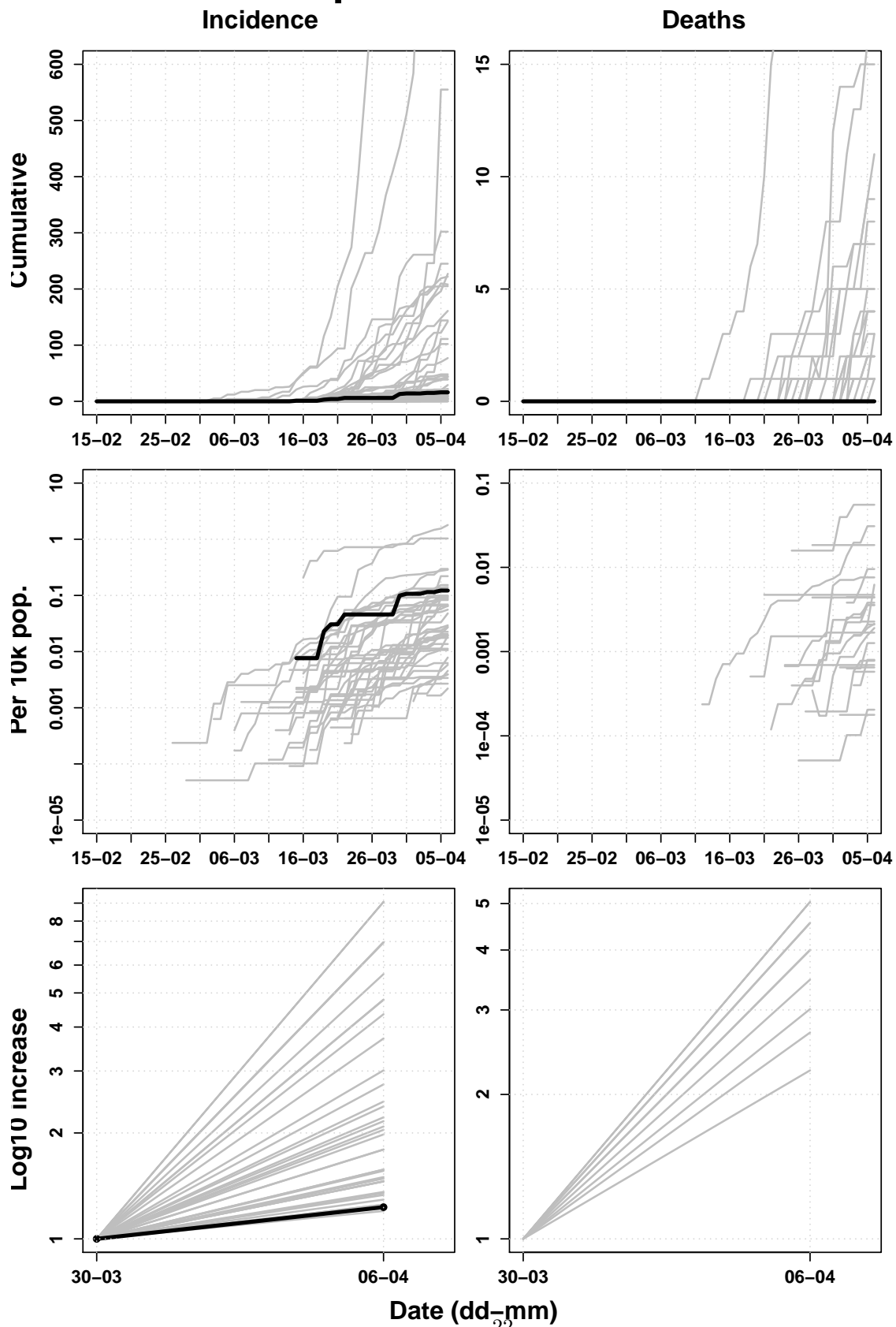


Democratic Republic of the Congo

# Democratic Republic of the Congo

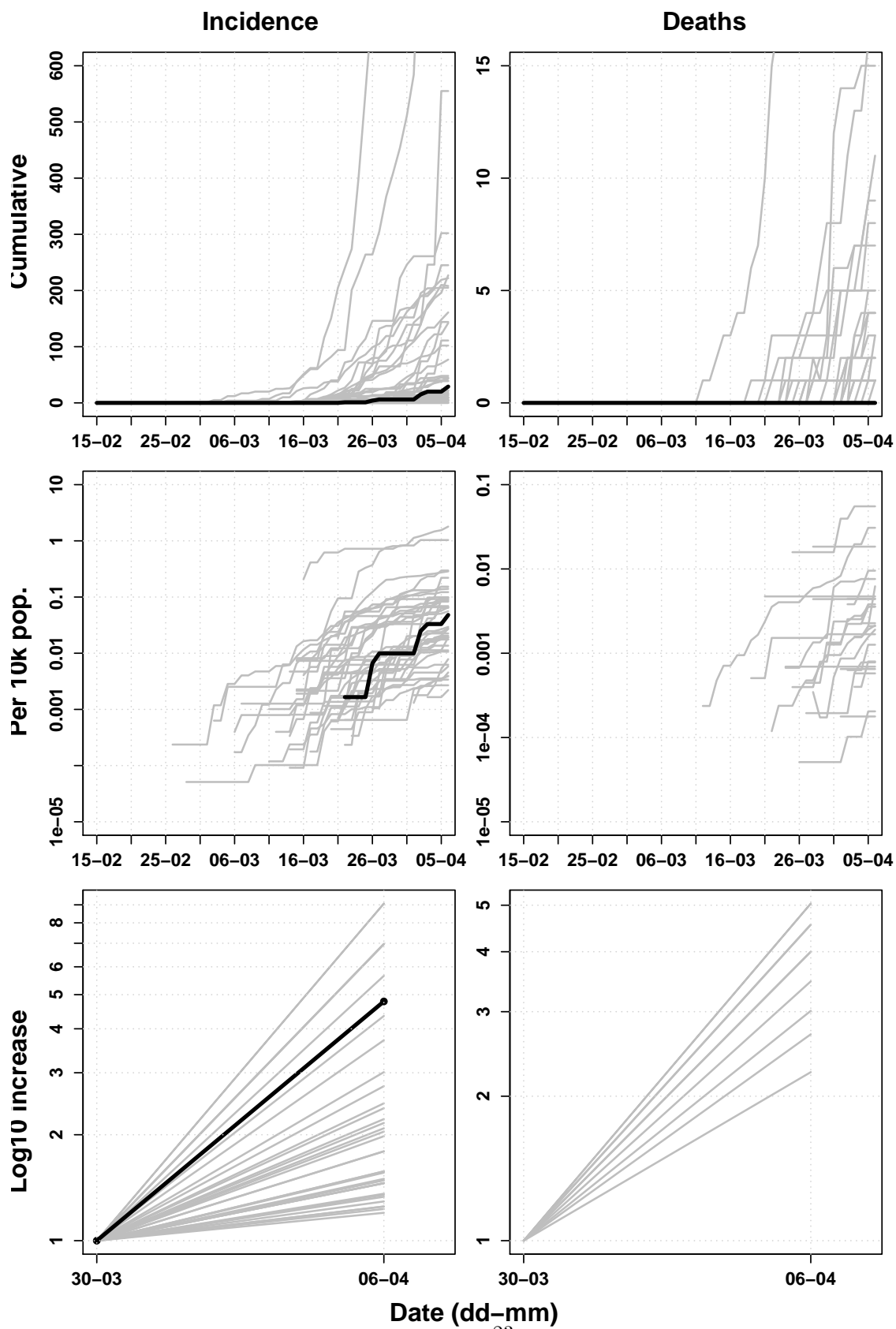


# Equatorial Guinea

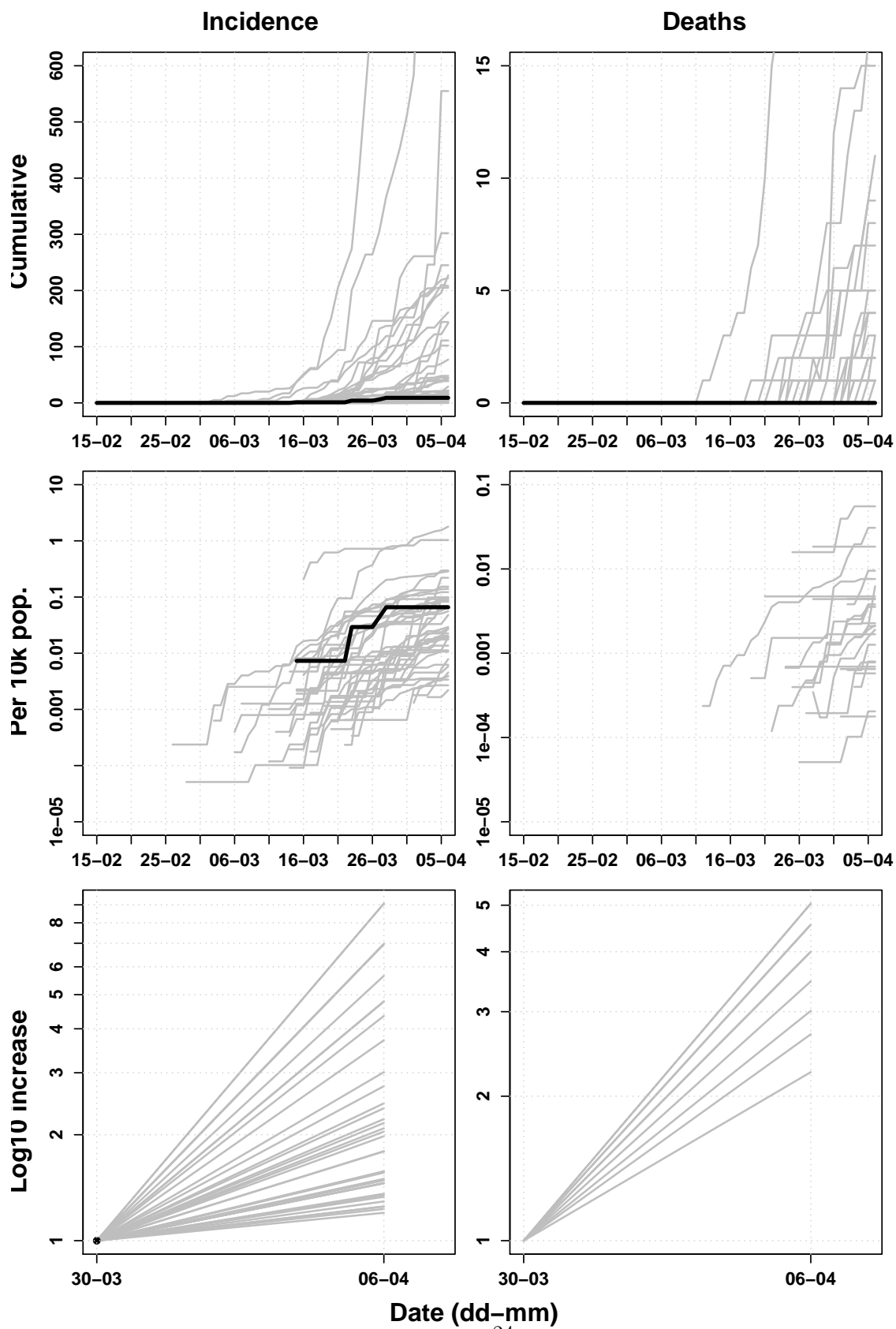


Eritrea

# Eritrea



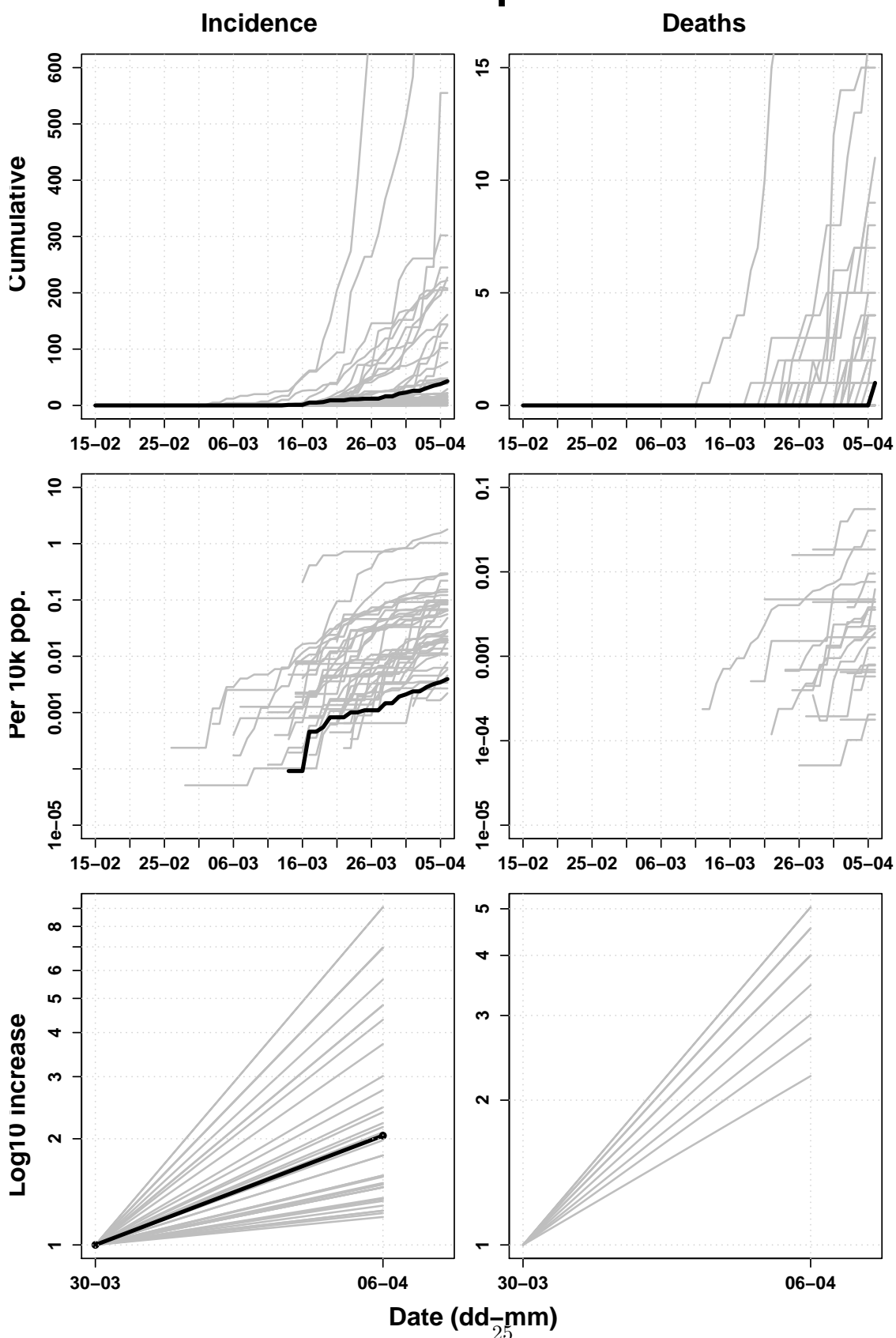
# Eswatini





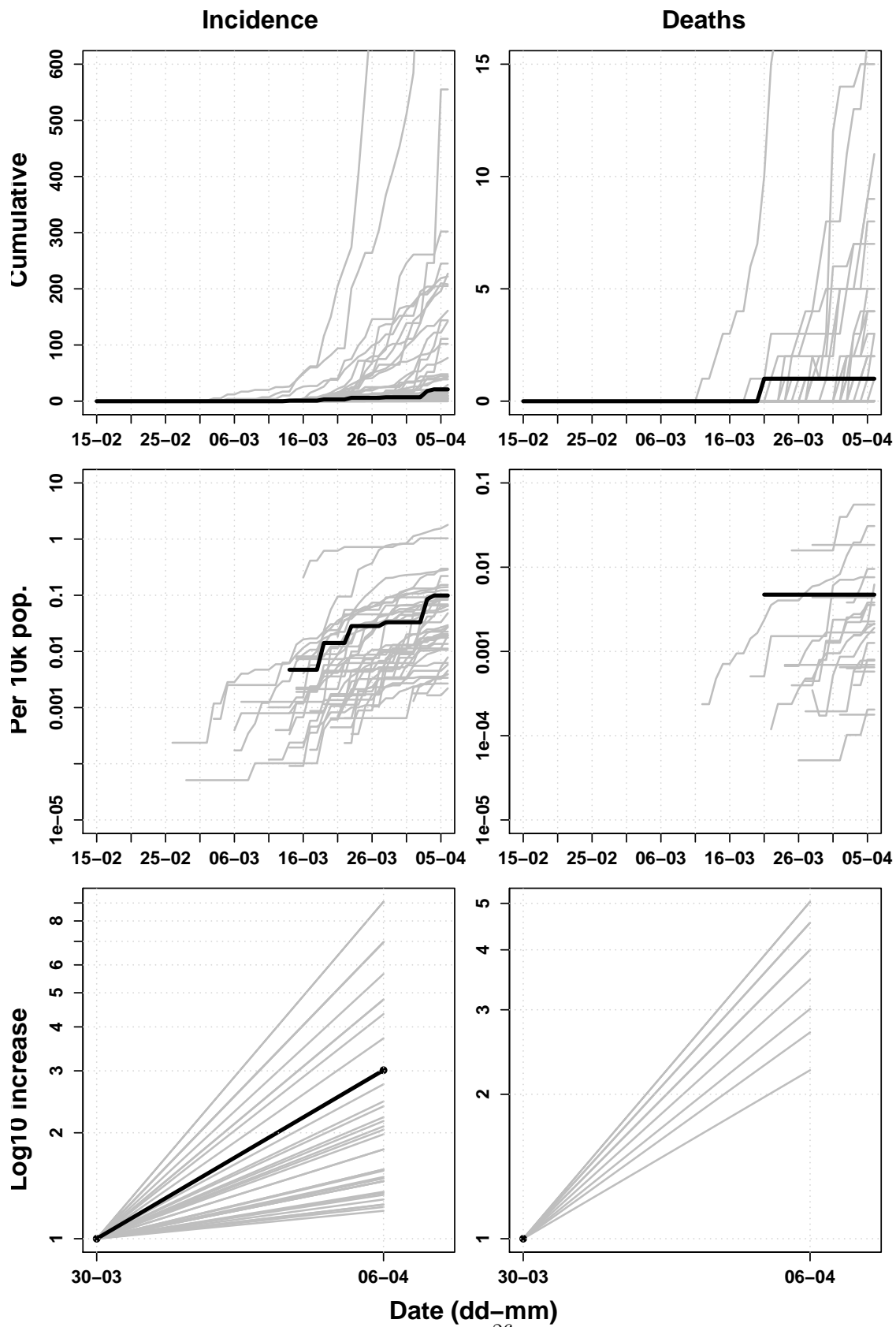
Ethiopia

# Ethiopia



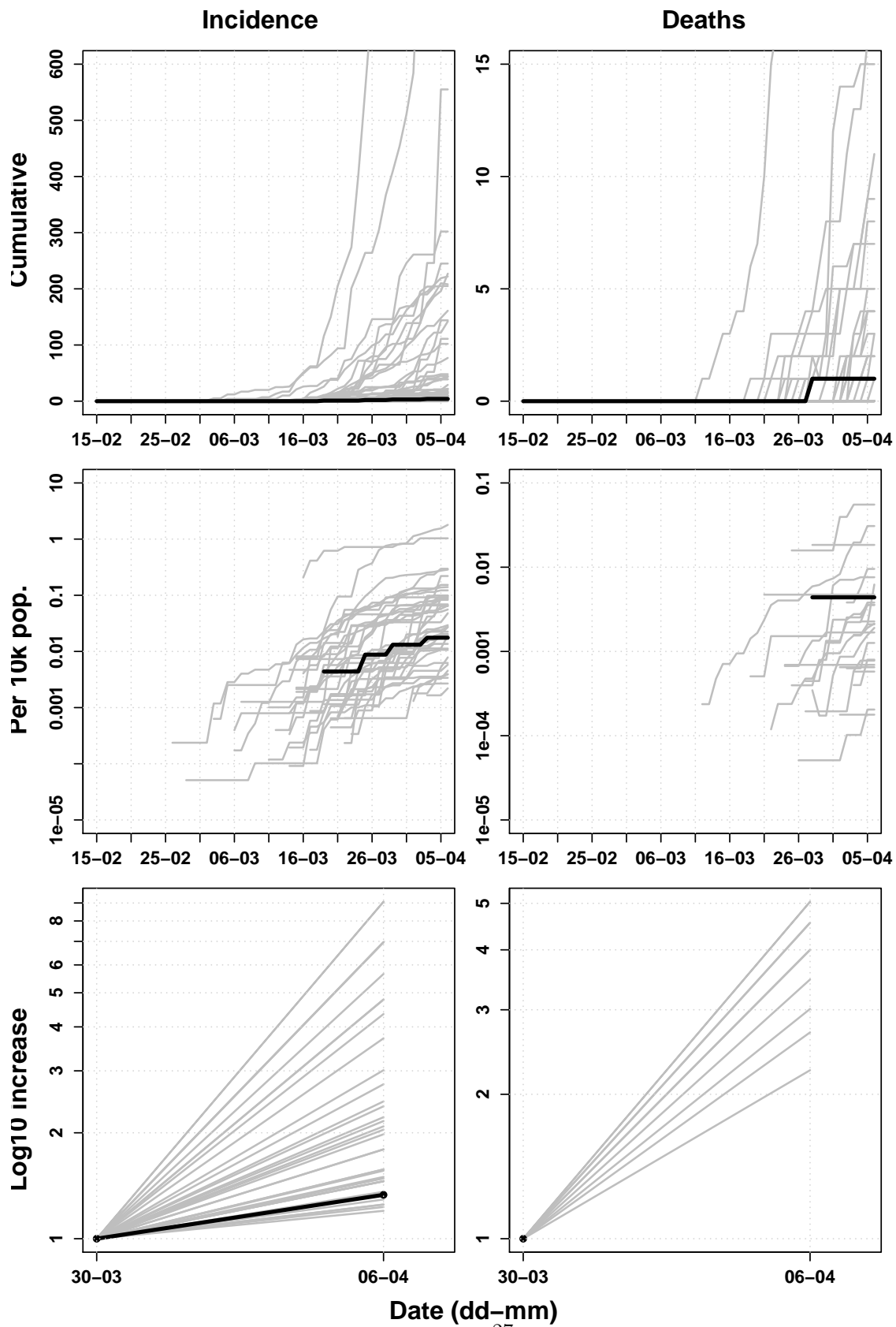
Gabon

# Gabon



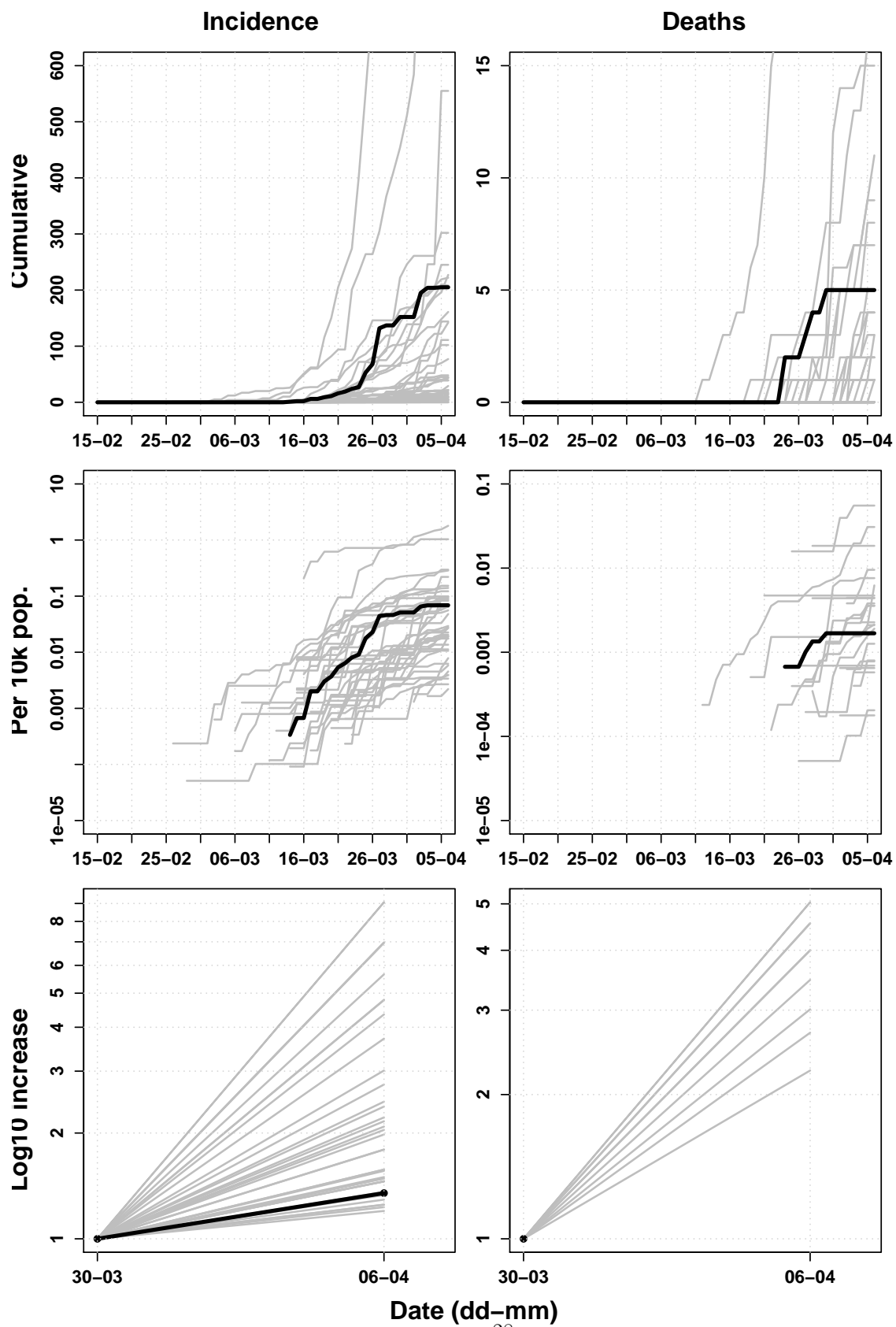
Gambia

# Gambia



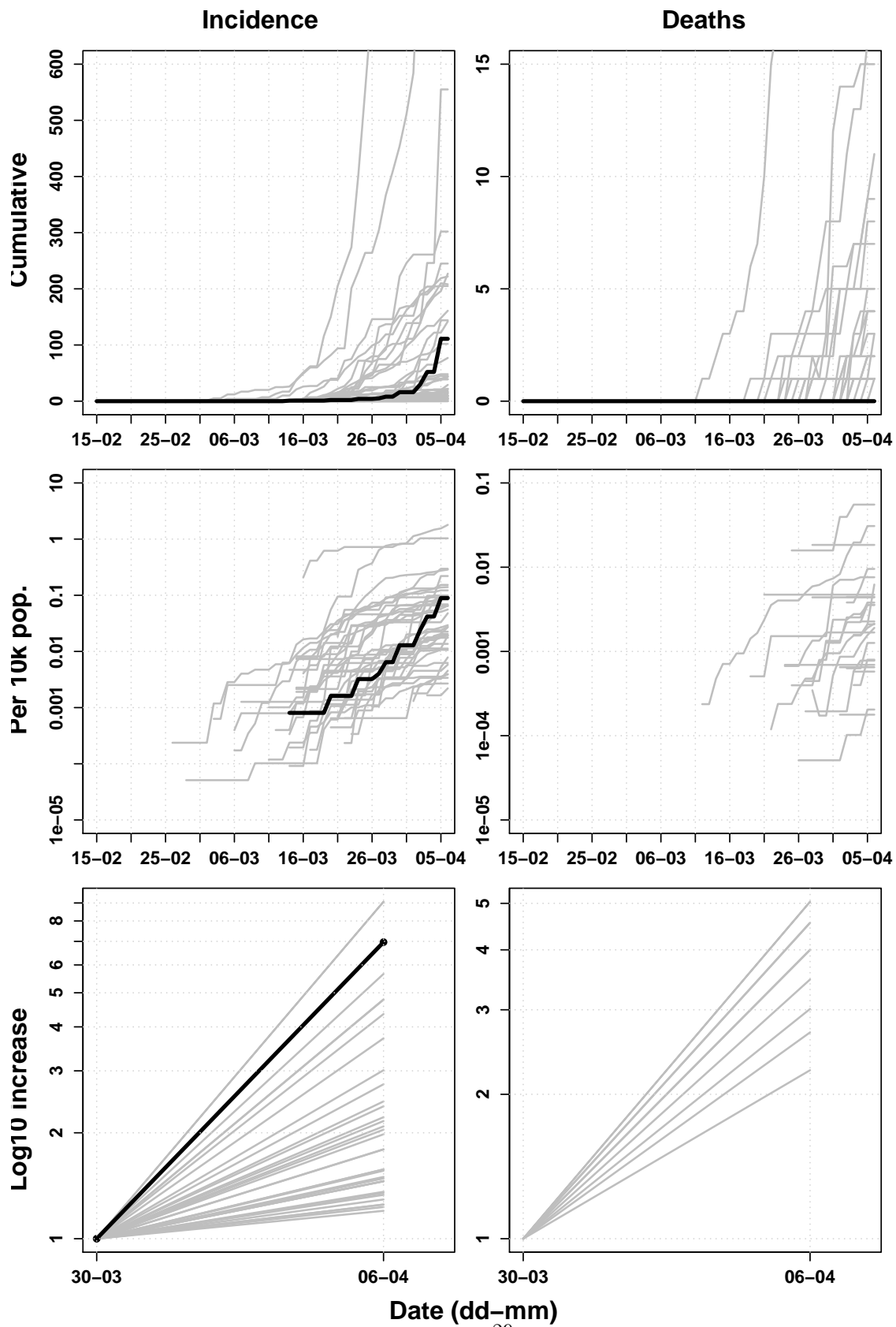
Ghana

# Ghana

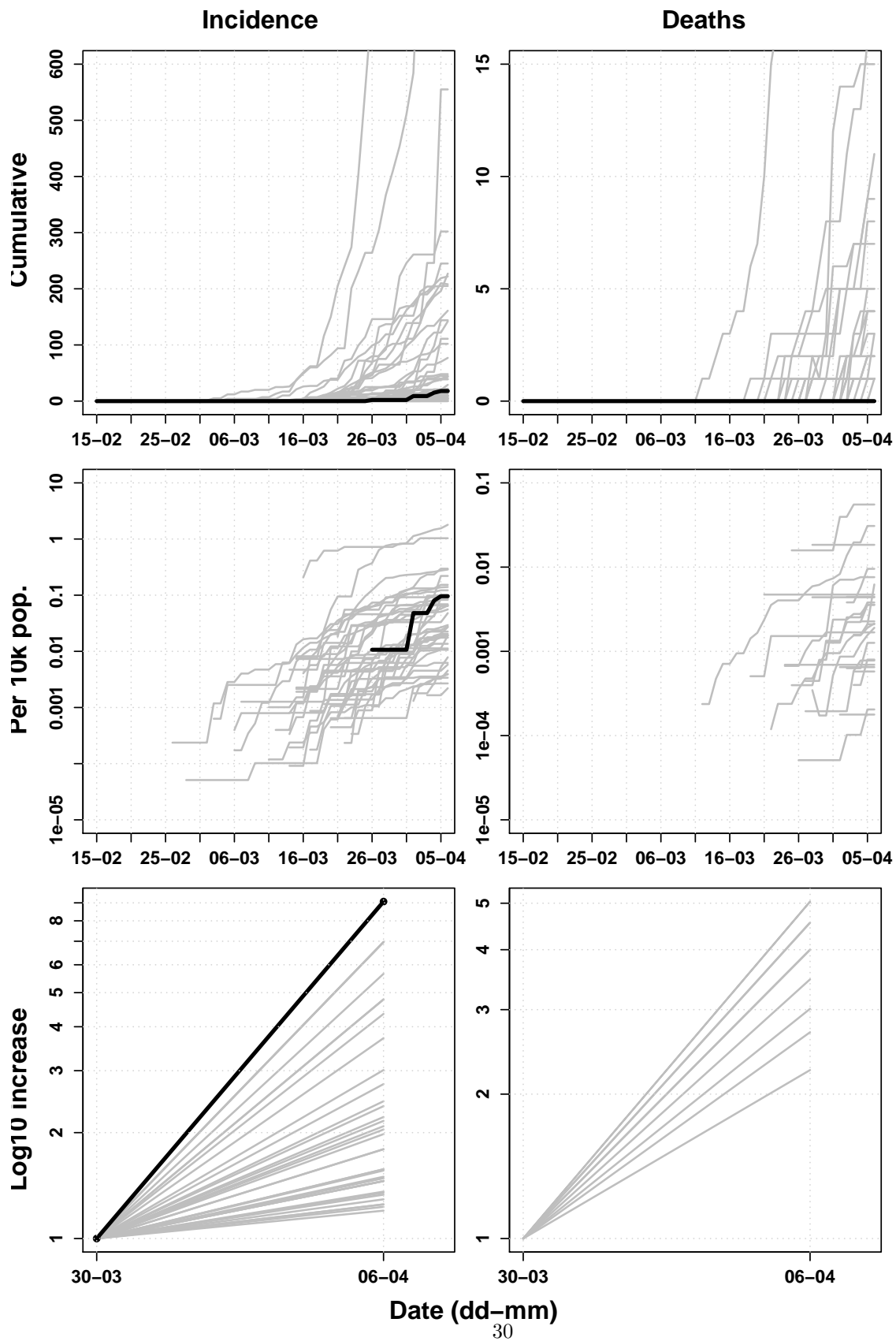


Guinea

# Guinea

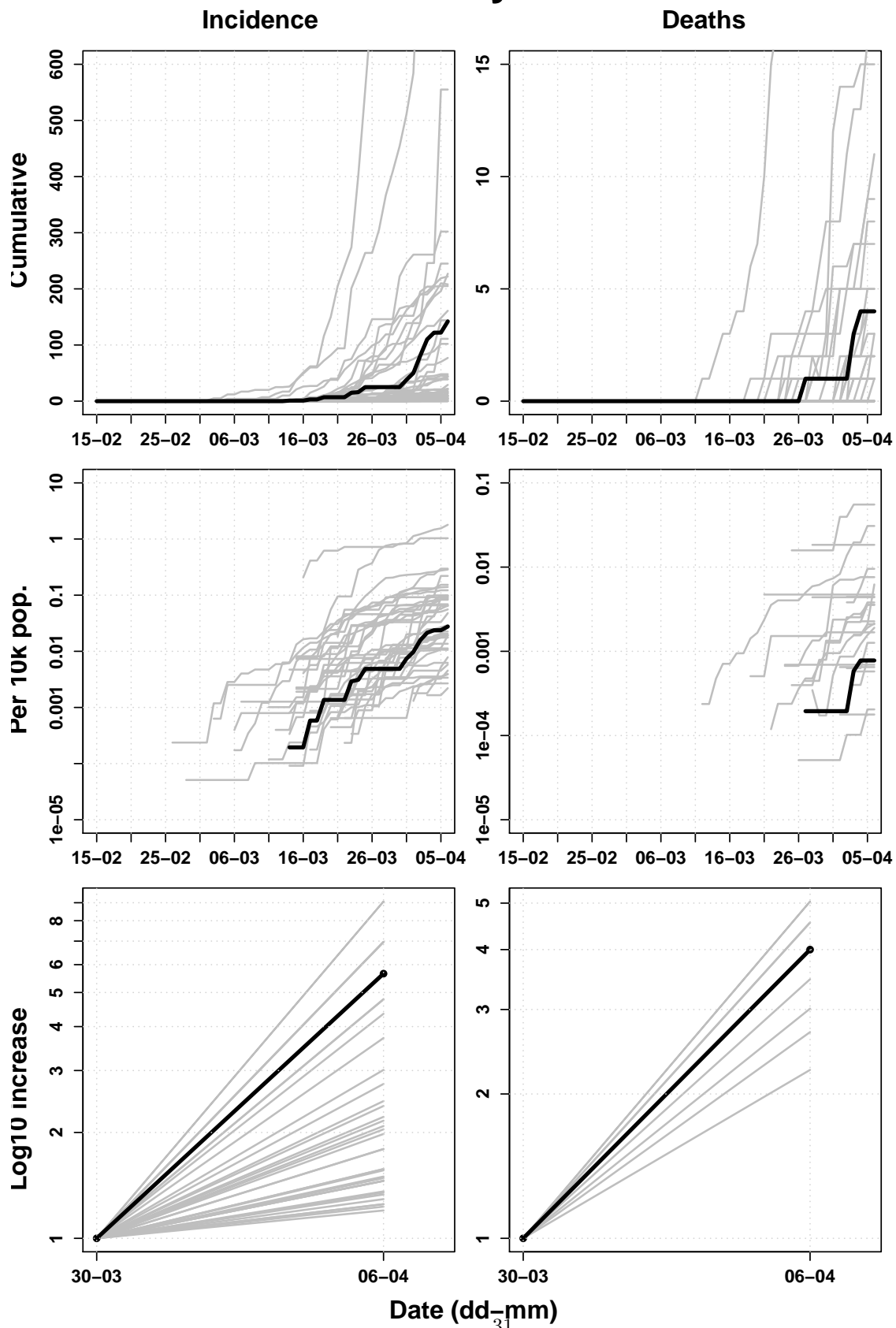


# Guinea Bissau



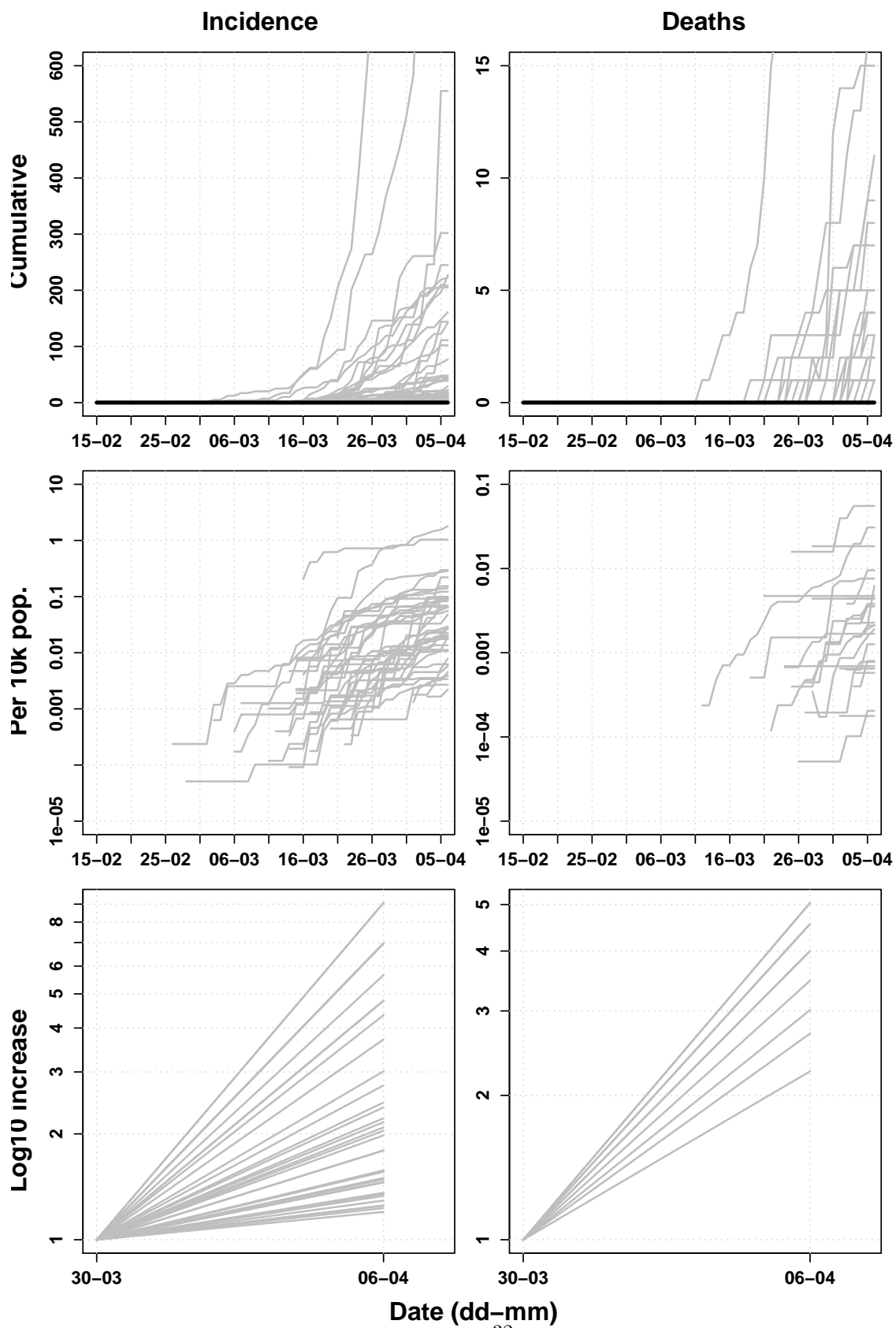
Kenya

# Kenya



Lesotho

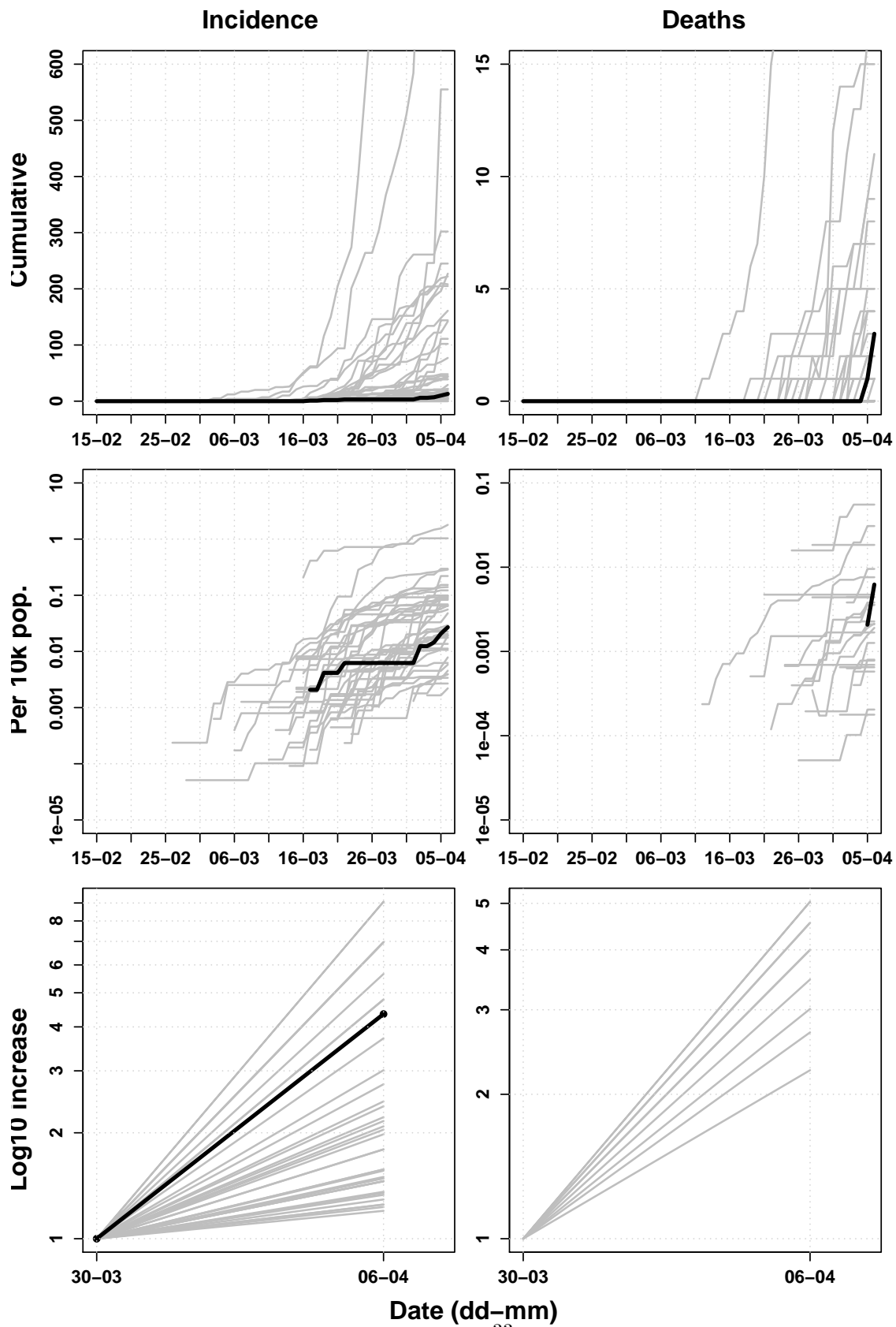
# Lesotho



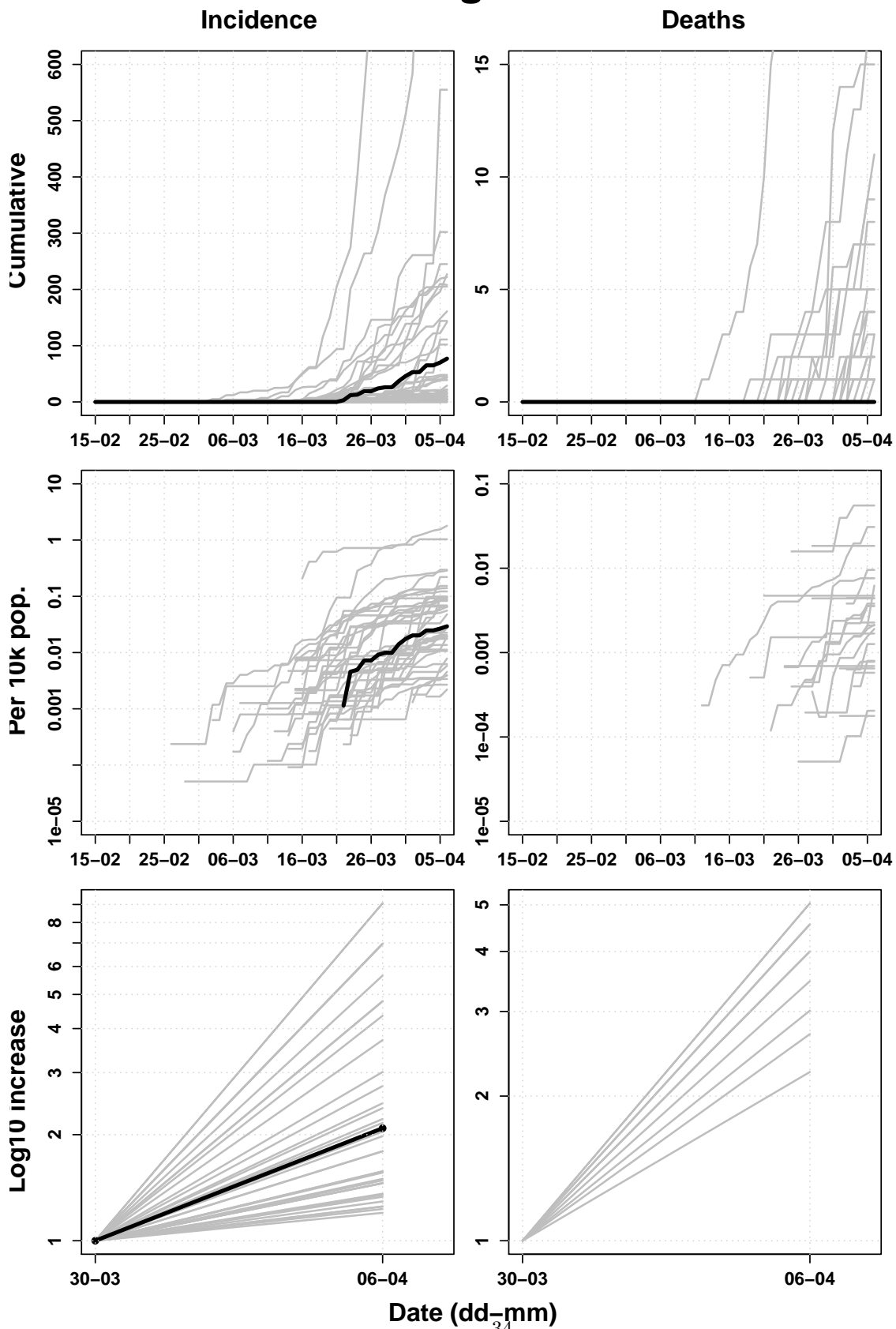


Liberia

# Liberia

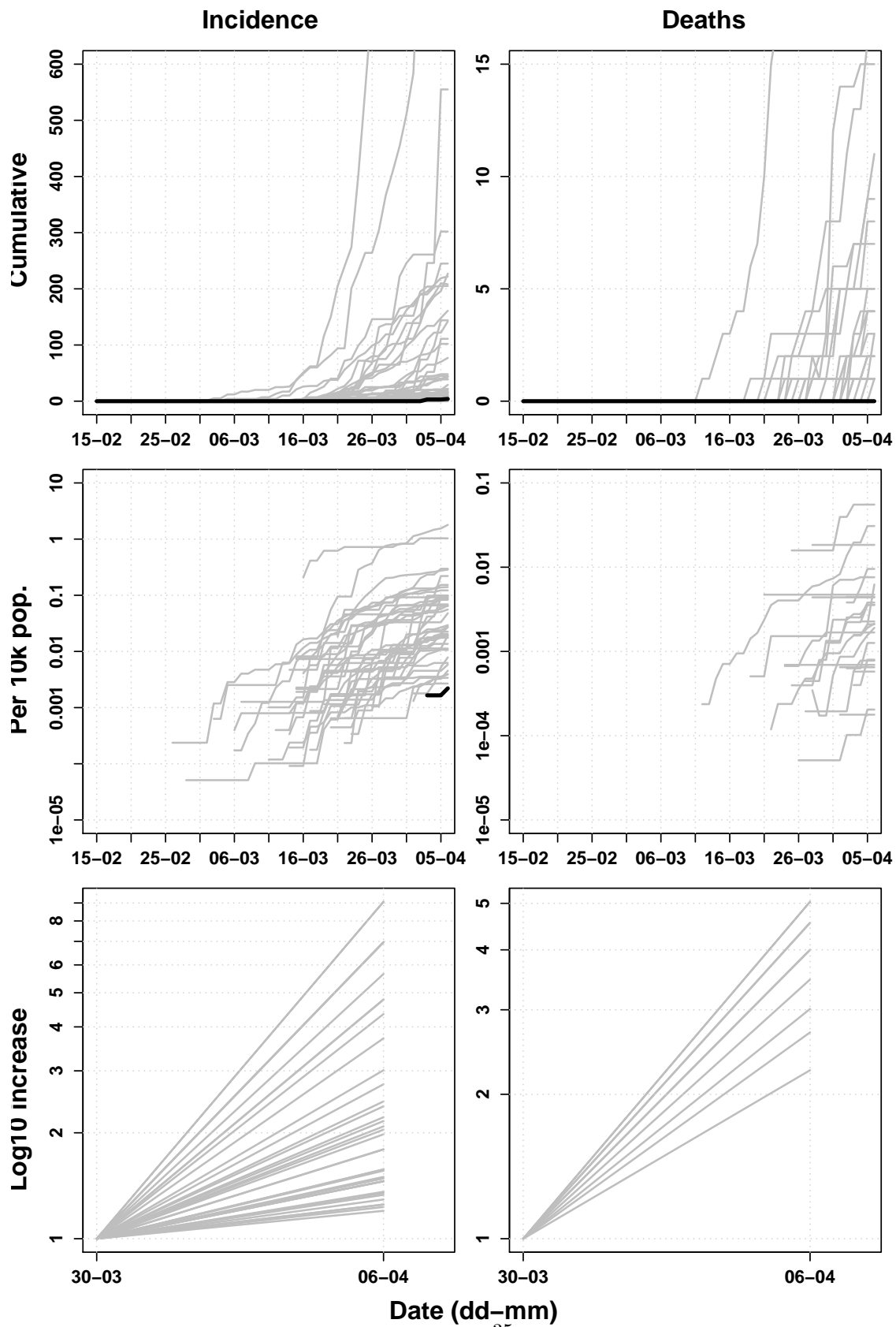


# Madagascar



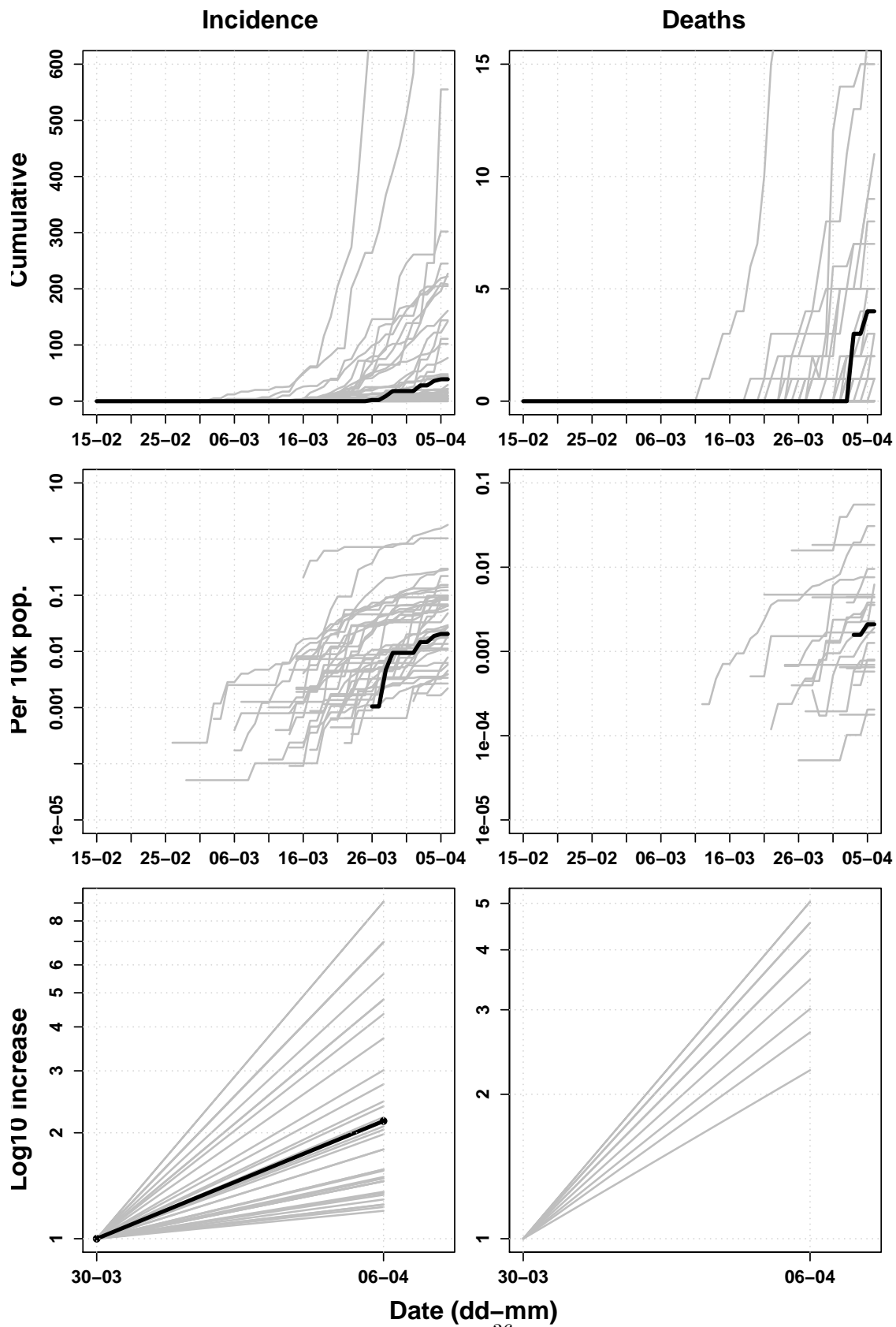
Malawi

# Malawi

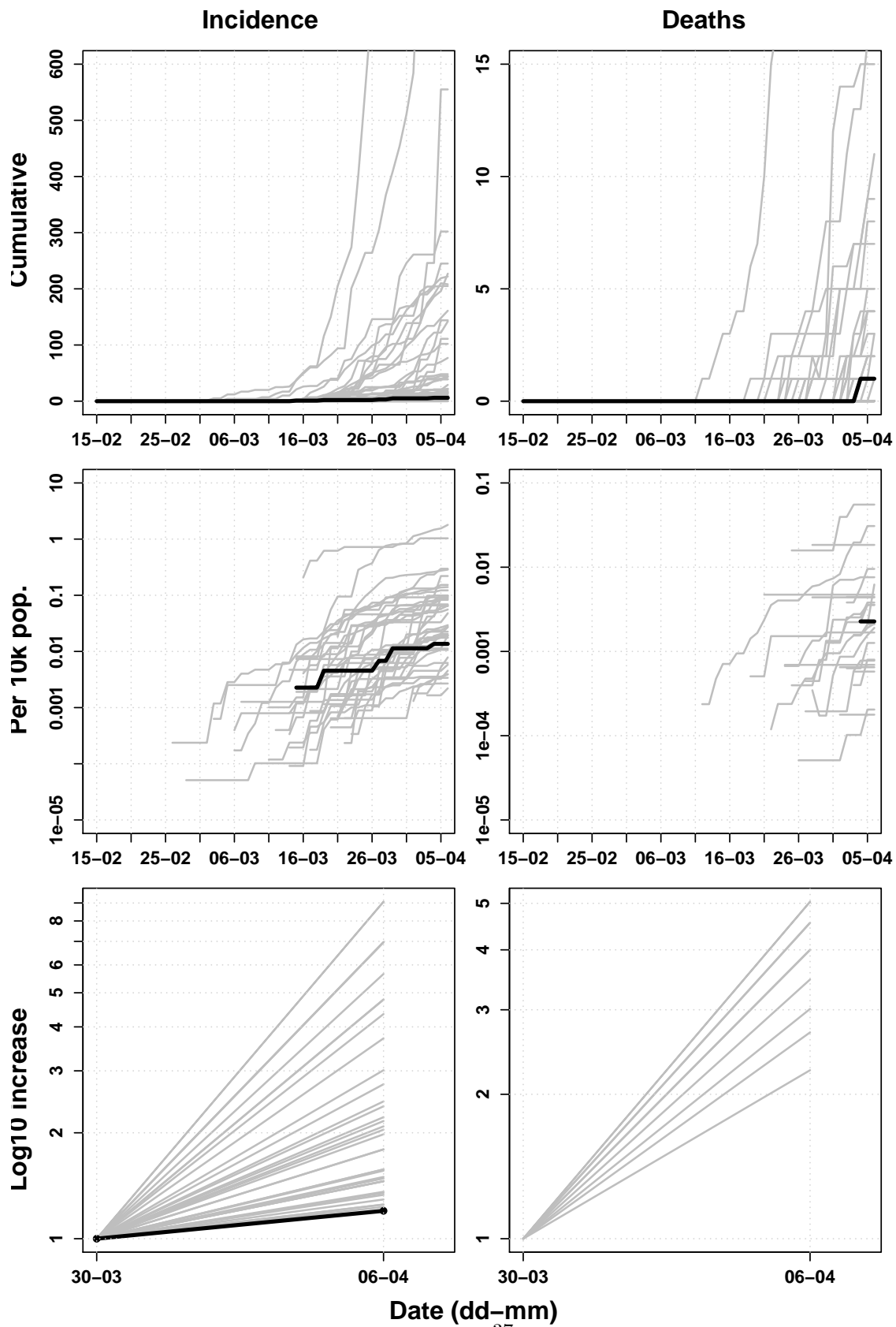


Mali

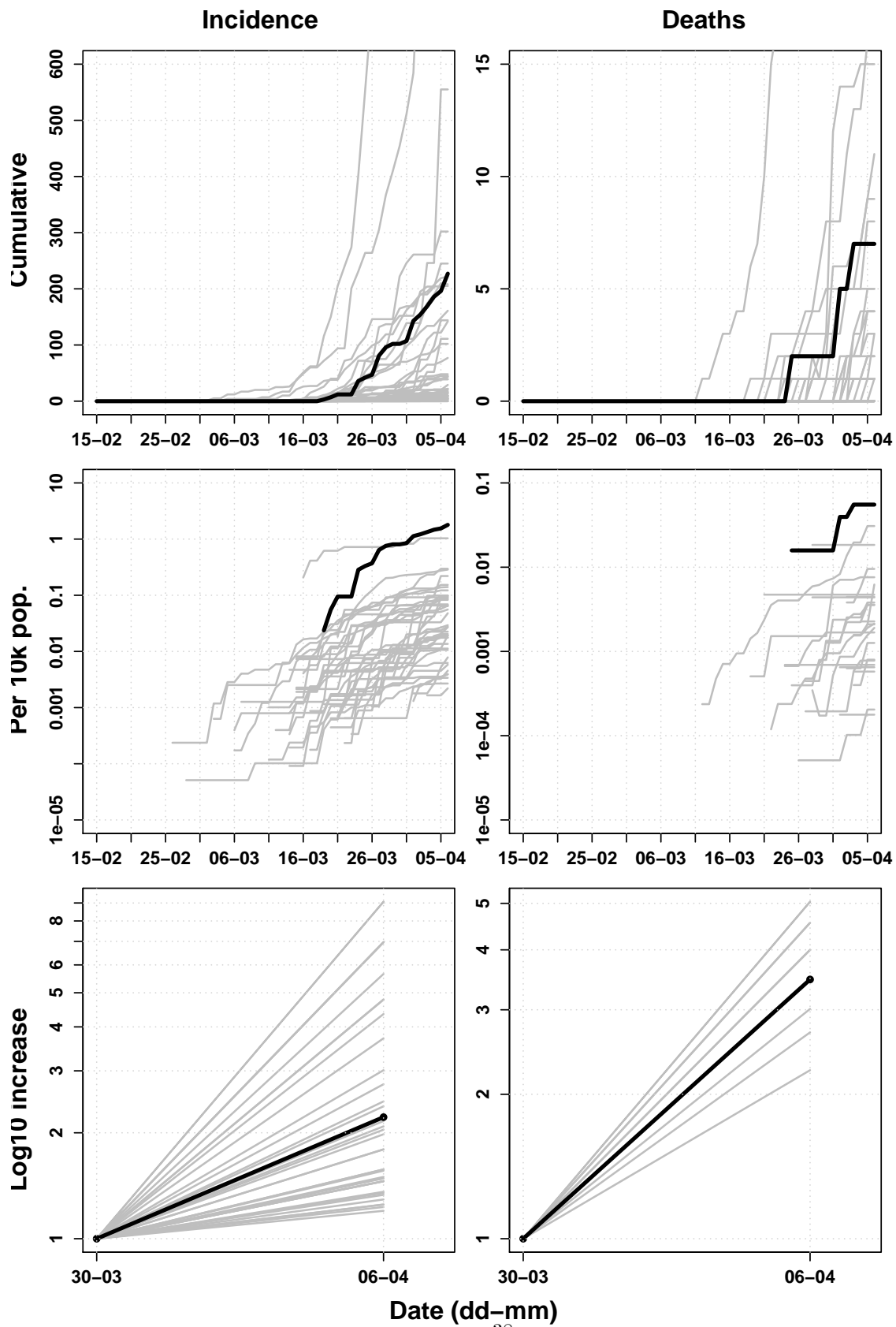
# Mali



# Mauritania

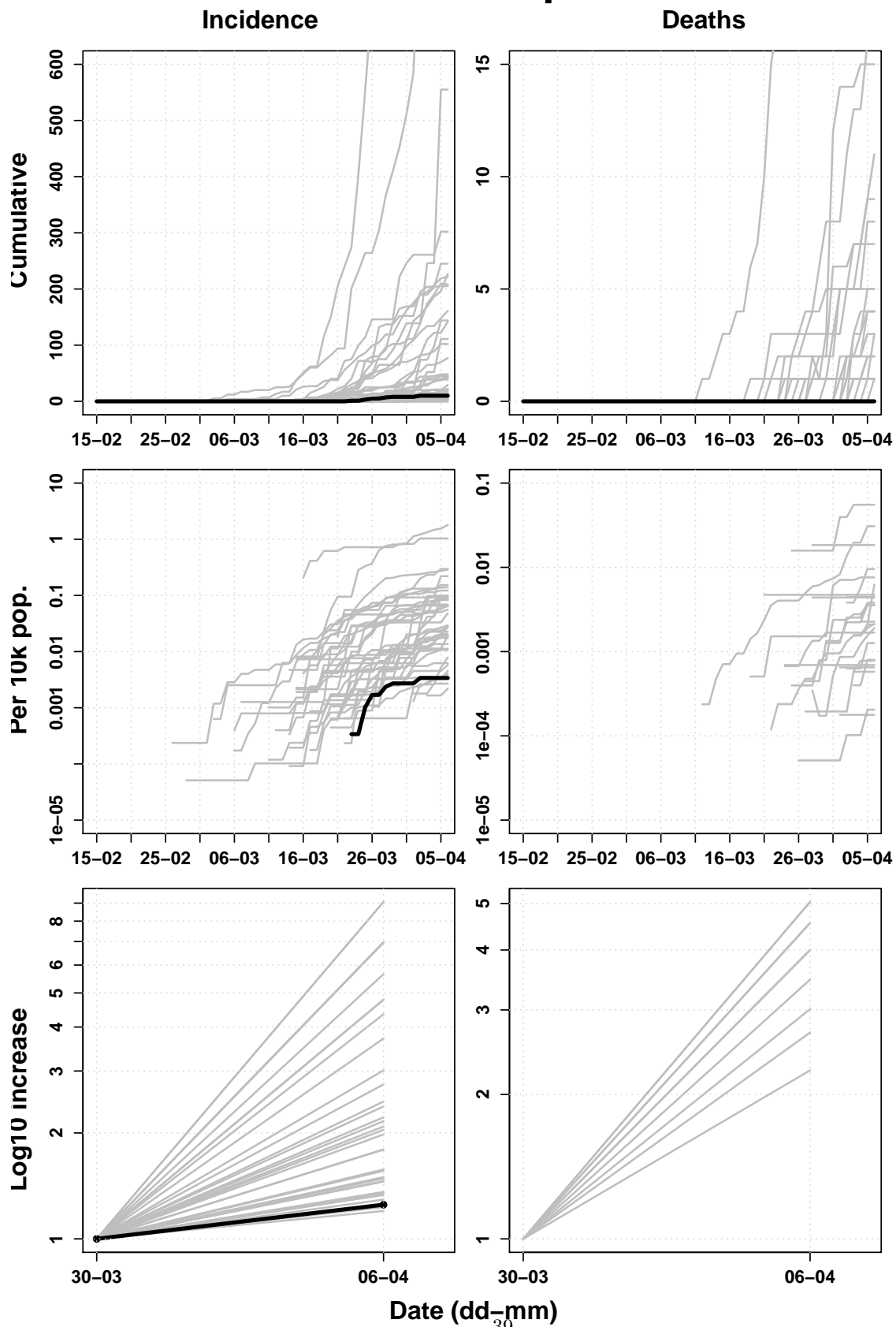


# Mauritius



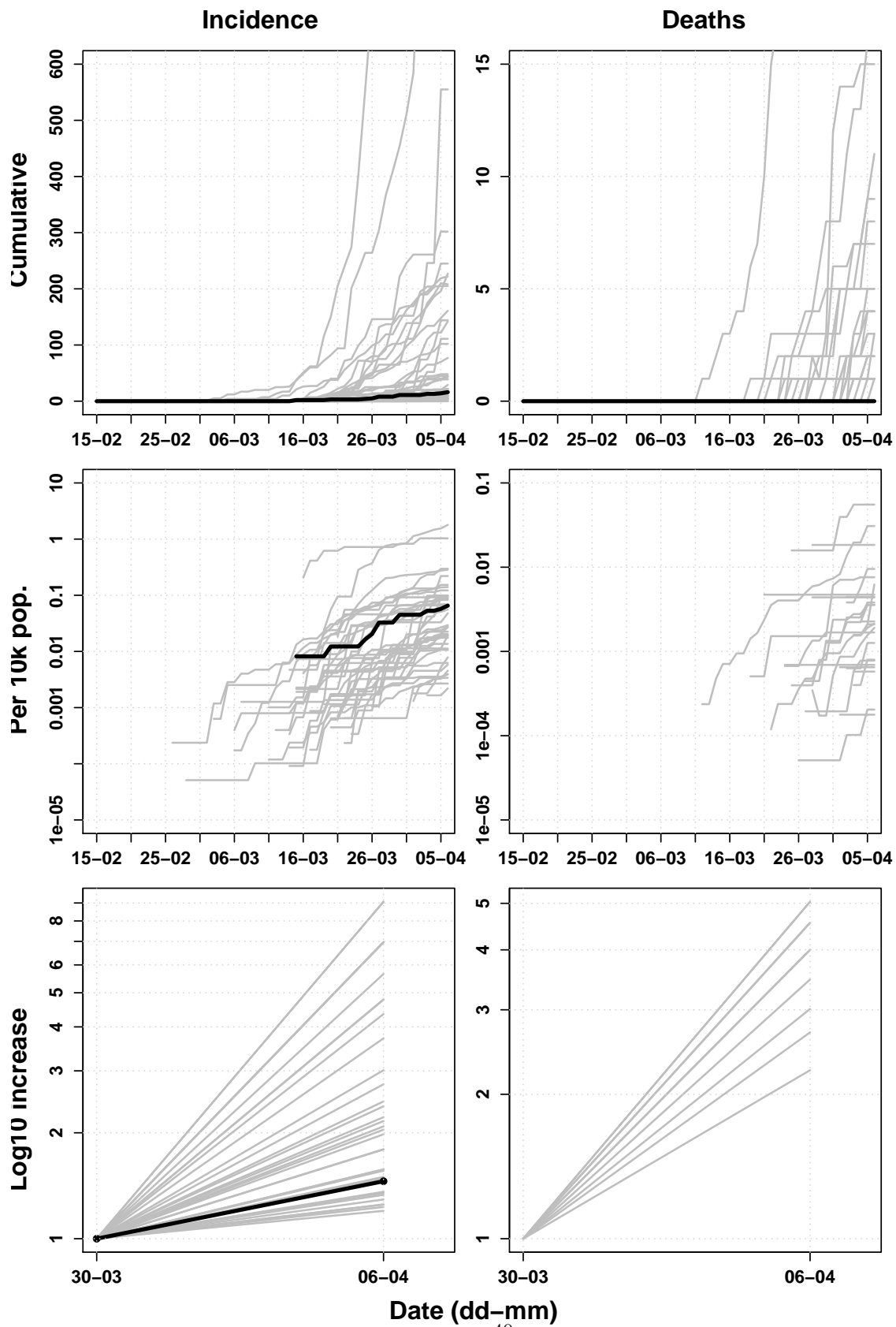
Mozambique

# Mozambique



Namibia

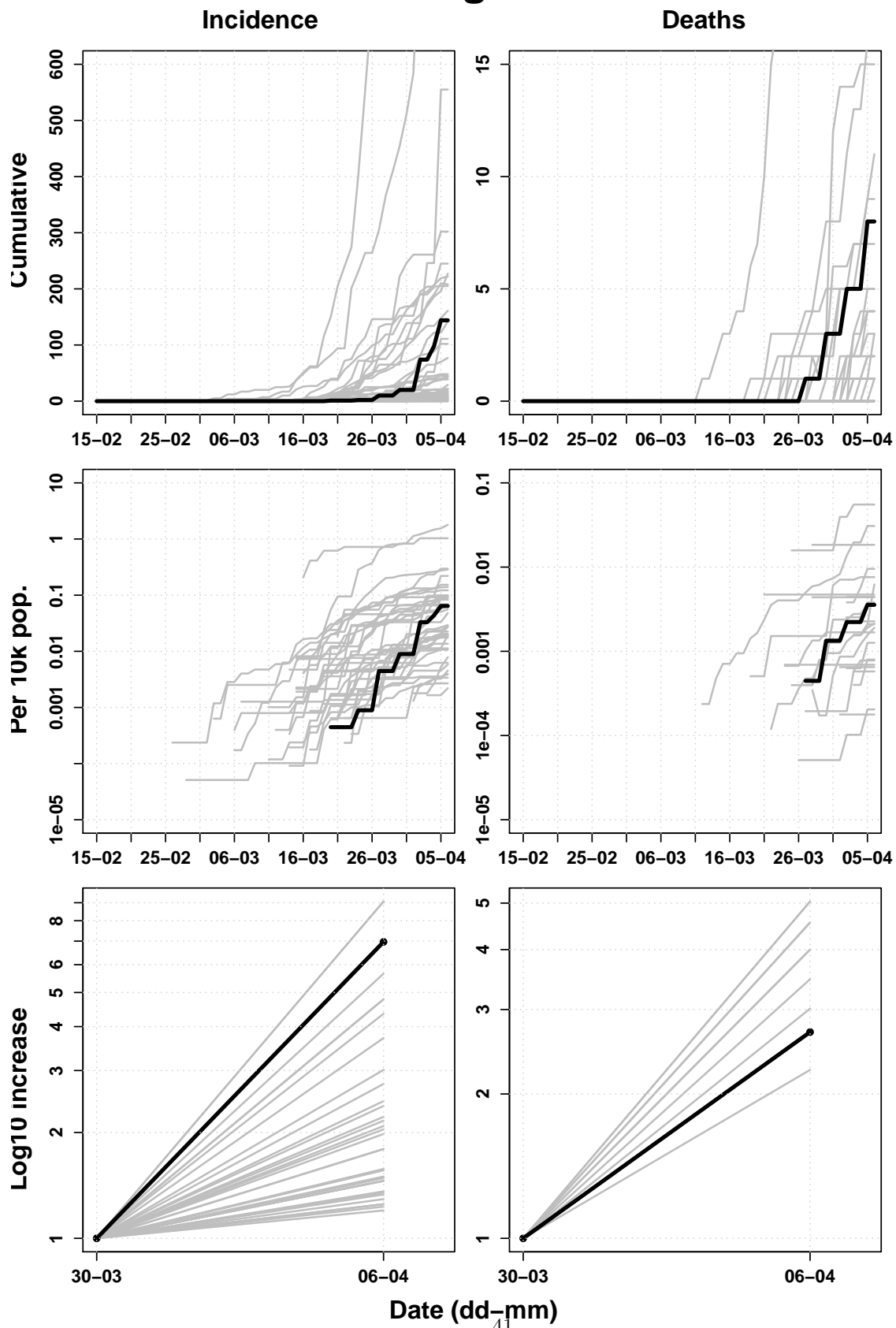
# Namibia





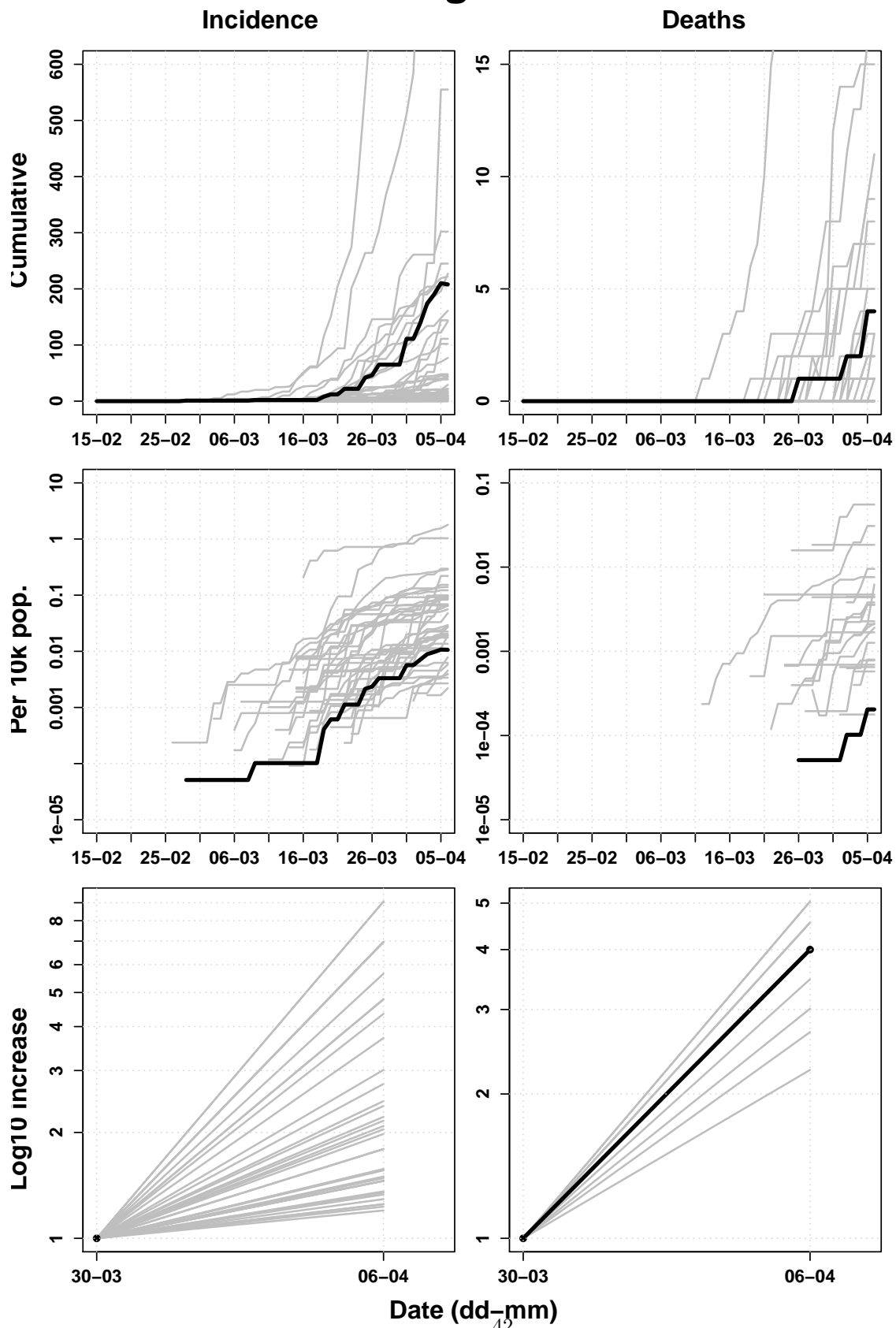
Niger

# Niger



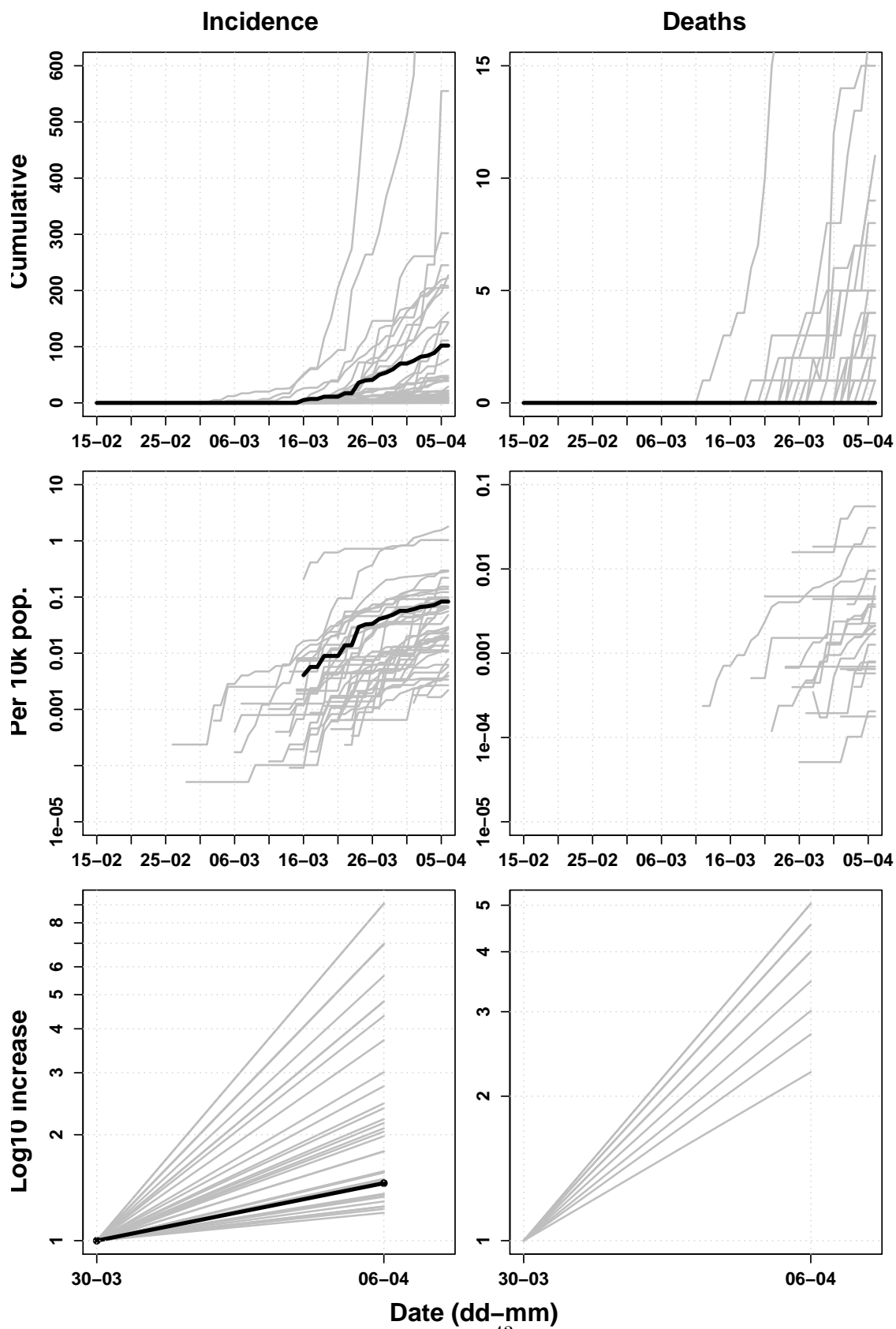
Nigeria

# Nigeria



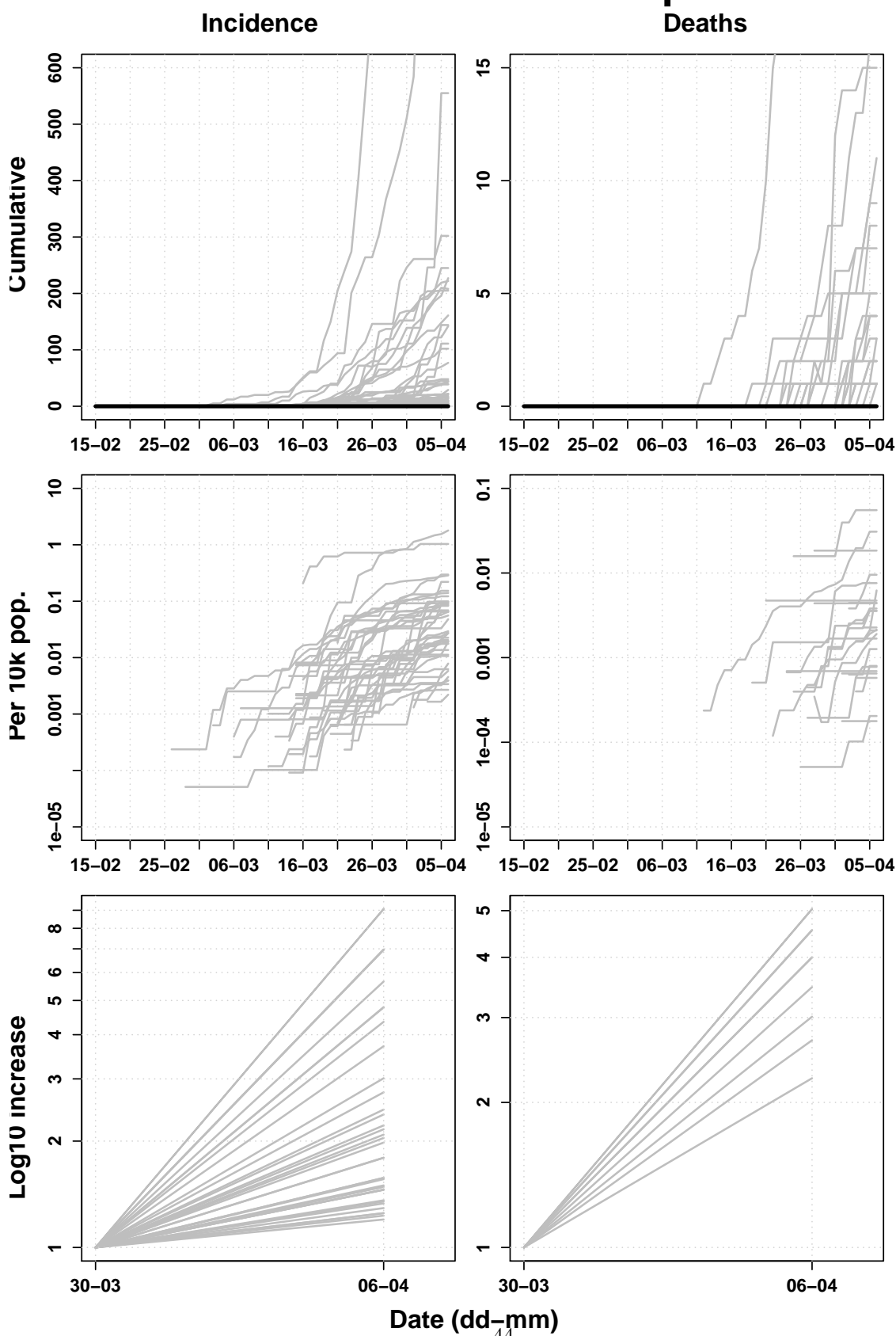
Rwanda

# Rwanda

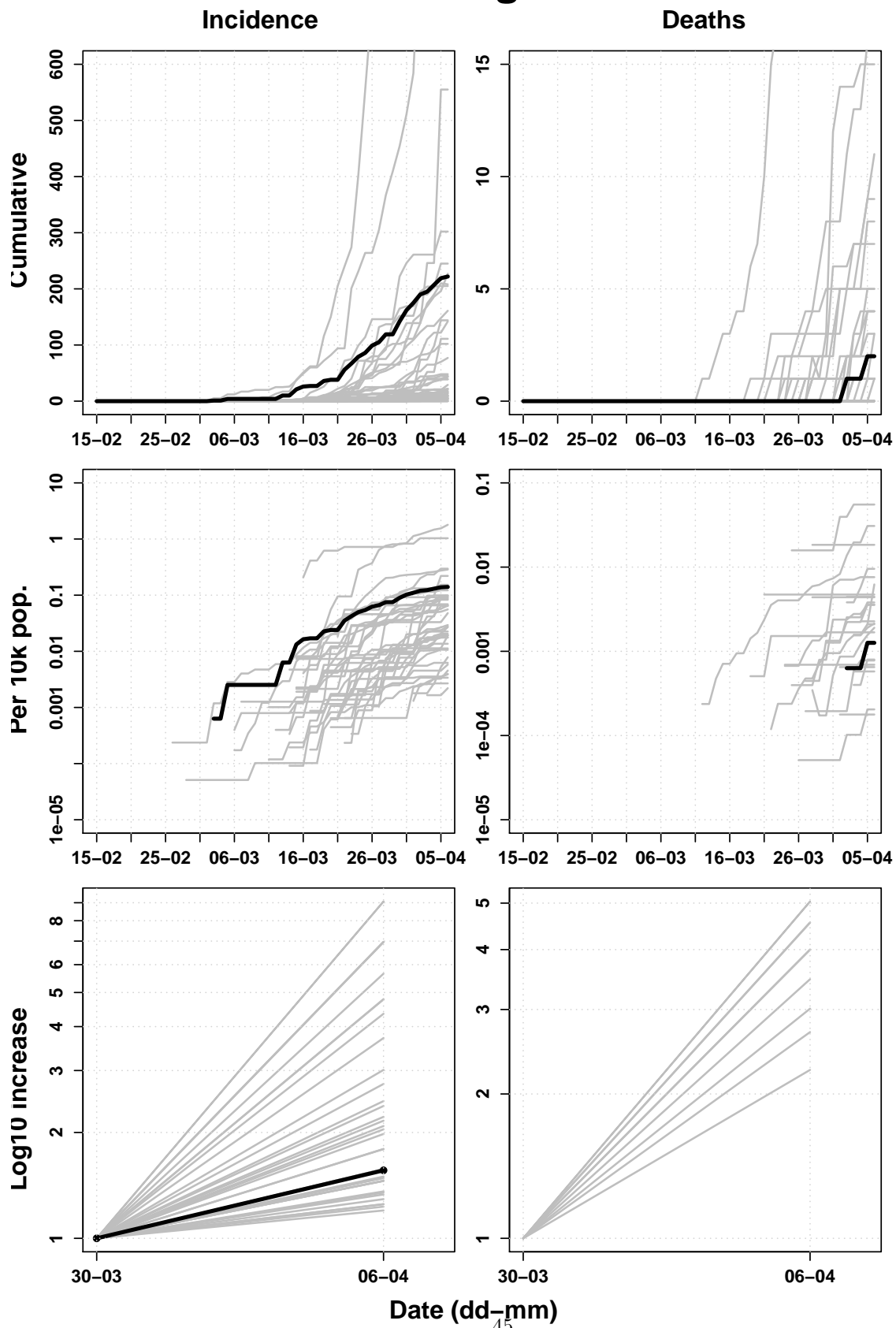


Sao Tome y Principe

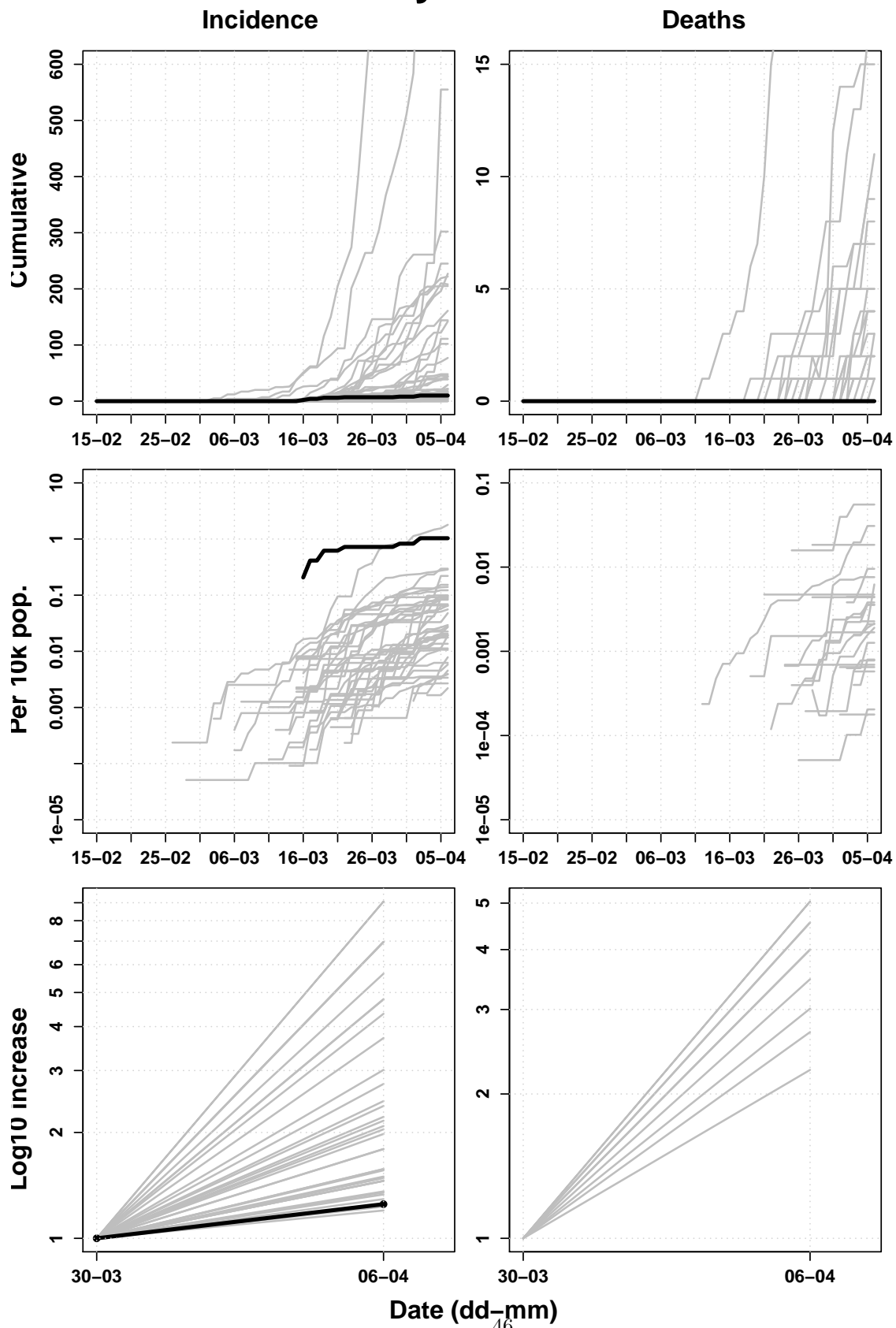
# Sao Tome and Principe



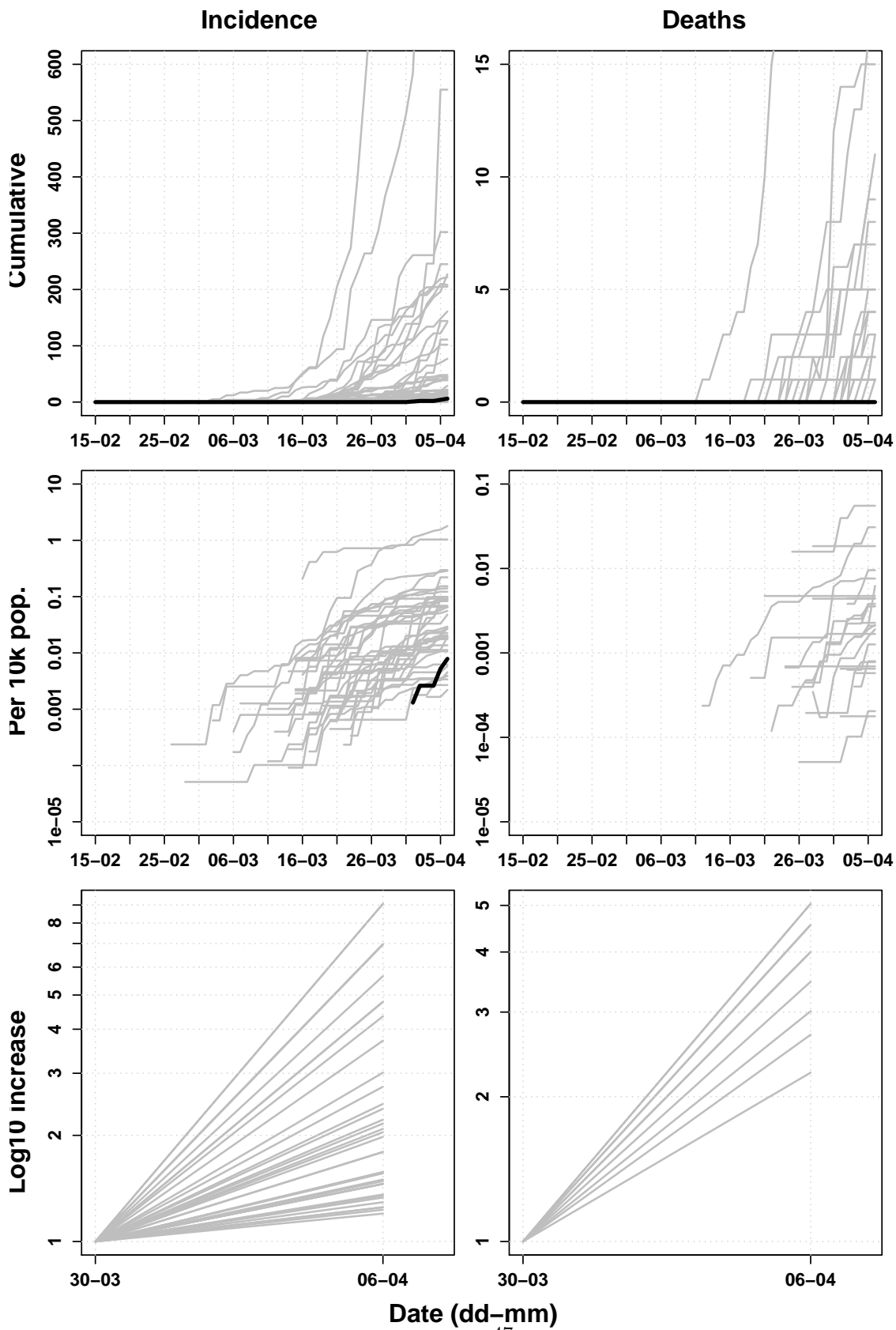
# Senegal



# Seychelles

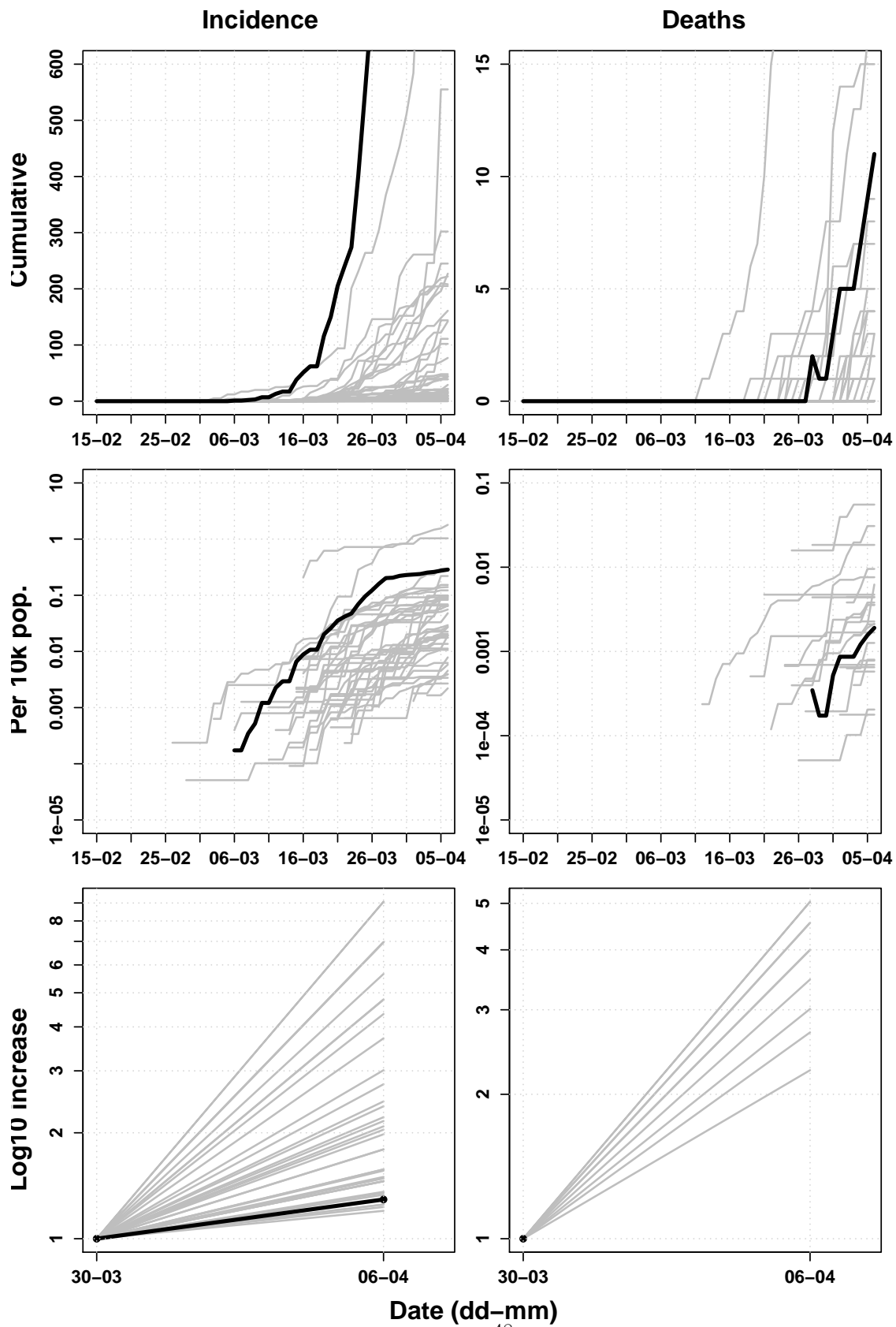


# Sierra Leone



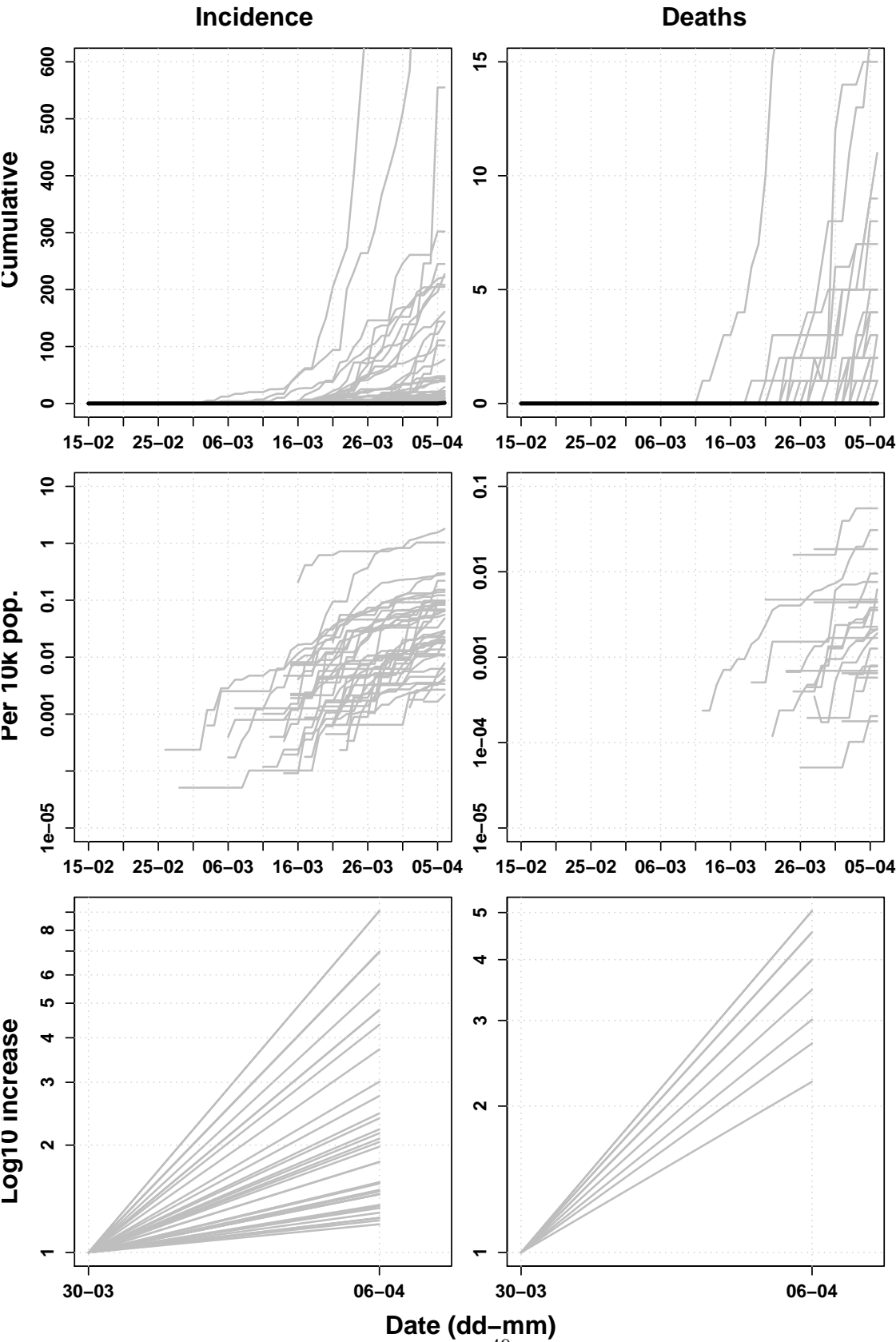
South Africa

## South Africa



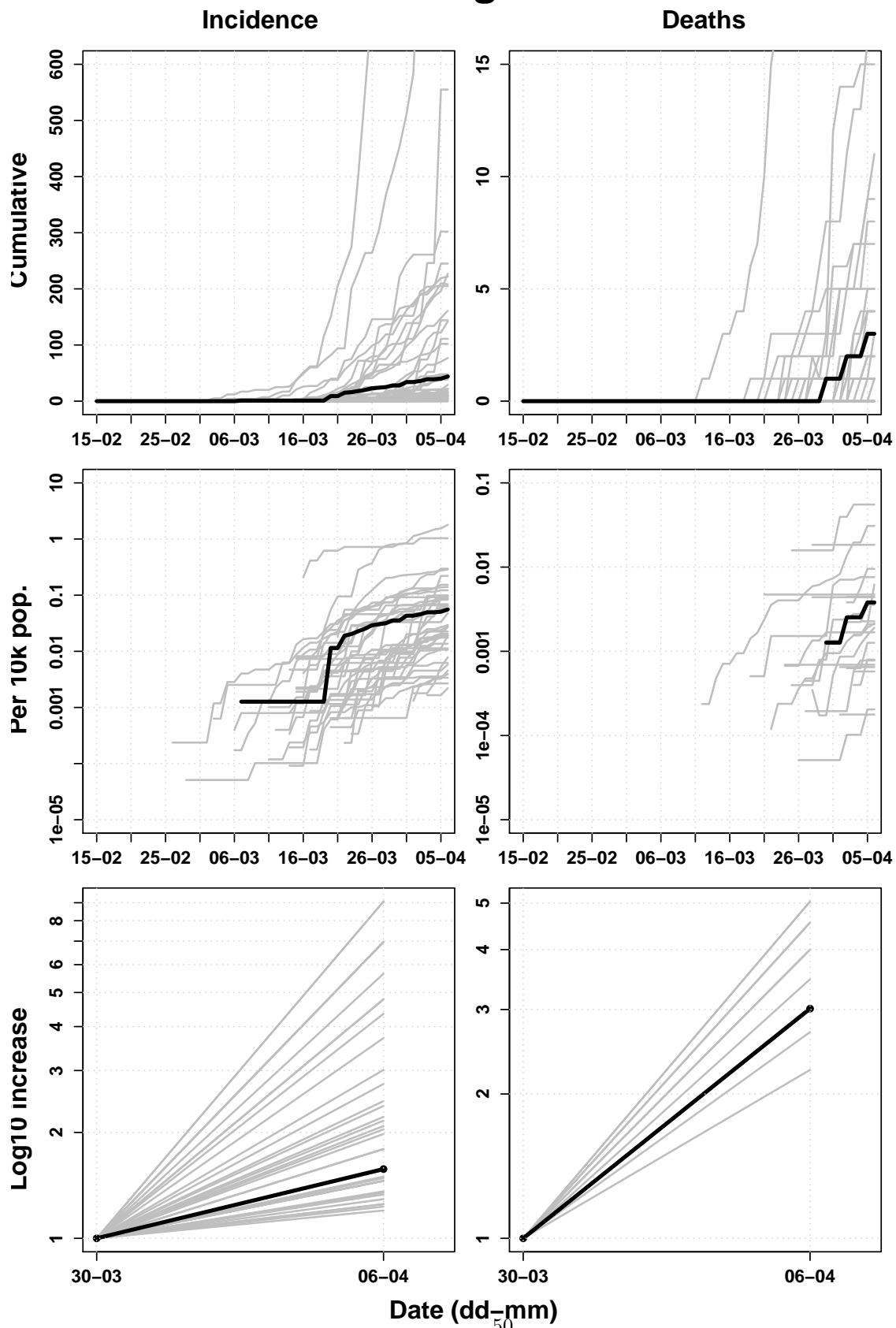


# South Sudan



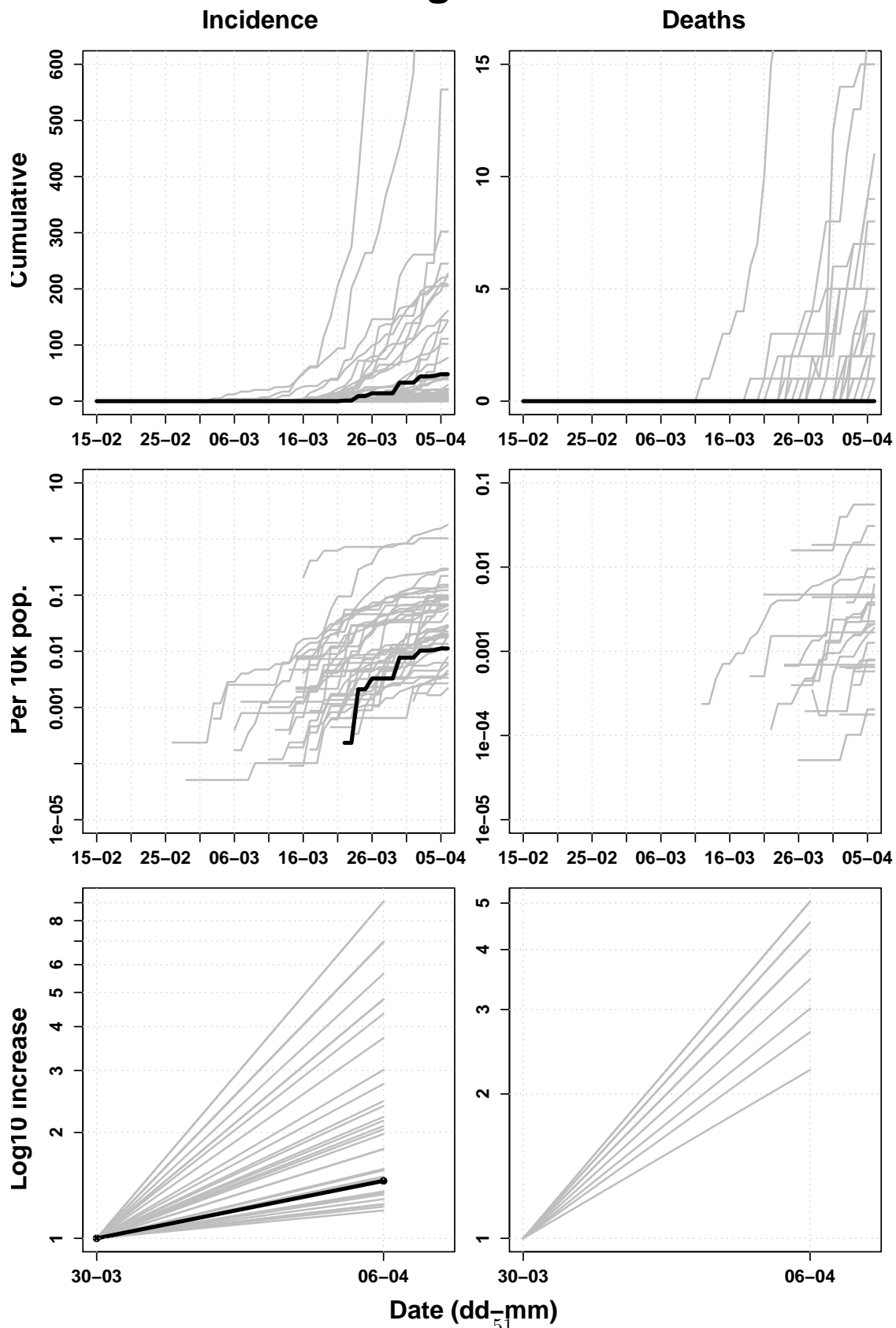
Togo

# Togo



Uganda

# Uganda

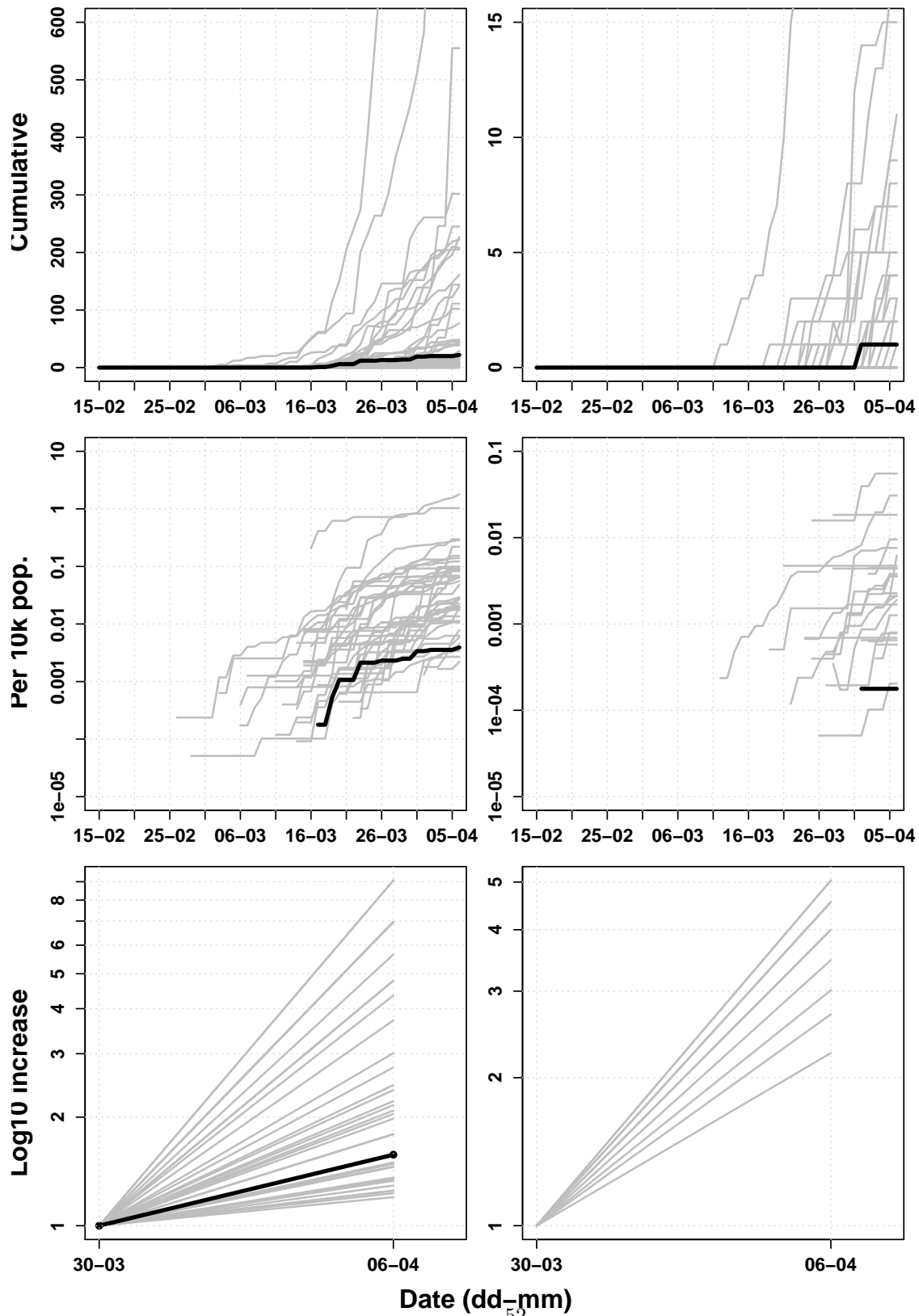


United Republic of Tanzania

# United Republic of Tanzania

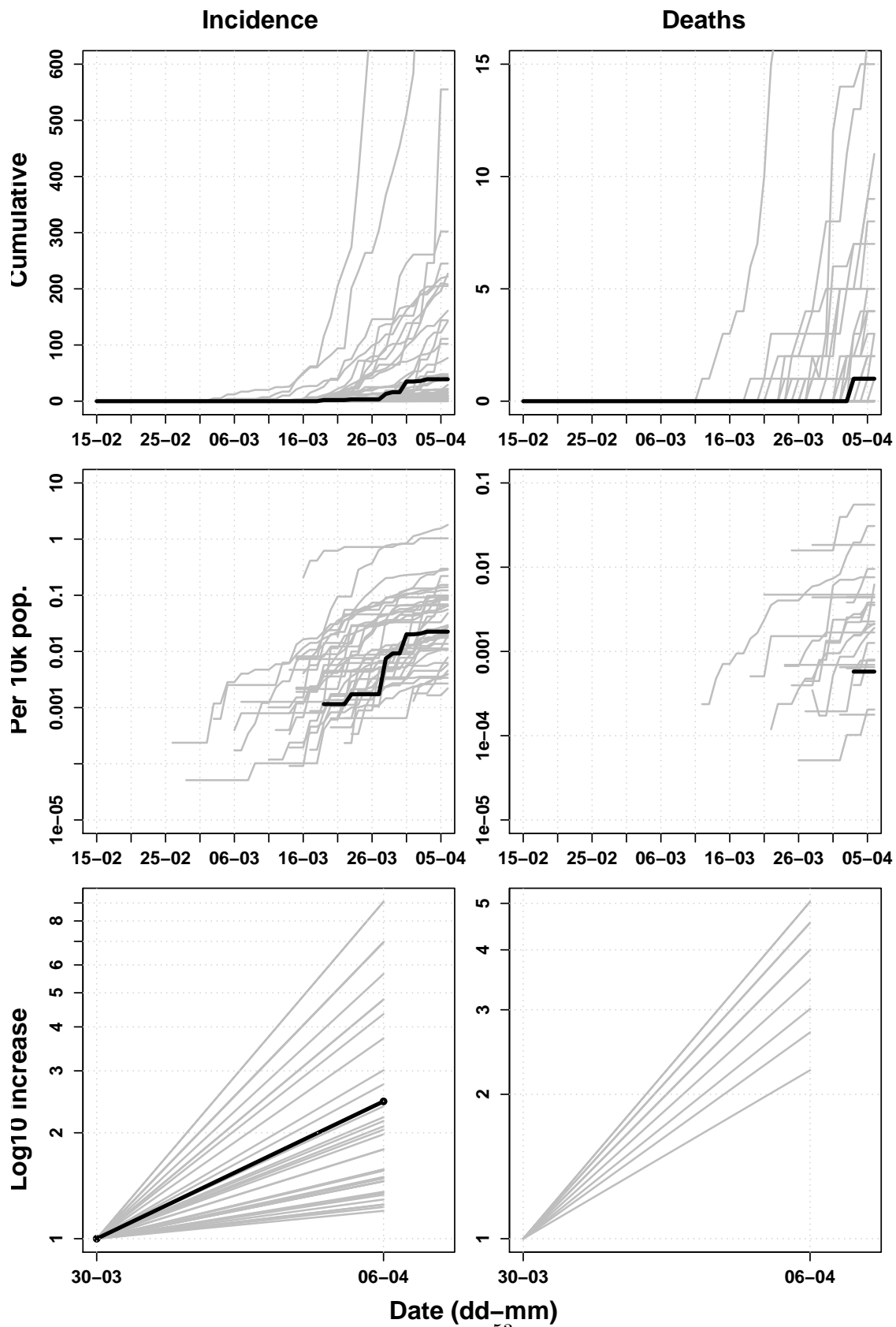
Incidence

Deaths

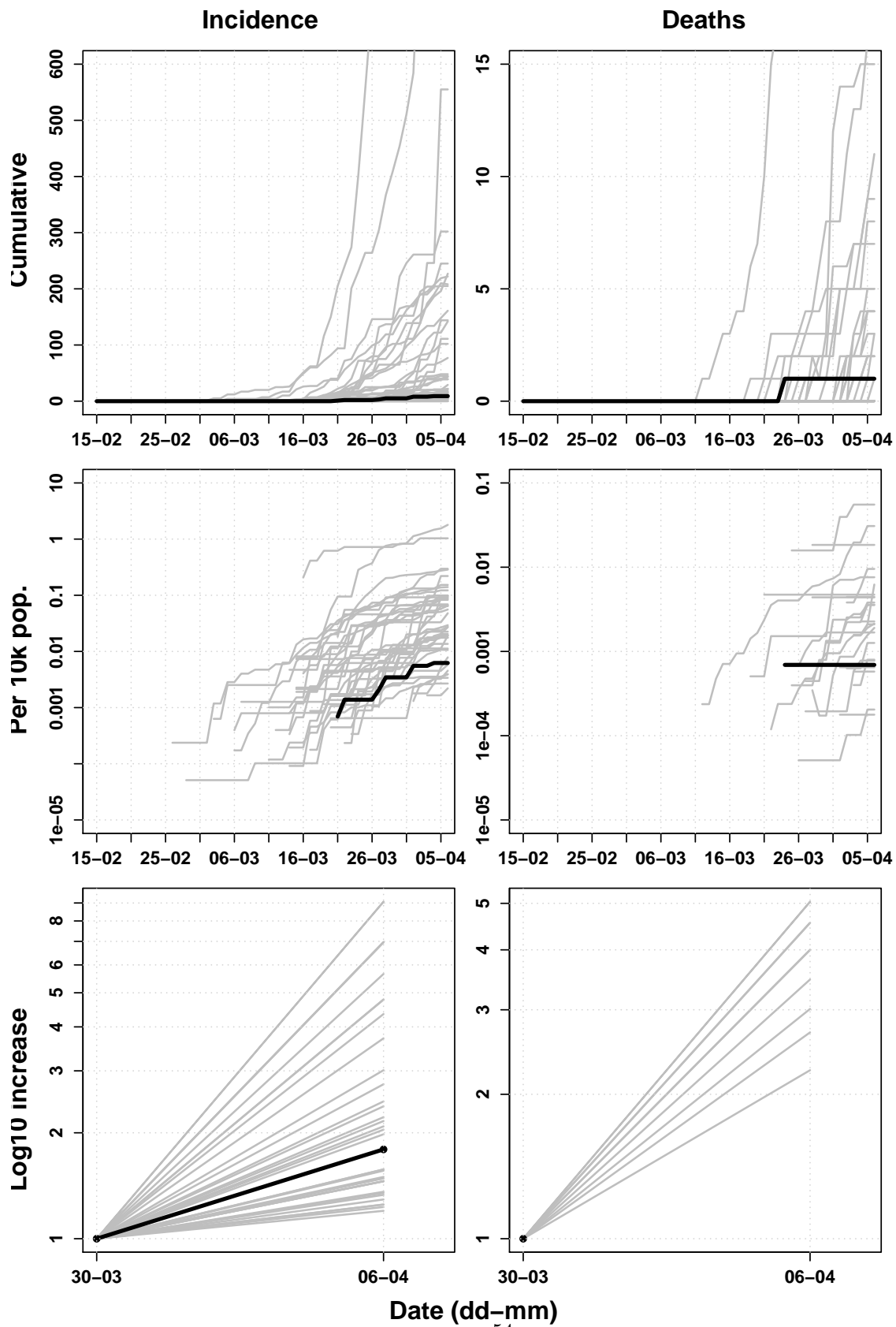


Zambia

# Zambia



# Zimbabwe



# Appendix

## Data

### Sources and access

- Case counts for countries in WHO African region from WHO Coronavirus disease (COVID-2019) situation reports <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (accessed 2400 06/04/2020).
- Death counts for countries in WHO African region from WHO Coronavirus disease (COVID-2019) situation reports <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (accessed 2400 06/04/2020).
- Population counts from the World Bank (2018) <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=ZG> (accessed 0900 30/03/2020).

### Doubling time calculations

Calculated over prior 7 days using method described by *E. Vynnycky & R. White (2010) An Introduction to Infectious Disease Modelling*, page 74.

Confidence intervals calculated using bootstrapping of a simulated dataset with Poisson error structure, using method published here: <https://doi.org/10.1101/2020.02.05.20020750>.

### Caveats

- Case count data are affected by any changes in testing strategy or testing effort over time and/or any variation in testing strategy or testing effort between regions.
- Case count data are likely a substantial under-representation of the true number of COVID-19 infections.
- Death data are considered more reliable but may lag behind case data by as much as 3 weeks.

## Extended data tables



## Cumulative incidence

Country	Cum. Incidence	ci.low	ci.upp
South Africa	1655	1586	1720
Algeria	1251	1191	1310
Cameroon	556	NA	NA
Burkina Faso	302	273	330
Cote d'Ivoire	245	221	272
Mauritius	227	205	252
Senegal	222	197	245
Ghana	205	183	229
Nigeria	199	175	223
Democratic Republic of the Congo	161	138	181
Niger	144	125	163
Kenya	142	122	162
Guinea	111	94	129
Rwanda	102	86	119
Madagascar	77	63	93
Uganda	48	37	60
Congo	45	34	56
Togo	44	34	56
Ethiopia	43	32	53
Mali	39	29	50
Zambia	39	28	50
Eritrea	29	21	37
Benin	22	14	29
United Republic of Tanzania	22	15	30
Gabon	21	14	29
Guinea Bissau	18	12	25
Equatorial Guinea	16	10	23
Namibia	16	10	23
Angola	14	8	20
Liberia	13	7	19
Mozambique	10	5	16
Seychelles	10	5	15
Central African Republic	9	4	14
Chad	9	4	14
Eswatini	9	5	14
Zimbabwe	9	4	14
Mauritania	6	2	10
Sierra Leone	6	3	10
Cape Verde	5	2	9
Botswana	4	1	7
Gambia	4	1	7
Malawi	4	1	8
Burundi	3	0	6
South Sudan	1	0	3
Comoros	0	NA	NA
Lesotho	0	NA	NA
Sao Tome and Principe	0	NA	NA

## Cumulative incidence per 10,000 population

Country	Cum. Incidence per 10k pop.	ci.low	ci.upp
Cameroon	10.2250	NA	NA
Mauritius	1.7940	1.6202	1.9916
Seychelles	1.0335	0.5167	1.5502
Algeria	0.2962	0.2820	0.3102
South Africa	0.2864	0.2745	0.2977
Burkina Faso	0.1529	0.1382	0.1671
Senegal	0.1400	0.1243	0.1545
Equatorial Guinea	0.1222	0.0764	0.1757
Gabon	0.0991	0.0661	0.1368
Cote d'Ivoire	0.0977	0.0882	0.1085
Guinea Bissau	0.0960	0.0640	0.1334
Guinea	0.0894	0.0757	0.1039
Congo	0.0858	0.0648	0.1068
Rwanda	0.0829	0.0699	0.0967
Ghana	0.0689	0.0615	0.0769
Eswatini	0.0658	0.0366	0.1024
Namibia	0.0654	0.0408	0.0939
Niger	0.0642	0.0557	0.0726
Togo	0.0558	0.0431	0.0710
Eritrea	0.0479	0.0347	0.0612
Madagascar	0.0293	0.0240	0.0354
Kenya	0.0276	0.0237	0.0315
Liberia	0.0270	0.0145	0.0394
Zambia	0.0225	0.0161	0.0288
Mali	0.0204	0.0152	0.0262
Central African Republic	0.0193	0.0086	0.0300
Benin	0.0192	0.0122	0.0253
Democratic Republic of the Congo	0.0192	0.0164	0.0215
Botswana	0.0177	0.0044	0.0311
Gambia	0.0175	0.0044	0.0307
Mauritania	0.0136	0.0045	0.0227
Uganda	0.0112	0.0087	0.0140
Nigeria	0.0102	0.0089	0.0114
Sierra Leone	0.0078	0.0039	0.0131
Zimbabwe	0.0062	0.0028	0.0097
Chad	0.0058	0.0026	0.0090
Angola	0.0045	0.0026	0.0065
Ethiopia	0.0039	0.0029	0.0049
United Republic of Tanzania	0.0039	0.0027	0.0053
Mozambique	0.0034	0.0017	0.0054
Burundi	0.0027	0.0000	0.0054
Malawi	0.0022	0.0006	0.0044
Cape Verde	0.0020	0.0008	0.0036
South Sudan	0.0009	0.0000	0.0027
Comoros	0	NA	NA
Lesotho	0	NA	NA
Sao Tome and Principe	0	NA	NA

## Cumulative deaths

Country	Cum. Num. Deaths
Algeria	130
Democratic Republic of the Congo	18
Burkina Faso	15
South Africa	11
Cameroon	9
Niger	8
Mauritius	7
Congo	5
Ghana	5
Kenya	4
Mali	4
Nigeria	4
Liberia	3
Togo	3
Angola	2
Cote d'Ivoire	2
Senegal	2
Botswana	1
Cabo Verde	1
Ethiopia	1
Gabon	1
Gambia	1
Mauritania	1
United Republic of Tanzania	1
Zambia	1
Zimbabwe	1
Benin	0
Burundi	0
Central African Republic	0
Chad	0
Comoros	0
Equatorial Guinea	0
Eritrea	0
Eswatini	0
Guinea	0
Guinea-Bissau	0
Lesotho	0
Madagascar	0
Malawi	0
Mozambique	0
Namibia	0
Rwanda	0
Sao Tome and Principe	0
Seychelles	0
Sierra Leone	0
South Sudan	0
Uganda	0

## Cumulative deaths per 10,000 populations

Country	Cum. Num. Deaths per 10k pop.
Mauritius	0.0553
Algeria	0.0308
Cabo Verde	0.0184
Congo	0.0095
Burkina Faso	0.0076
Liberia	0.0062
Gabon	0.0047
Botswana	0.0044
Gambia	0.0044
Togo	0.0038
Cameroon	0.0036
Niger	0.0036
Mauritania	0.0023
Democratic Republic of the Congo	0.0021
Mali	0.0021
South Africa	0.0019
Ghana	0.0017
Senegal	0.0013
Cote d'Ivoire	0.0008
Kenya	0.0008
Zimbabwe	0.0007
Angola	0.0006
Zambia	0.0006
Nigeria	0.0002
United Republic of Tanzania	0.0002
Ethiopia	0.0001
Benin	0.0000
Burundi	0.0000
Central African Republic	0.0000
Chad	0.0000
Comoros	0.0000
Equatorial Guinea	0.0000
Eritrea	0.0000
Eswatini	0.0000
Guinea	0.0000
Guinea-Bissau	0.0000
Lesotho	0.0000
Madagascar	0.0000
Malawi	0.0000
Mozambique	0.0000
Namibia	0.0000
Rwanda	0.0000
Sao Tome and Principe	0.0000
Seychelles	0.0000
Sierra Leone	0.0000
South Sudan	0.0000
Uganda	0.0000

# Doubling time (incidence)

	country	Td.obs	ci.low	ci.upp	t1	t2
23	Guinea-Bissau	2.2	1.6	3.4	2020-03-30	2020-04-06
2	Angola	2.5	1.8	4.4	2020-03-30	2020-04-06
22	Guinea	2.5	2.0	3.0	2020-03-30	2020-04-06
34	Niger	2.5	2.0	2.9	2020-03-30	2020-04-06
24	Kenya	2.8	2.3	3.3	2020-03-30	2020-04-06
8	Cameroon	3.1	NA	NA	2020-03-30	2020-04-06
16	Eritrea	3.1	2.0	4.5	2020-03-30	2020-04-06
26	Liberia	3.3	2.0	6.0	2020-03-30	2020-04-06
3	Benin	3.7	2.3	6.0	2020-03-30	2020-04-06
19	Gabon	4.4	2.6	7.4	2020-03-30	2020-04-06
1	Algeria	4.8	4.5	5.1	2020-03-30	2020-04-06
46	Zambia	5.4	3.8	8.1	2020-03-30	2020-04-06
12	Congo	5.6	4.0	8.0	2020-03-30	2020-04-06
31	Mauritius	6.1	5.3	7.0	2020-03-30	2020-04-06
29	Mali	6.3	4.4	9.4	2020-03-30	2020-04-06
27	Madagascar	6.6	5.2	8.8	2020-03-30	2020-04-06
18	Ethiopia	6.8	4.7	10.1	2020-03-30	2020-04-06
14	Democratic Republic of the Congo	7.1	5.9	8.6	2020-03-30	2020-04-06
10	Chad	8.3	3.9	27.3	2020-03-30	2020-04-06
47	Zimbabwe	8.3	3.5	26.6	2020-03-30	2020-04-06
43	Togo	10.7	7.2	17.4	2020-03-30	2020-04-06
45	United Republic of Tanzania	10.7	6.2	23.0	2020-03-30	2020-04-06
38	Senegal	10.9	9.0	13.3	2020-03-30	2020-04-06
9	Central African Republic	12.0	5.3	46.1	2020-03-30	2020-04-06
13	Cote d'Ivoire	12.3	10.2	14.9	2020-03-30	2020-04-06
33	Namibia	12.9	6.4	33.9	2020-03-30	2020-04-06
36	Rwanda	12.9	9.6	17.5	2020-03-30	2020-04-06
44	Uganda	12.9	8.8	20.9	2020-03-30	2020-04-06
5	Burkina Faso	15.8	13.1	19.3	2020-03-30	2020-04-06
21	Ghana	16.2	13.2	20.8	2020-03-30	2020-04-06
20	Gambia	16.9	5.3	Inf	2020-03-30	2020-04-06
41	South Africa	18.9	17.4	20.7	2020-03-30	2020-04-06
32	Mozambique	21.7	8.7	Inf	2020-03-30	2020-04-06
39	Seychelles	21.7	8.0	Inf	2020-03-30	2020-04-06
15	Equatorial Guinea	23.4	10.3	Inf	2020-03-30	2020-04-06
30	Mauritania	26.6	7.0	Inf	2020-03-30	2020-04-06
7	Cabo Verde	Inf	Inf	Inf	2020-03-30	2020-04-06
17	Eswatini	Inf	Inf	Inf	2020-03-30	2020-04-06
4	Botswana	NA	NA	NA	2020-03-30	2020-04-06
6	Burundi	NA	NA	NA	2020-03-30	2020-04-06
11	Comoros	NA	NA	NA	2020-03-30	2020-04-06
25	Lesotho	NA	NA	NA	2020-03-30	2020-04-06
28	Malawi	NA	NA	NA	2020-03-30	2020-04-06
35	Nigeria	NA	NA	NA	2020-03-30	2020-04-06
37	Sao Tome and Principe	NA	NA	NA	2020-03-30	2020-04-06
40	Sierra Leone	NA	NA	NA	2020-03-30	2020-04-06
42	South Sudan	NA	NA	NA	2020-03-30	2020-04-06

## Doubling time (deaths)

	country	Td.obs	ci.low	ci.upp	t1	t2
5	Burkina Faso	3.0	1.8	5.1	2020-03-30	2020-04-06
1	Algeria	3.2	2.7	3.9	2020-03-30	2020-04-06
8	Cameroon	3.2	2.0	7.0	2020-03-30	2020-04-06
24	Kenya	3.5	2.7	20.5	2020-03-30	2020-04-06
35	Nigeria	3.5	2.7	Inf	2020-03-30	2020-04-06
31	Mauritius	3.9	2.3	10.3	2020-03-30	2020-04-06
43	Togo	4.4	3.0	Inf	2020-03-30	2020-04-06
34	Niger	4.9	2.5	12.0	2020-03-30	2020-04-06
14	Democratic Republic of the Congo	6.0	3.7	11.1	2020-03-30	2020-04-06
7	Cabo Verde	Inf	Inf	Inf	2020-03-30	2020-04-06
19	Gabon	Inf	Inf	Inf	2020-03-30	2020-04-06
20	Gambia	Inf	Inf	Inf	2020-03-30	2020-04-06
21	Ghana	Inf	Inf	Inf	2020-03-30	2020-04-06
47	Zimbabwe	Inf	Inf	Inf	2020-03-30	2020-04-06
2	Angola	NA	NA	NA	2020-03-30	2020-04-06
3	Benin	NA	NA	NA	2020-03-30	2020-04-06
4	Botswana	NA	NA	NA	2020-03-30	2020-04-06
6	Burundi	NA	NA	NA	2020-03-30	2020-04-06
9	Central African Republic	NA	NA	NA	2020-03-30	2020-04-06
10	Chad	NA	NA	NA	2020-03-30	2020-04-06
11	Comoros	NA	NA	NA	2020-03-30	2020-04-06
12	Congo	NA	NA	NA	2020-03-30	2020-04-06
13	Cote d'Ivoire	NA	NA	NA	2020-03-30	2020-04-06
15	Equatorial Guinea	NA	NA	NA	2020-03-30	2020-04-06
16	Eritrea	NA	NA	NA	2020-03-30	2020-04-06
17	Eswatini	NA	NA	NA	2020-03-30	2020-04-06
18	Ethiopia	NA	NA	NA	2020-03-30	2020-04-06
22	Guinea	NA	NA	NA	2020-03-30	2020-04-06
23	Guinea-Bissau	NA	NA	NA	2020-03-30	2020-04-06
25	Lesotho	NA	NA	NA	2020-03-30	2020-04-06
26	Liberia	NA	NA	NA	2020-03-30	2020-04-06
27	Madagascar	NA	NA	NA	2020-03-30	2020-04-06
28	Malawi	NA	NA	NA	2020-03-30	2020-04-06
29	Mali	NA	NA	NA	2020-03-30	2020-04-06
30	Mauritania	NA	NA	NA	2020-03-30	2020-04-06
32	Mozambique	NA	NA	NA	2020-03-30	2020-04-06
33	Namibia	NA	NA	NA	2020-03-30	2020-04-06
36	Rwanda	NA	NA	NA	2020-03-30	2020-04-06
37	Sao Tome and Principe	NA	NA	NA	2020-03-30	2020-04-06
38	Senegal	NA	NA	NA	2020-03-30	2020-04-06
39	Seychelles	NA	NA	NA	2020-03-30	2020-04-06
40	Sierra Leone	NA	NA	NA	2020-03-30	2020-04-06
41	South Africa	NA	NA	NA	2020-03-30	2020-04-06
42	South Sudan	NA	NA	NA	2020-03-30	2020-04-06
44	Uganda	NA	NA	NA	2020-03-30	2020-04-06
45	United Republic of Tanzania	NA	NA	NA	2020-03-30	2020-04-06
46	Zambia	NA	NA	NA	2020-03-30	2020-04-06