



Swiss TPH

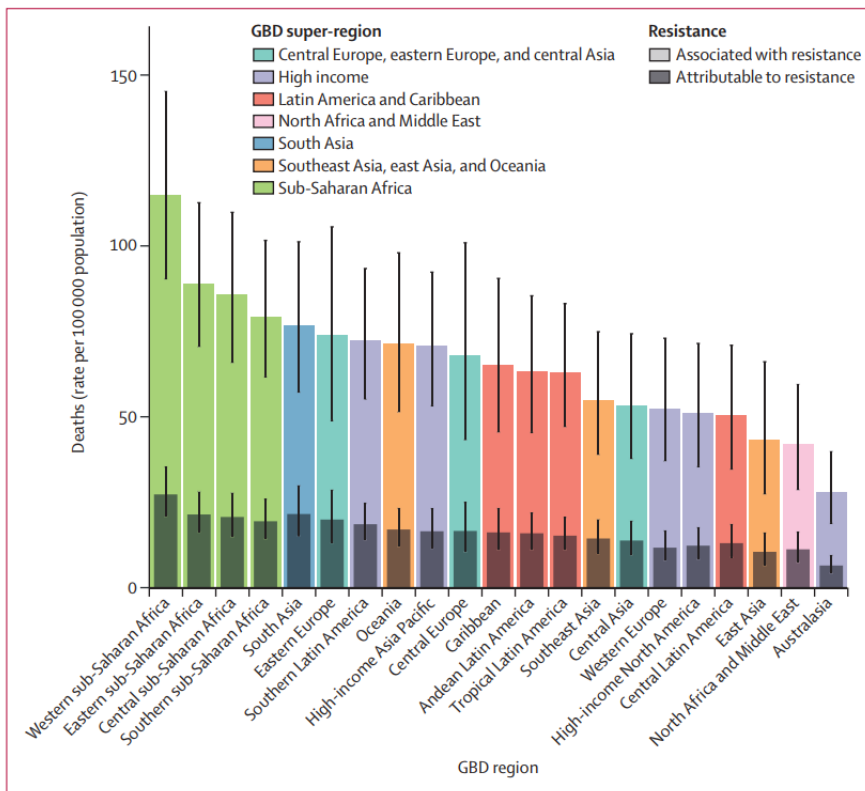


Wie kann die Antibiotika-Resistenz in
der Schweiz und weltweit bekämpft
werden?

Internationale Perspektive

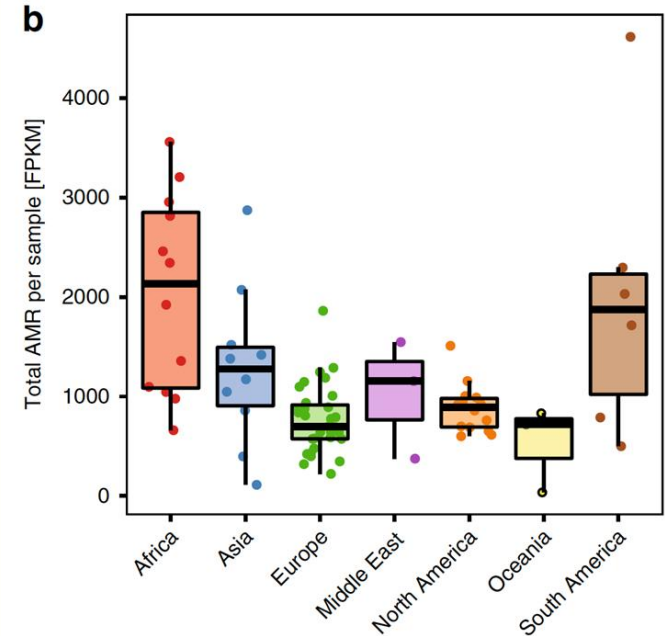
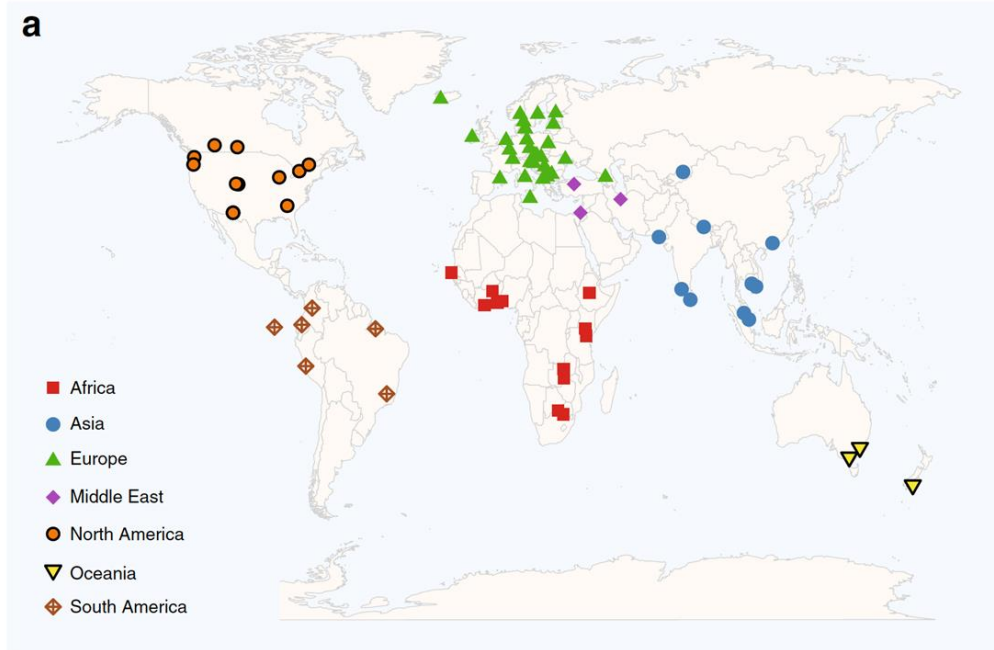
PD Dr. med. Esther Künzli

Antibiotika-Resistenz: weltweite Todesfälle 2019



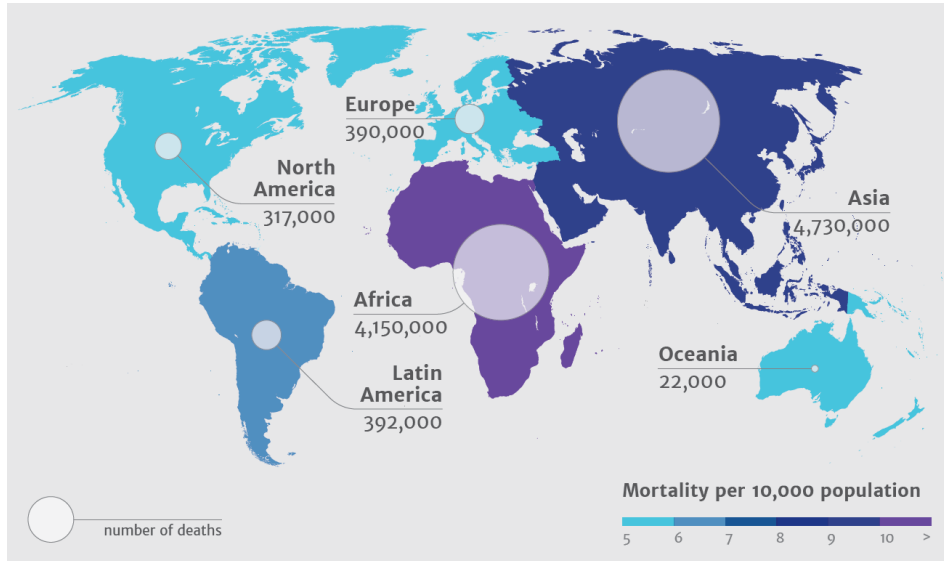
Antibiotika-Resistenz zurechenbare
(«attributable») Todesfälle:
1.27 Mio (95% UI 0.91-1.71)

Globales Monitoring von Antibiotika-Resistenzen im Abwasser



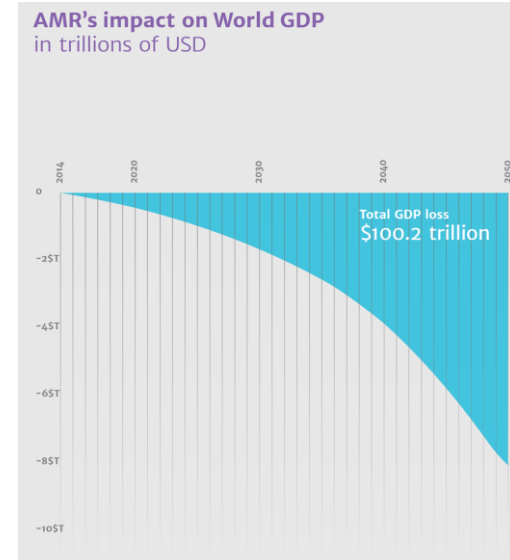
Die Zukunft - 2050

Anzahl Todesfälle

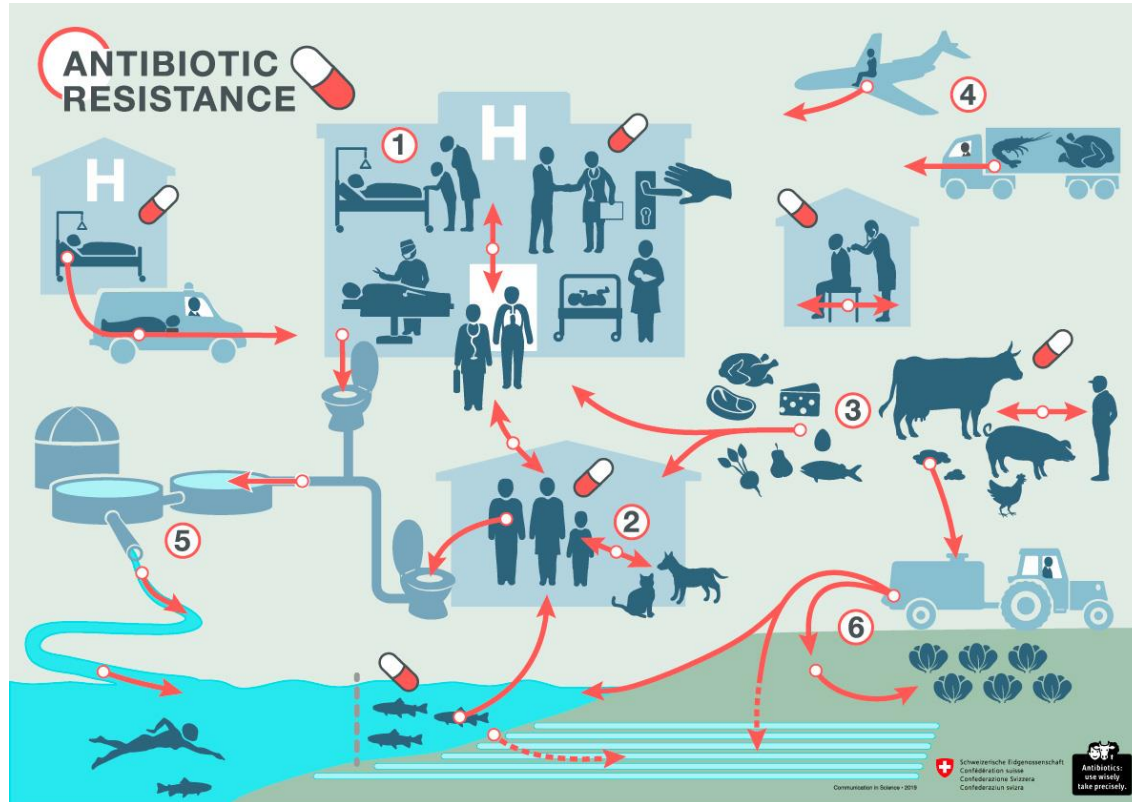


2050: 10 Millionen Todesfälle/Jahr

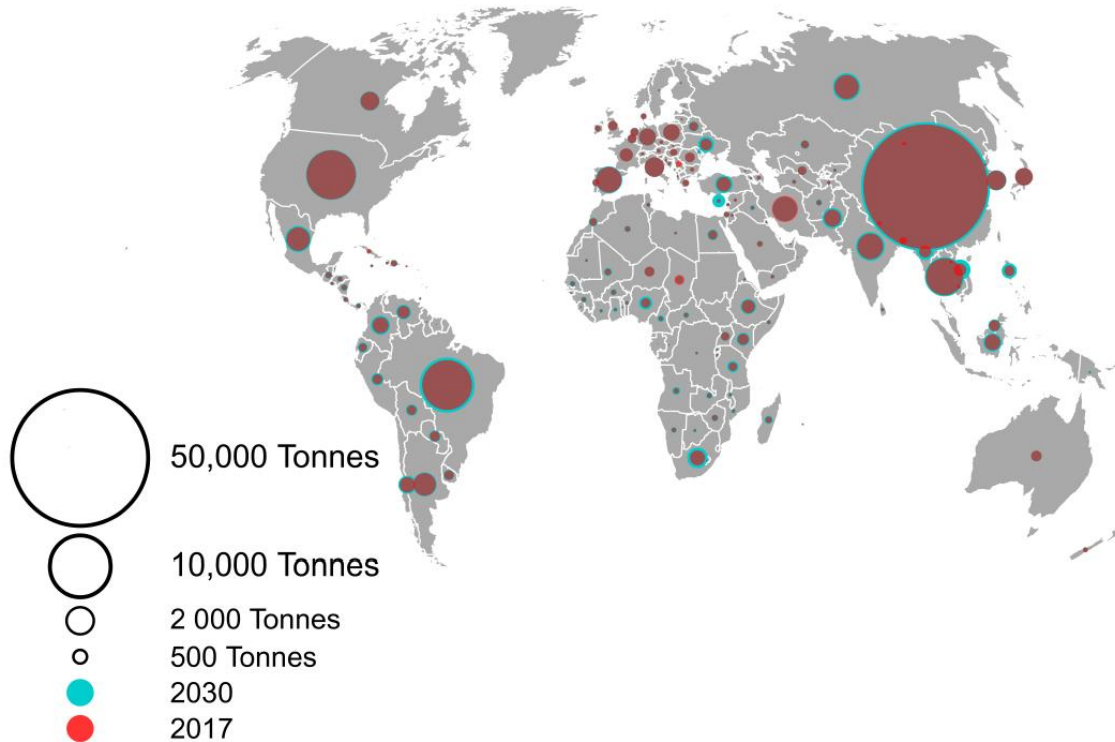
Kosten



Antibiotika-Resistenz und «One Health»

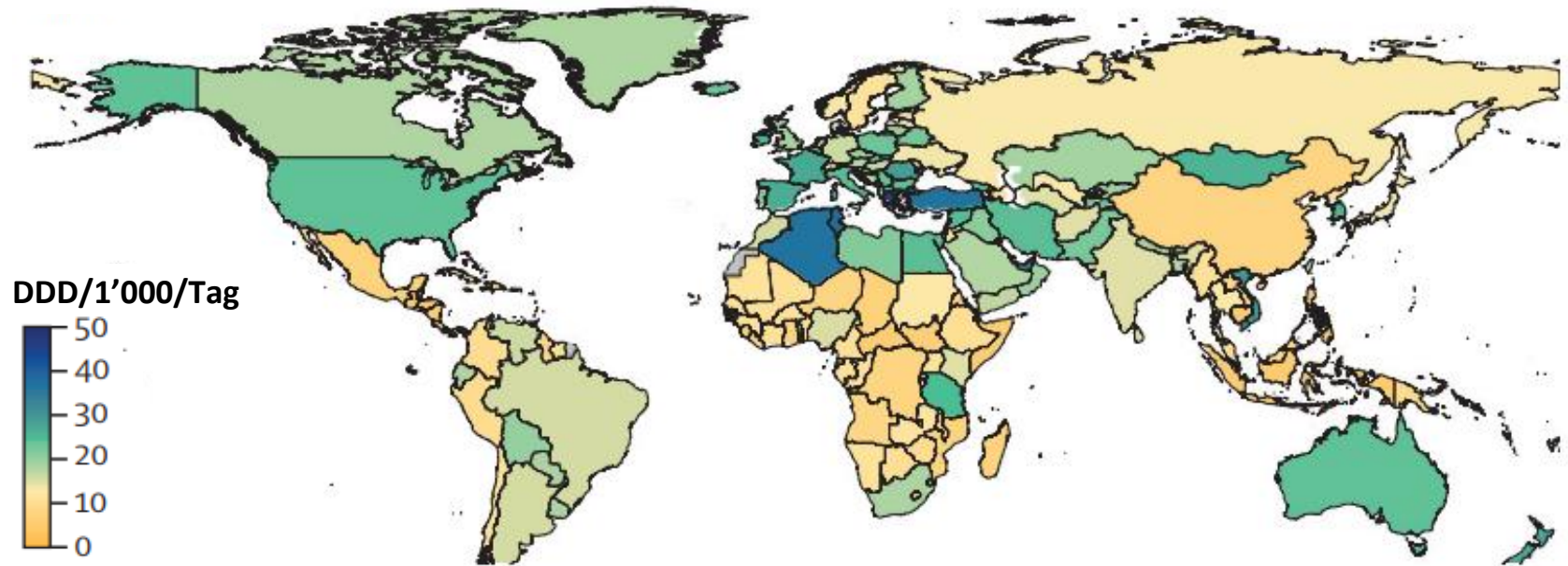


Antibiotika-Gebrauch in der Tiermast 2017 und 2030



	Veränderung 2017-2030
China	+ 7.3%
Brasilien	+ 11.8%
USA	+ 3.8%
Thailand	+ 14.0%
Indien	+ 7.0%
Iran	- 12.2%
Spanien	+ 10.3%
Russland	+ 18.8%
Mexiko	+ 14.8%
Argentinien	+ 11.4%

Antibiotika-Verbrauch Humanmedizin 2018



Antibiotika-Verbrauch in hospitalisierten Patient*innen

	Countries (n)	Hospitals (n)	Medical wards		Surgical wards		Intensive-care units		Haematology oncology wards		Pneumology wards		Transplant (bone marrow or solid transplants)		Total	
			Admitted (n)	Anti- microbial use (%)	Admitted (n)	Anti- microbial use (%)	Admitted (n)	Anti- microbial use (%)	Admitted (n)	Anti- microbial use (%)	Admitted (n)	Anti- microbial use (%)	Admitted (n)	Anti- microbial use (%)	Admitted (n)	Antimicrobial use (%, country range)
Eastern Europe	2	8	778	11.6%	1381	33.2%	107	67.3%	11	9.1%	105	30.5%	..	..	2382	27.4% (23.7-27.8)
Northern Europe	5	36	4959	29.8%	2371	37.7%	370	55.9%	242	49.6%	101	53.5%	51	60.8%	8094	34.4% (29.0-37.8)
Southern Europe	13	53	6443	32.6%	5475	40.0%	1010	64.1%	646	33.6%	561	60.2%	52	76.9%	14 187	39.0% (27.2-62.0)
Western Europe	5	118	17 483	23.4%	8851	28.0%	1467	56.0%	1048	43.1%	1111	49.7%	89	80.9%	30 049	28.1% (25.1-37.1)
Africa	5	12	619	49.9%	1101	49.0%	64	64.1%	..	..	..	..	..	..	1798	50.0% (27.8-74.7)
East and south Asia*	6	29	6644	33.0%	5663	34.2%	702	65.5%	847	54.0%	409	46.2%	146	86.3%	14 411	37.2% (29.6-78.5)
West and central Asia	9	27	1873	42.0%	1249	44.7%	396	47.7%	156	48.1%	..	..	..	..	3677	43.8% (22.4-85.7)
Oceania	2	9	1781	29.8%	604	52.5%	76	69.7%	46	54.3%	..	..	..	..	2516	37.0% (33.3-38.5)
Latin America	4	19	1942	31.8%	1571	37.3%	468	55.1%	92	28.3%	..	..	41	65.9%	4122	36.8% (32.5-43.4)
North America	2	24	3605	32.4%	1136	44.2%	524	59.4%	202	55.4%	34	58.8	39	66.7%	5540	38.6% (30.9-44.8)

A version of this table containing numerical data for all percentages is in the appendix. Empty cells mean that no cases or too few cases (ie, fewer than 10 admitted or treated inpatients) were recorded (these cases are included in the totals).
*Includes south, east, and southeast Asia.

Table 1: Antimicrobial use in adult hospital inpatients, by UN region, 2015

Macht (nur) die Dosis das «Gift»?

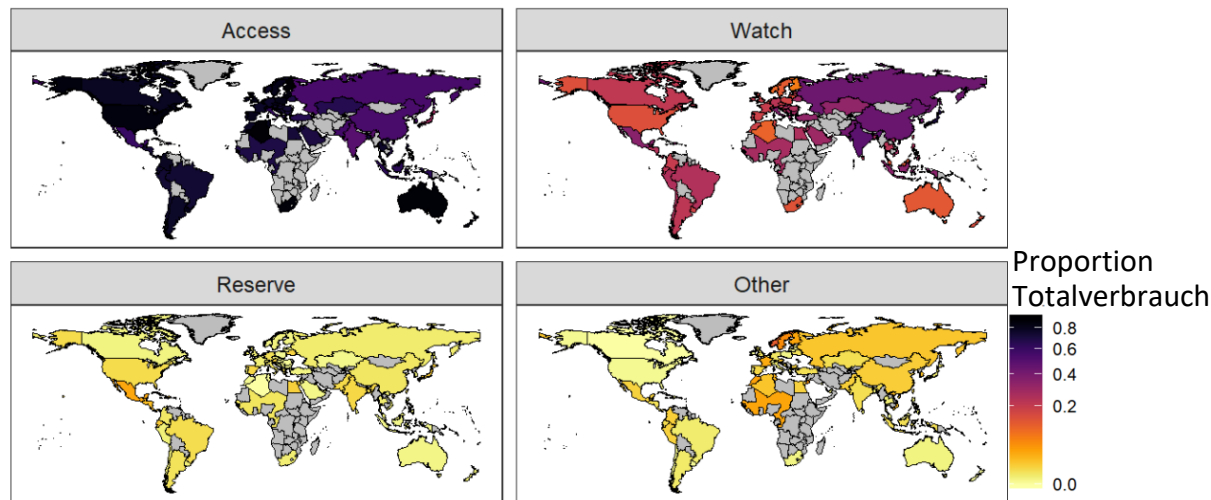
Antibiotika-Verbrauch nach AWARE-Klassifikation

AWaRE-Klassifikation

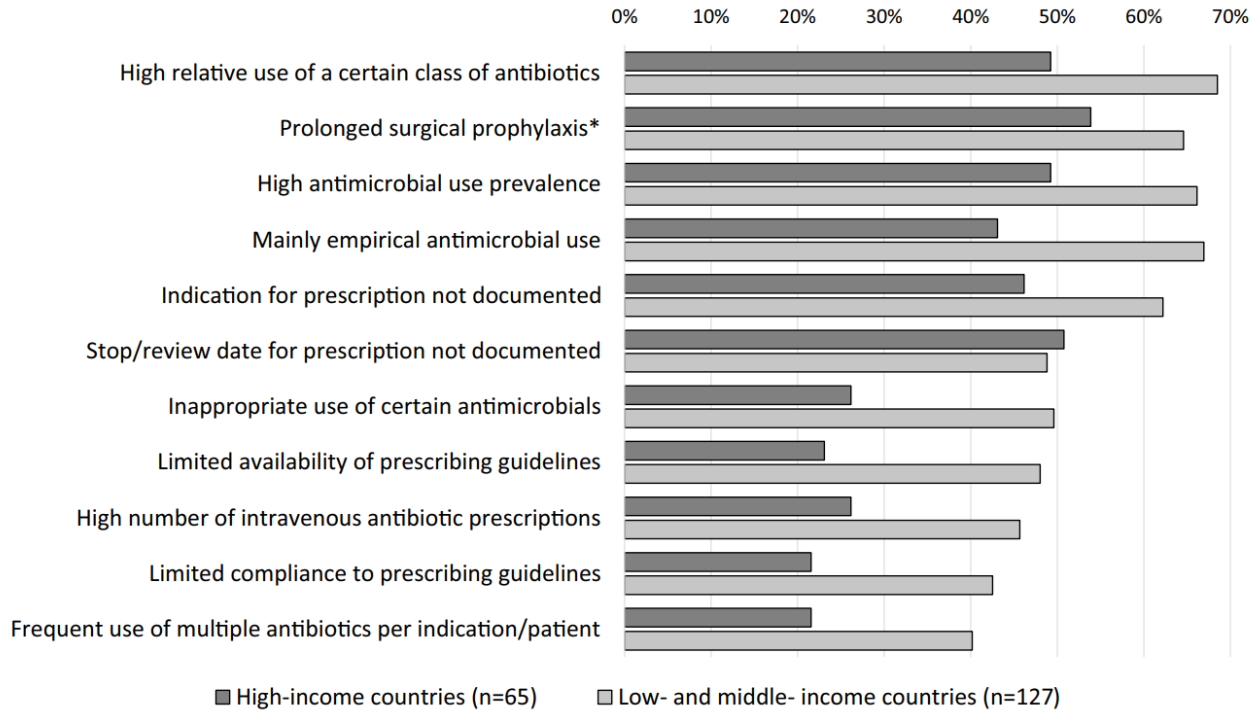
Access: Antibiotika der Wahl für die 25 häufigsten Infektionen

Watch: beinhaltet «highest-priority critically important antimicrobials»; nur für spezifische, limitierte Indikationen

Reserve: sollten nur als letzte Möglichkeit eingesetzt werden



Probleme in Bezug auf Antibiotika-Verschreibung



* > 24 Stunden

Antibiotika-Verbrauch in Peru

10 Tertiär-Spitäler in Peru:

Anteil von Patient*innen unter Antibiotika-Therapie: **57.0%**

Qualitätsindikatoren für Antibiotika-Gabe:

	Indikation vor Therapiebeginn (%)	Festgelegtes Re-Evaluationsdatum (%)	Intravenöse Gabe (%)	Korrektheit der Therapie (%)	Anzahl Antibiotika pro Patient (%)
Spital A	28.1	15.1	90.4	87.7	1.55
Spital B	90.2	22.5	93.3	30.5	1.61
Spital C	95.9	34.8	99.0	41.2	1.58
Spital D	100.0	74.6	94.0	100.0	1.6
Spital E	100.0	13.2	87.7	80.7	1.58
Spital F	100.0	2.6	95.6	61.9	1.76
Spital G	85.5	18.0	85.6	77.1	1.33
Spital H	100.0	72.2	90.7	0.0	1.55
Spital I	100.0	9.2	93.2	19.0	1.62
Spital J	100.0	18.1	91.7	18.8	1.68
Total	86.1	25.9	92.3	49.5	1.60



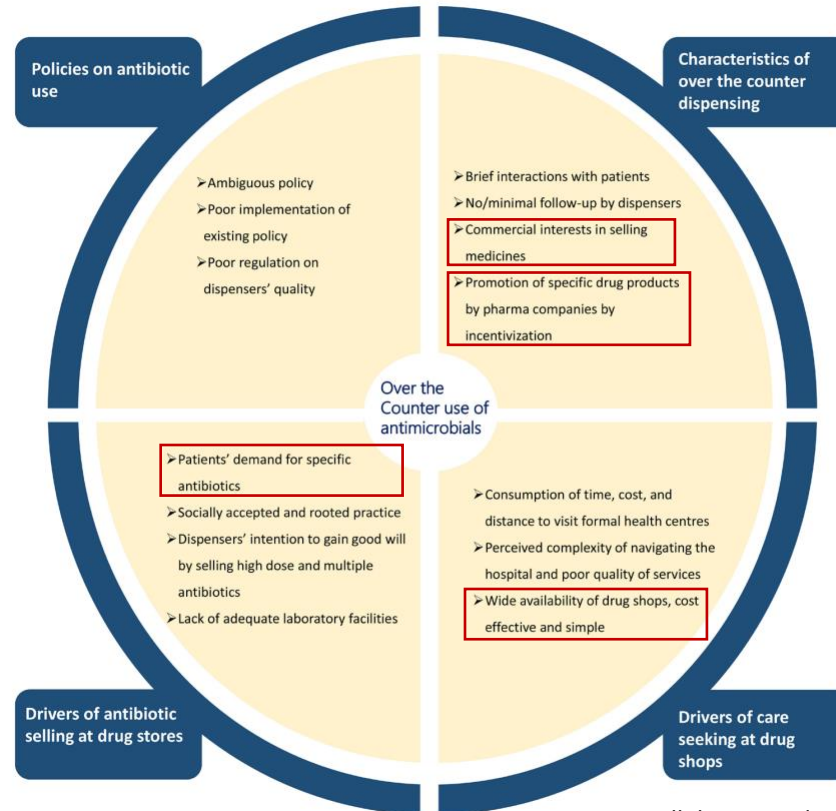


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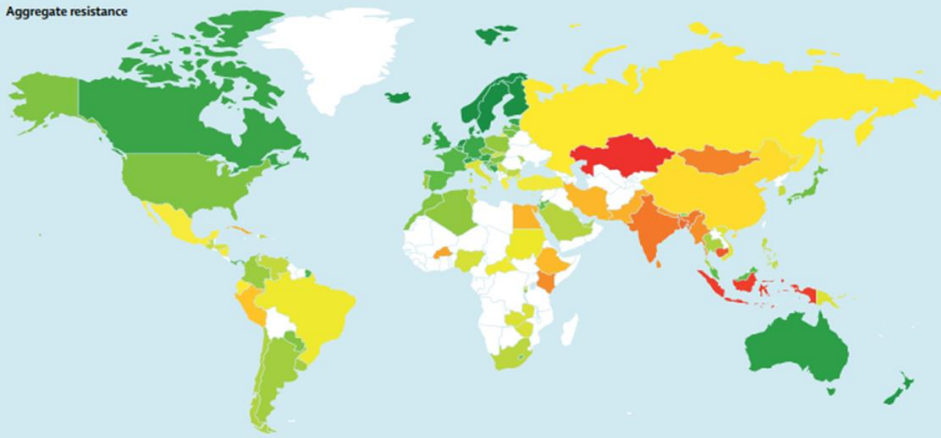
Was hat Einfluss auf den
Antibiotika-Gebrauch?

Antibiotika-Bezug ohne Rezept – das Beispiel Nepal

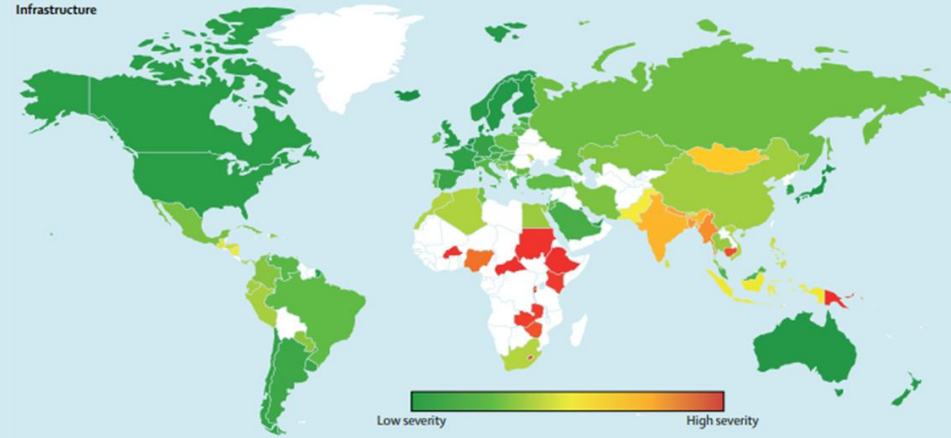


Und ausserdem...

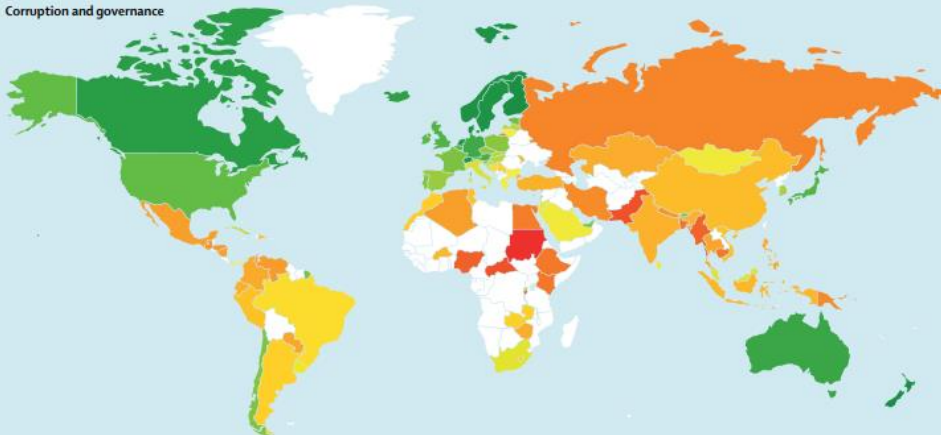
Aggregate resistance



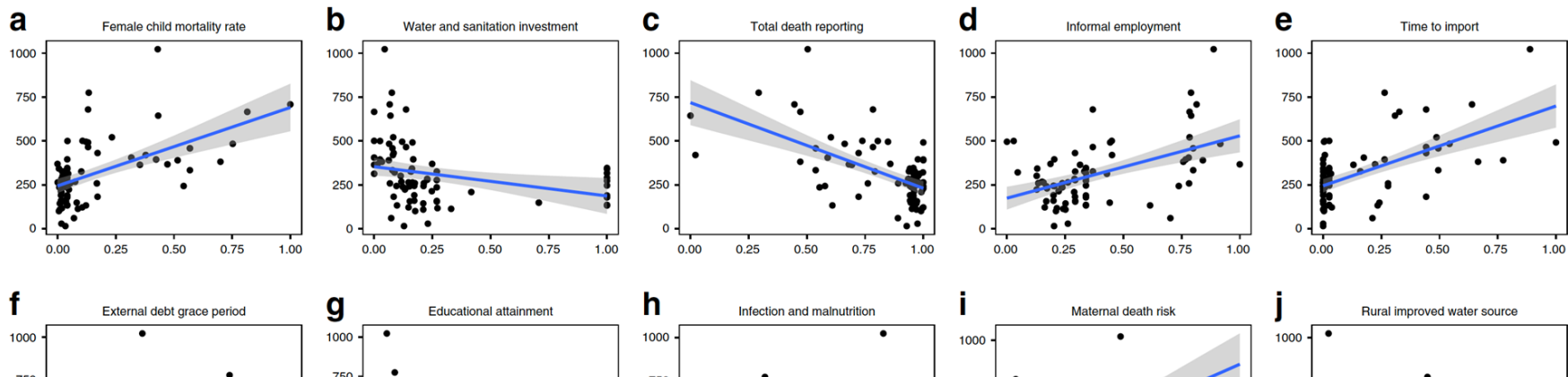
Infrastructure



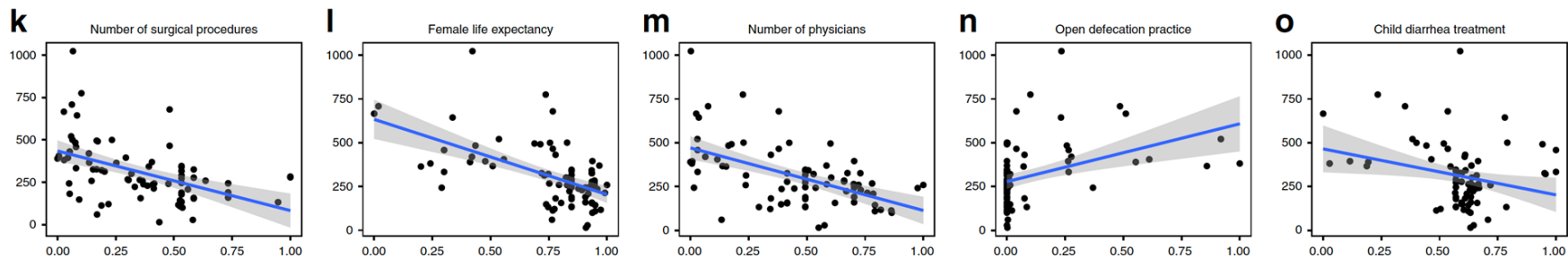
Corruption and governance



Kumulierte Resistenzraten: *E. coli* und *K. pneumoniae* resistent gegen 3. Generation Cephalosporine, Chinolone und Carbapeneme sowie Methicillin-resistente *S. aureus*



«Antimicrobial use data only explains a minor part of the AMR variation. AMR gene abundance strongly correlates with socioeconomic, health and environmental factors in all countries in the world.»



Take Home Message

Antibiotika-Resistenz

- ist ein multifaktorielles Problem
 - «One Health»
 - Antibiotika-Gebrauch in Humanmedizin und Tierzucht, Armut / Infrastruktur
- ist mit hoher Morbidität und Mortalität und hohen Kosten assoziiert
- muss auf interdisziplinärer Ebene gelöst werden
- in der Humanmedizin braucht es auf globaler Ebene
 - bessere Ausbildung
 - bessere Surveillance
 - bessere Guidelines
 - bessere Diagnostik etc

~~COULD~~
~~SHOULD~~
~~WOULD~~
DO IT!



Vielen Dank für Ihre Aufmerksamkeit

Esther Künzli (esther.kuenzli@swisstph.ch)