IDA Risk / DSKS Forskningsudvalg
Seminar om Pandemihåndtering
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Pandemihåndtering: Hårde og Bløde Faktorer

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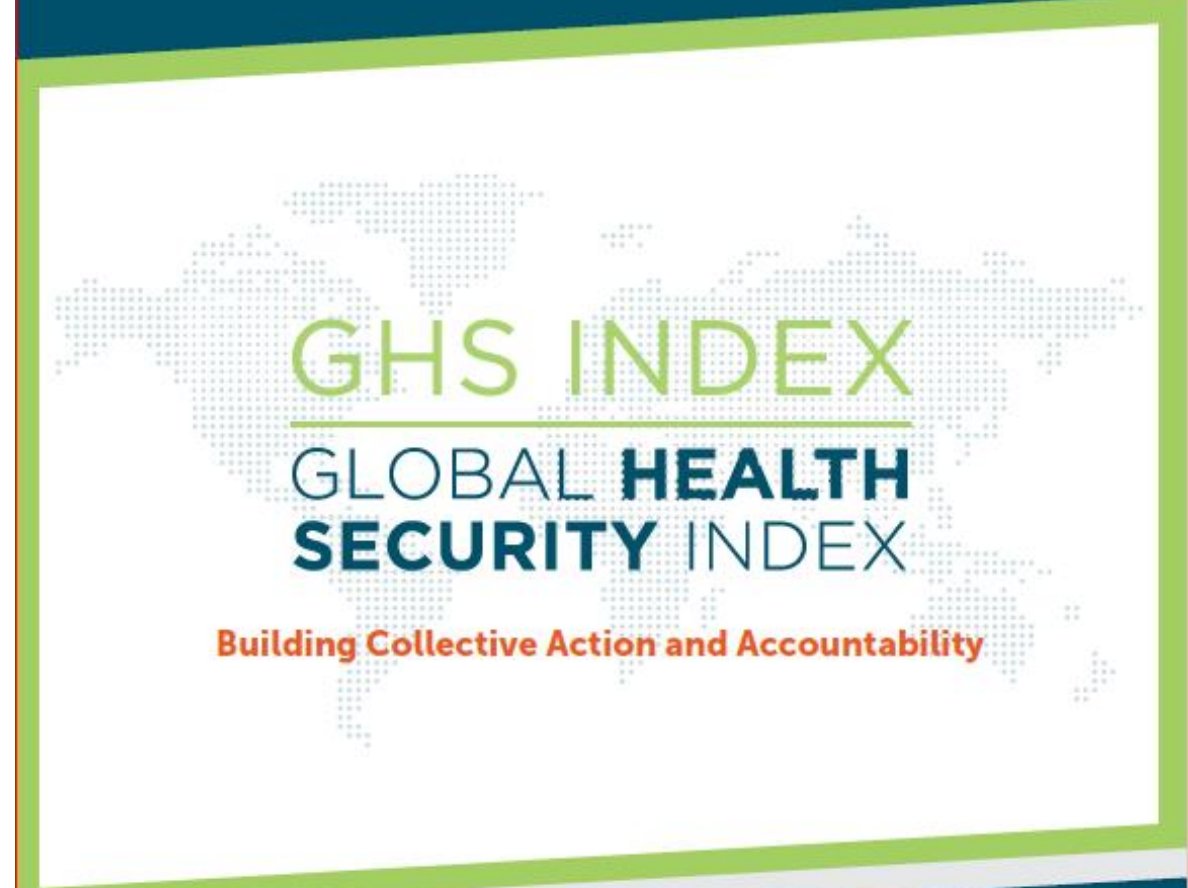**Kgs Lyngby**

Global Health Security Index

GHSI's mål: at beskrive

"a country's capability to prevent and mitigate epidemics and pandemics"

GHSI is a tool for measuring country capacities to prevent, detect and respond to naturally occurring, accidental and deliberate infectious disease threats."

https://www.ghsindex.org/

2019

GHS INDEX

GLOBAL **HEALTH** **SECURITY** INDEX

Building Collective Action and Accountability

NTI
BUILDING A SAFER WORLD

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

Center for Health Security

Index developed with

The Economist INTELLIGENCE UNIT

GHSI udviklet af et internationalt panel af 21 eksperter fra 13 lande:

Global Health Security Index (GHSI): det hidtil grundigste og mest omfattende forsøg på at måle og rangordne beredskabet i stort set alle verdens lande (195 lande)

Måler for hvert land dets kapaciteter fordelt i 6 kategorier, 34 indikatorer og 85 underindikatorer.

Publiceret nov. 2019, dvs. umiddelbart inden ny virusinfektion i Wuhan blev offentliggort

INTERNATIONAL PANEL OF EXPERTS

Dr. David M. Barash, *Executive Director*, GE Foundation

Dr. David Blazes, *Senior Program Officer*, Surveillance and Epidemiology, Global Health Program, Bill & Melinda Gates Foundation

Dr. Mukesh Chawla, *Adviser*, Health, Nutrition and Population, World Bank; *Chair*, UNAIDS and World Bank Global Economics Reference Group on HIV-AIDS

Dr. Chaeshin Chu, *Deputy Scientific Director*, Division of Risk Assessment and International Cooperation, Korea Centers for Disease Control and Prevention (KCDC)

Dr. Scott F. Dowell, *Deputy Director*, Vaccine Development and Surveillance, Global Health Program, Bill & Melinda Gates Foundation

Dr. Wu Fan, *Deputy Director General*, Shanghai Municipal Health Commission, China

Dr. Dylan George, *Associate Director*, BNext, In-Q-Tel

Mr. Lawrence O. Gostin, *Faculty Director and Founding Chair*, O'Neill Institute for National and Global Health Law, Georgetown University Law Center

Dr. Ernesto Gozzer, *Associate Professor*, Universidad Peruana Cayetano Heredia; International Consultant

Dr. Wilmot James, *Visiting Professor*, Political Science and Pediatrics, Columbia University

Dr. Julius J. Lutwama, *Senior Principal Research Officer*, Ministry of Health, Uganda; Head of the Department of Arbovirology, Emerging and Re-Emerging Viral Infectious Diseases, Uganda Virus Research Institute (UVRI)

Dr. Issa Makumbi, *Director*, Public Health Emergency Operations Centre, Ministry of Health, Uganda

Dr. Pretty Multihartina, *Director*, Center for Health Determinant Analyst, Ministry of Health, Indonesia

Dr. Lee Myers, *Manager*, a.i., Emergency Management Centre for Animal Health (EMC-AH), Food and Agriculture Organization (FAO) of the United Nations (on behalf of the United States Department of Agriculture)

Dr. Indira Nath, *Former Senior Professor and Head*, Department of Biotechnology, All India Institute of Medical Sciences

Dr. Simo Nikkari, *Director and Professor*, Centres for Military Medicine and Biothreat Preparedness, FDF Logistics Command, Finland

The Honorable Cllr. Tolbert G. Nyenswah, *Director General*, National Public Health Institute, Liberia

Mr. Robert Powell, *Editorial Director Americas*, Thought Leadership, The Economist Intelligence Unit

Dr. Malik Muhammad Safi, *Director of Health Programs and Head of Health Planning*, System Strengthening and Information Analysis Unit, Ministry of National Health Services, Regulation and Coordination, Pakistan

Dr. Tomoya Saito, *Chief Senior Researcher*, Department of Health Crisis Management, National Institute of Public Health, Japan

Dr. Oyewale Tomori, *Professor of Virology*; *Former President*, Nigerian Academy of Science

GHSI - gav markant støtte til tillid til egen formåen i USA og UK

President Trump (pressekonference 27/2/2020)

The United States is "very, very ready for this, for anything - whether it's going to be a breakout of larger proportions . .. The Johns Hopkins, I guess - is a highly respected, great place - they did a study, comprehensive: 'The Countries Best and Worst Prepared for an Epidemic.' And the United States is now - we're rated number one... one for being prepared.”

(Martin 2020; Shear et al 2020).

GHSI - markant støtte til tillid til egen formåen i USA og UK

Overskrift i The Telegraph 6/3-2020:

"Firmly and calmly, the UK is leading Europe in the fight against the coronavirus",

"… the UK is empirically the most capable country in Europe in dealing with an epidemic. No other European nation ranks higher in the Global Health Security Index, with the latest report put together only four months ago by the Johns Hopkins Center for Health "

(Bennett 2020).}

Her vises i første søjle den samlede score og rangorden for de 15 øverste lande og i bunden vises de lavest-scorende lande. I de næste søjler de første 3 af de i alt 6 kategorier:

- Prevention
- Detection
- Response

OVERALL SCORE			1. PREVENTION OF THE EMERGENCE OR RELEASE OF PATHOGENS			2. EARLY DETECTION & REPORTING FOR EPIDEMICS OF POTENTIAL INTERNATIONAL CONCERN			3. RAPID RESPONSE TO AND MITIGATION OF THE SPREAD OF AN EPIDEMIC		
Rank		Score	Rank		Score	Rank		Score	Rank		Score
1	United States	83.5	1	United States	83.1	1	United States	98.2	1	United Kingdom	91.9
2	United Kingdom	77.9	2	Sweden	81.1	2	Australia	97.3	2	United States	79.7
3	Netherlands	75.6	3	Thailand	75.7	2	Latvia	97.3	3	Switzerland	79.3
4	Australia	75.5	4	Netherlands	73.7	4	Canada	96.4	4	Netherlands	79.1
5	Canada	75.3	5	Denmark	72.9	5	South Korea	92.1	5	Thailand	78.6
6	Thailand	73.2	6	France	71.2	6	United Kingdom	87.3	6	South Korea	71.5
7	Sweden	72.1	7	Canada	70.0	7	Denmark	86.0	7	Finland	69.2
8	Denmark	70.4	8	Australia	68.9	7	Netherlands	86.0	8	Portugal	67.7
9	South Korea	70.2	9	Finland	68.5	7	Sweden	86.0	9	Brazil	67.1
10	Finland	68.7	10	United Kingdom	68.3	10	Germany	84.6	10	Australia	65.9
11	France	68.2	11	Norway	68.2	11	Spain	83.0	11	Singapore	64.6
12	Slovenia	67.2	12	Slovenia	67.0	12	Brazil	82.4	12	Slovenia	63.3
13	Switzerland	67.0	13	Germany	66.5	13	Lithuania	81.5	13	France	62.9
14	Germany	66.0	14	Ireland	63.9	13	South Africa	81.5	14	Sweden	62.8
15	Spain	65.9	15	Belgium	63.5	15	Thailand	81.0	15	Spain	61.9

192	São Tomé and Príncipe	17.7	192	São Tomé and Príncipe	8.2	189	Nauru	4.4	193	Somalia	17.4
193	North Korea	17.5	194	Marshall Islands	7.0	189	Niue	4.4	194	Eritrea	16.0
194	Somalia	16.6	195	Equatorial Guinea	1.9	194	São Tomé and Príncipe	2.7	195	North Korea	11.3
195	Equatorial Guinea	16.2				194	Syria	2.7			

Her vises score de 3 sidste lkategorier af indikatorer for henoldsvis de 15 højest-scorende og i bunden de lavest-scorende lande:

- Sundhedssystemet
- Overholdelse af normer
- Risikohåndtering

4. SUFFICIENT & ROBUST HEALTH SYSTEM TO TREAT THE SICK & PROTECT HEALTH WORKERS			5. COMMITMENTS TO IMPROVING NATIONAL CAPACITY, FINANCING AND ADHERENCE TO NORMS			6. OVERALL RISK ENVIRONMENT AND COUNTRY VULNERABILITY TO BIOLOGICAL THREATS		
Rank		Score	Rank		Score	Rank		Score
1	United States	73.8	1	United States	85.3	1	Liechtenstein	87.9
2	Thailand	70.5	2	United Kingdom	81.2	2	Norway	87.1
3	Netherlands	70.2	3	Australia	77.0	3	Switzerland	86.2
4	Canada	67.7	4	Finland	75.4	4	Luxembourg	84.7
5	Denmark	63.8	5	Canada	74.7	5	Austria	84.6
6	Australia	63.5	6	Mexico	73.9	6	Sweden	84.5
7	Switzerland	62.5	7	Indonesia	72.5	7	Andorra	83.5
8	France	60.9	8	Lithuania	72.1	8	Monaco	83.1
9	Finland	60.8	8	Slovenia	72.1	9	France	83.0
10	Belgium	60.5	10	Liberia	71.5	10	Canada	82.7
11	United Kingdom	59.8	11	Sweden	71.3	11	Germany	82.3
12	Spain	59.6	12	Thailand	70.9	12	Netherlands	81.7
13	South Korea	58.7	13	Japan	70.0	13	Iceland	81.2
14	Norway	58.5	14	Argentina	68.8	14	Finland	81.1
15	Malaysia	57.1	15	Estonia	67.6	15	Singapore	80.9

188	Eswatini (Swaziland)	6.5	189	Bahrain	27.8	188	Guinea-Bissau	24.1
189	Congo (Brazzaville)	6.3	190	Fiji	27.4	189	Chad	23.7
189	St. Lucia	6.3	191	North Korea	27.3	190	Yemen	23.5
191	Benin	5.6	192	Syria	26.1	191	Afghanistan	23.3
191	Burkina Faso	5.6	193	Belarus	25.8	192	Central African Republic	23.0
193	Equatorial Guinea	5.0	194	San Marino	25.0	193	South Sudan	22.1
194	Guinea-Bissau	4.6	195	Brunei	23.3	194	Congo (Democratic Republic)	20.1
195	Somalia	0.3				195	Somalia	15.9

Eksempel på GHSI-score for et givet land – her DK

Max score: 100.

Samlet gennemsnit for alle 6 kategorier for alle lande: 40,2.

Gennemsnit for høj-indkomstlande: 51,9
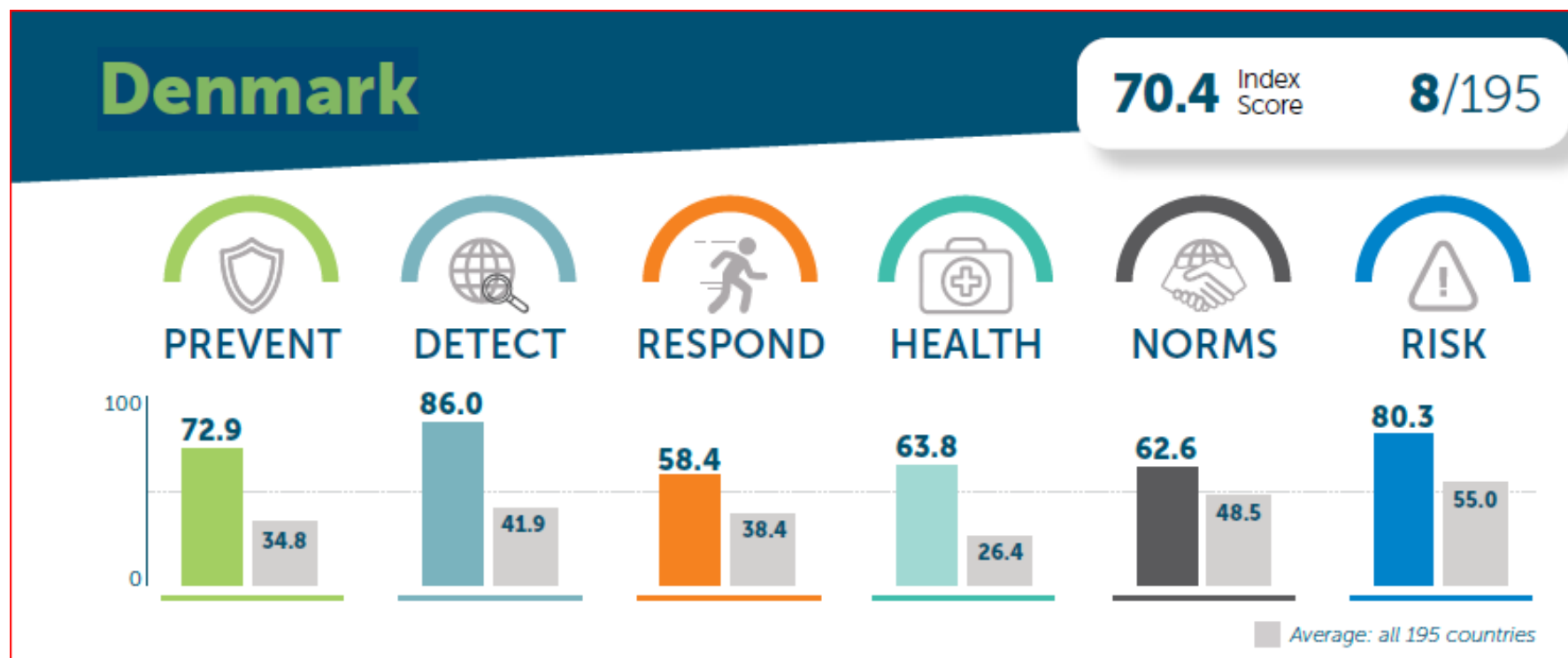
DK's scores for hvert af de 34 indikatorer fordelt i de 6 grupper – samtidig vises gennemsnit for alle 195 lande

På de følgende sider vises DK's score og rang samt eksempler på de specikke under-indikatorer/ målepunkter

	COUNTRY SCORE	AVERAGE SCORE*
PREVENTION	**72.9**	**34.8**
Antimicrobial resistance (AMR)	83.3	42.4
Zoonotic disease	55	27.1
Biosecurity	89.3	16.0
Biosafety	100	22.8
Dual-use research and culture of responsible science	0	1.7
Immunization	98.2	85.0
DETECTION AND REPORTING	**86.0**	**41.9**
Laboratory systems	100	54.4
Real-time surveillance and reporting	95	39.1
Epidemiology workforce	50	42.3
Data integration between human/ animal/environmental health sectors	100	29.7
RAPID RESPONSE	**58.4**	**38.4**
Emergency preparedness and response planning	31.3	16.9
Exercising response plans	100	16.2
Emergency response operation	33.3	23.6
Linking public health and security authorities	100	22.6
Risk communication	25	39.4
Access to communications infrastructure	93.9	72.7
Trade and travel restrictions	50	97.4

*Average: all 195 countries

Scores are normalized (0–100, where 100 = most favorable)

	COUNTRY SCORE	AVERAGE SCORE*
HEALTH SYSTEM	**63.8**	**26.4**
Health capacity in clinics, hospitals and community care centers	67.9	24.4
Medical countermeasures and personnel deployment	33.3	21.2
Healthcare access	44	38.4
Communications with healthcare workers during a public health emergency	100	15.1
Infection control practices and availability of equipment	50	20.8
Capacity to test and approve new medical countermeasures	100	42.2
COMPLIANCE WITH INTERNATIONAL NORMS	**62.6**	**48.5**
IHR reporting compliance and disaster risk reduction	50	62.3
Cross-border agreements on public and animal health emergency response	100	54.4
International commitments	100	53.4
JEE and PVS	0	17.7
Financing	66.7	36.4
Commitment to sharing of genetic & biological data & specimens	66.7	68.1
RISK ENVIRONMENT	**80.3**	**55.0**
Political and security risks	85.7	60.4
Socio-economic resilience	99.9	66.1
Infrastructure adequacy	75	49.0
Environmental risks	59.4	52.9
Public health vulnerabilities	79.3	46.9

Category 1: Prevent

Indicators

Indicator	Index Score		Rank
1.1) Antimicrobial resistance (AMR)	83.3	⊢——●—⊣	8 / 195

Indicator	Index Score		Rank
1.2) Zoonotic disease	55.0	⊢—●—⊣	26

Indicator	Index Score		Rank
1.3) Biosecurity	89.3	⊢——●⊣	1

Indicator	Index Score		Rank
1.4) Biosafety	100.0	⊢——●	1

Indicator	Index Score		Rank
1.5) Dual use research and culture of responsible science	0.0	●——⊣	10

Indicator	Index Score		Rank
1.6) Immunisation	98.2	⊢——●	34

Category 1

Indicators

Indicator

1.1) Antimicrobial resis

Indicator

1.2) Zoonotic disease

Indicator

1.3) Biosecurity

Indicator

1.4) Biosafety

Indicator

1.5) Dual use research

Indicator

1.6) Immunisation

Indicator	Index Score	Rank
1.4) Biosafety	100.0	1

1.4.1) Whole-of-government biosafety systems

2 Questions under this indicator:

Question 1:

1.4.1a) Does the country have in place national biosafety legislation and/or regulations?

Score and/or Justification:

There is evidence that Denmark has in place national legislation on biosafety. As per the 2009 Order of securing biological materials ar

	Index Score	Rank
	100.0	1

Question 2:

1.4.1b) Is there an established agency responsible for the enforcement of biosafety legislation and regulations?

1.4.2) Biosafety training and practices

1 Questions under this indicator:

Question 1:

1.4.2a) Does the country require biosafety training, using a standardised, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Category 2: Detect

Indicators

Indicator	Index Score	Rank
2.1) Laboratory systems	100.0	1 / 195

Indicator	Index Score	Rank
2.2) Real time surveillance and reporting	95.0	3

Indicator	Index Score	Rank
2.3) Epidemiology workforce	50.0	36

Indicator	Index Score	Rank
2.4) Data integration between human/animal/environmental health sectors	100.0	1

Category 3: Respond

Indicators

Indicator	Index Score		Rank
3.1) Emergency preparedness and response planning	31.3		37 / 195

Indicator	Index Score		Rank
3.2) Exercising response plans	100.0		1

Indicator	Index Score		Rank
3.3) Emergency response operation	33.3		10

Indicator	Index Score		Rank
3.4) Linking public health and security authorities	100.0		1

Indicator	Index Score		Rank
3.5) Risk communication	25.0		76

Indicator	Index Score		Rank
3.6) Access to communications infrastructure	93.9		17

Indicator	Index Score		Rank
3.7) Trade and travel restrictions	50.0		186

3.5.1) Risk communication systems

1 Questions under this indicator:

Question 1:

3.5.1a) Does the country have in pla[ce]
section detailing a risk communicat[ion]

3.5.2) Public communication

2 Questions under this indicator:

Question 1:

3.5.2a) Is there evidence that the government utilises media platforms (eg social media, website updates) to inform the public about public health emergencies?

Indicator

3.2) Exercising response plans

Indicator

3.3) Emergency response operation

Indicator

3.4) Linking public health and security authorities

Indicator

3.5) Risk communication

Indicator

3.6) Access to communications infrastructure

Indicator

3.7) Trade and travel restrictions

Question 2:

3.5.2b) Does the risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) outline how messages will reach populations and sectors with different communications needs (eg different languages, location within the country, media reach)?

Score and/or Justification:

There is no evidence that the risk communication strategy outlines how messages will reach populations and sectors with different communications needs (e.g. different languages, location within country, media reach, etc.). The national health emergency response plan is not publicly available, but as per a 2012 report on the implementation of the WHO International Health Regulation, which describes the national health emergency response and its operations in details, there is mentioning of a risk communication plan. [1] The report does not describe how to reach populations with different communication needs. Similarly, the section describing risk communication on the website of the Danish Emergency Management Agency provides no further details on how it will reach populations and sectors with different communication needs during a national emergency. [2] There was no further information on a risk communication plan on the website of the Ministry of Health. [3]
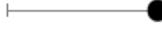
Category 4: Health

Indicators

Indicator	Index Score		Rank
4.1) Health capacity in clinics, hospitals and community care centres	67.9		4 / 195

Indicator	Index Score		Rank
4.2) Medical countermeasures and personnel deployment	33.3		24

Indicator	Index Score		Rank
4.3) Healthcare access	44.0		79

Indicator	Index Score		Rank
4.4) Communications with healthcare workers during a public health emergency	100.0		1

Indicator	Index Score		Rank
4.5) Infection control practices and availability of equipment	50.0		6

Indicator	Index Score		Rank
4.6) Capacity to test and approve new medical countermeasures	100.0		1

| 4.1) Health capacity in clinics, hospitals and community care centres | 67.9 | ●———— | 4 / 195 |

Indicator	Index Score		Rank
4.2) Medical countermeasures and personnel deployment	33.3	●————	24

Indicator	Index Score		Rank
4.3) Healthcare access	44.0	●————	79

Indicator

4.4) Communications with healthcare workers during a public h
emergency

Indicator

4.5) Infection control practices and availability of equipment

Indicator

4.6) Capacity to test and approve new medical countermeasure

4.3.2) Healthcare worker access to healthcare

1 Questions under this indicator:

Question 1:

4.3.2a) Has the government issued legislation, a policy or a public statement committing to provide prioritized healthcare services to healthcare workers who become sick as a result of responding to a public health emergency?

Score and/or Justification:

There is no publicly available evidence that the Danish government has issued legislation, a policy or a public statement committing to provide prioritised health care services to healthcare workers who become sick as a result of responding to a public health emergency. While the website of the Danish Health Authority reports that a public health emergency response exists, it is not publicly available. [1] Instead, the Danish Health Authority describes that the response is built on the framework of the common National Disaster Preparedness Plan, which has an "all hazards" approach and is prepared by the Ministry of Defence, via the Danish Emergency Management Agency. [2] A national public health emergency response plan is not publicly available, but the 2012 report on the implementation of the WHO International Health Regulation,

Category 5: Norms

Indicators

Indicator	Index Score		Rank
5.1) IHR reporting compliance and disaster risk reduction	50.0	⊢—●—⊣	51 / 195

Indicator	Index Score		Rank
5.2) Cross-border agreements on public health emergency response	100.0	⊢——●	1

Indicator	Index Score		Rank
5.3) International commitments	100.0	⊢——●	1

Indicator	Index Score		Rank
5.4) JEE and PVS	0.0	●——⊣	101

Indicator	Index Score		Rank
5.5) Financing	66.7	⊢—●—⊣	2

Indicator	Index Score		Rank
5.6) Commitment to sharing of genetic & biological data & specimens	66.7	⊢—●—⊣	11

Category 5: Norms

Indicators

Indicator	Index Score		Rank
5.1) IHR reporting compliance and disaster risk reduction	50.0	⊢—●—⊣	51 / 195

Indicator			
5.2) Cross-border agreements on public h			

Indicator			
5.3) International commitments			

Indicator			
5.4) JEE and PVS			

Indicator			
5.5) Financing			

Indicator			
5.6) Commitment to sharing of genetic & biological data & specimens	66.7	⊢—●—⊣	11

5.1.1) Official IHR reporting

1 Questions under this indicator:

Question 1:

5.1.1a) Has the country submitted IHR reports to the WHO for the previous calendar year?

Score and/or Justification:

1

Score References:

5.1.2) Integration of health into disaster risk reduction

1 Questions under this indicator:

Question 1:

5.1.2a) Are epidemics and pandemics integrated into the national risk reduction strategy or is there a standalone national disaster risk reduction strategy for epidemics and pandemics?

Category 6: Risk

Indicators

Indicator	Index Score		Rank
6.1) Political and security risk	89.3		14 / 195

Indicator	Index Score		Rank
6.2) Socio-economic resilience	99.9		2

Indicator	Index Score		Rank
6.3) Infrastructure adequacy	75.0		27

Indicator	Index Score		Rank
6.4) Environmental risks	59.4		57

Indicator	Index Score		Rank
6.5) Public health vulnerabilities	79.3		8

Category 6: Risk

Indicators

Indicator	Index Score		Rank
6.1) Political and security risk	89.3		14 / 195

Indicator	Index Score		Rank
6.2) Socio-economic resilience	99.9		2

Indicator	Index Score	
6.3) Infrastructure adequacy	75.0	

Indicator	Index Score	
6.4) Environmental risks	59.4	

Indicator	Index Score	
6.5) Public health vulnerabilities	79.3	

6.1.1) Government effectiveness

6.1.2) Orderly transfers of power

6.1.3) Risk of social unrest

6.1.4) Risk of biological terrorism

6.1.5) Armed conflict

6.1.6) Government territorial control

6.1.7) International tensions

6.2.1) Literacy /Adult literacy rate

6.2.2) Gender equality /6.2.2a) UNDP Gender Inequality Index score

6.2.3) Poverty levels

6.2.4) Public confidence in government / in public institutions

6.2.5) Local media and reporting / Is media coverage robust? Is there open and free discussion of public issues, with a reasonable diversity of opinions?

GHSI-score kontra covid-19-døde (23.02.2021)
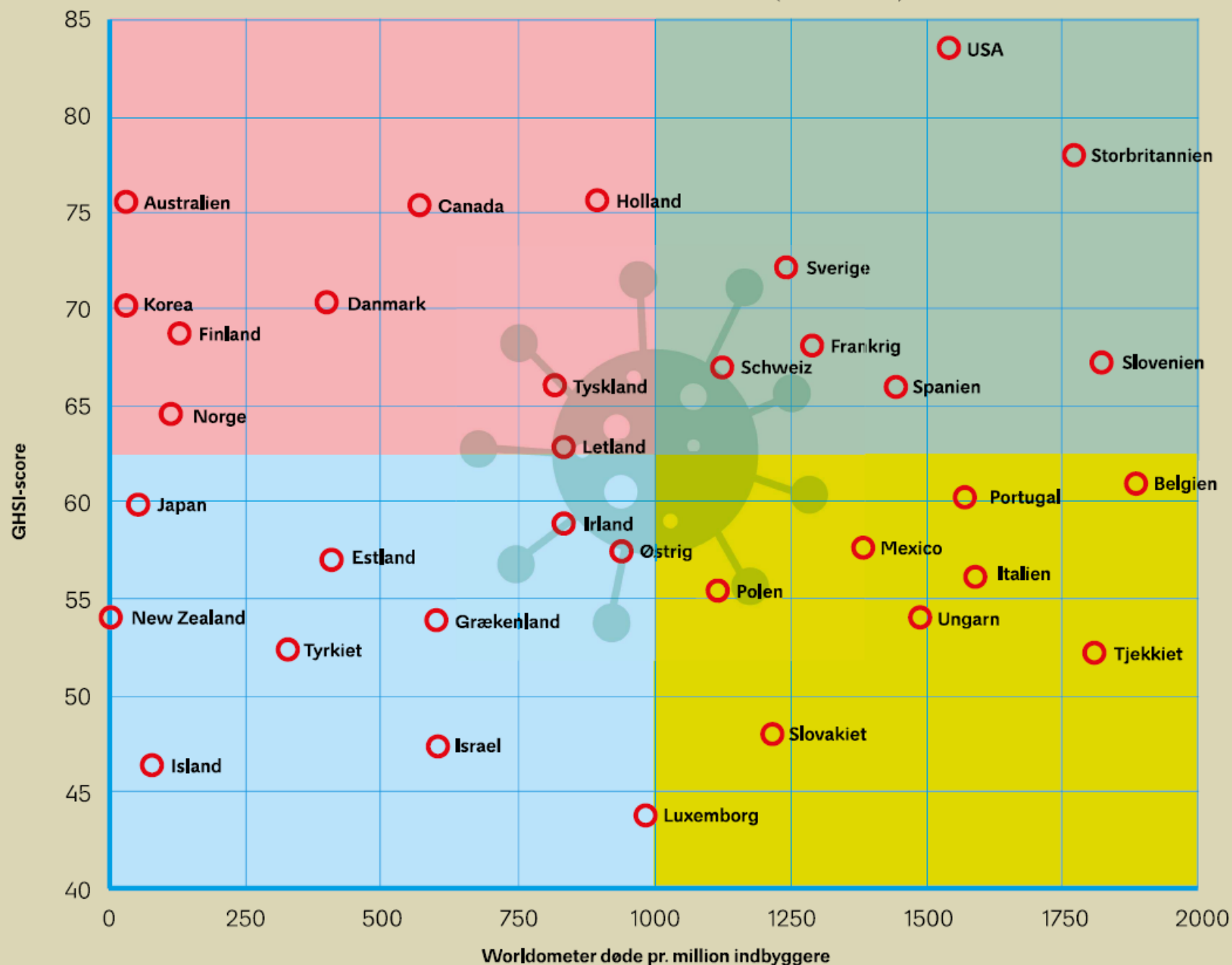
Data fra 23. feb. 2021 – ca 12 mdr efter pandemiens begyndelse (OECD-lande).

Inden vacciner er begyndt at påvirke dødelighed

Resultat: **Ingen korrelation mellem GHSI-score** (r=0,03;r2=0,001)

Fjerner vi USA er korrelationen fortsat forsvindende (r=-0,035;r2=0,001)

Og uden USA og UK (35 lande OECD lande tilbage) er korrelationen fortsat ubetydelig (r=-0,13: r2=0,016)

Kritik: GHSI passer jo ikke med data!

Et eksempel blandt flere, Abbey et. al.: statistik over OECD landes sundhedsdata fra pandemiens begyndelse indtil 18/5-2020 krydset med GHSI's rangordning.

Data fra landenes antal smittede (per capita), COVID19-dødsfald, helbredte og testede (jo højere rang, jo færre smittede og døde).

Analysen viser en moderat sammenhæng mellem de to rangordninger, men i "forkert" retning: Jo højere GHSI har scoret et land, jo højere smitteudbredelse og dødelighed kan forventes!

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Abstract

The ongoing COVID-19 pandemic has devastated many countries with ripple effects felt in various sectors of the global economy. In November 2019, the Global Health Security (GHS) Index was released as the first detailed assessment and benchmarking of 195 countries to prevent, detect, and respond to infectious disease threats. This paper presents the first comparison of Organization for Economic Cooperation and Development OECD countries' performance during the pandemic, with the pre-COVID-19 pandemic preparedness as determined by the GHS Index. Using a rank-based analysis, four indices were compared between select countries, including total cases, total deaths, recovery rate, and total tests performed, all standardized for comparison. Our findings suggest a discrepancy between the GHS index rating and the actual performance of countries during this pandemic, with an overestimation of the preparedness of some countries scoring highly on the GHS index and underestimation of the preparedness of other countries with relatively lower scores on the GHS index.

En helt frisk (10.10.2021) opdatering fra Wordometers.info med senest tal for covid-19 relaterede dødsfald per million langs X-aksen og GHSI-scoren på Y-.aksen. Begrænset til de 37 lande i OECD-gruppen.

Forsat ringe sammenhæng: GHSI-scoringer kan "forklare" / forudsige ku 3 pct. af variationen i pandemi-relaterede dødsfald

$(r=-0,18; r2=0,03)$

GHSi-score kontra Covid-19 døde (10.10.2021)
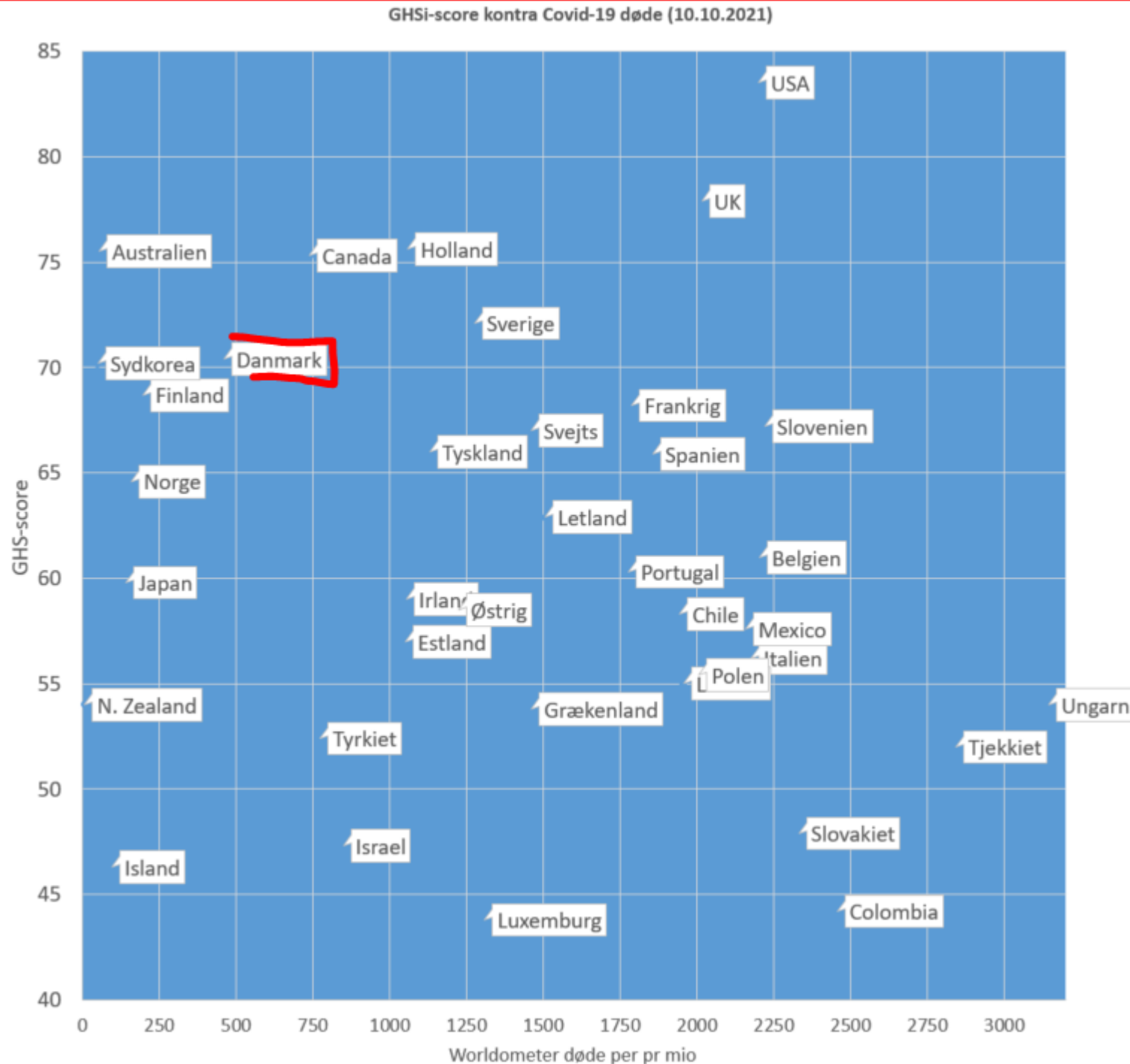
Bortforklaringer (1:2)

I sept. 2020 medgiver forfatterne til GHSI-rapporten, at deres indeks har ringe korrelation med COVID19-*outcomes* i en række høj-indkomstlande.

MEN: "ineffective [US] federal leadership and an inability to deploy available capacities may have precluded a concerted whole- of- government response to the pandemic" (Ravi 2020)

NB: GHSI-scoringer viser fortsat ringe eller ingen sammenhæng med covid19-dødsfald uanset at vi fjerner USA fra sammenligningen.

"the GHS Index is not a forecasting tool ….It cannot and does not predict whether or how a country will leverage available capacities to mitigate an unfolding crisis, nor does it make assumptions about the political decision-making processes underpinning these efforts."

Men jævnfør GHSI's mål at beskrive *"a country's capability to prevent and mitigate epidemics and pandemics"*
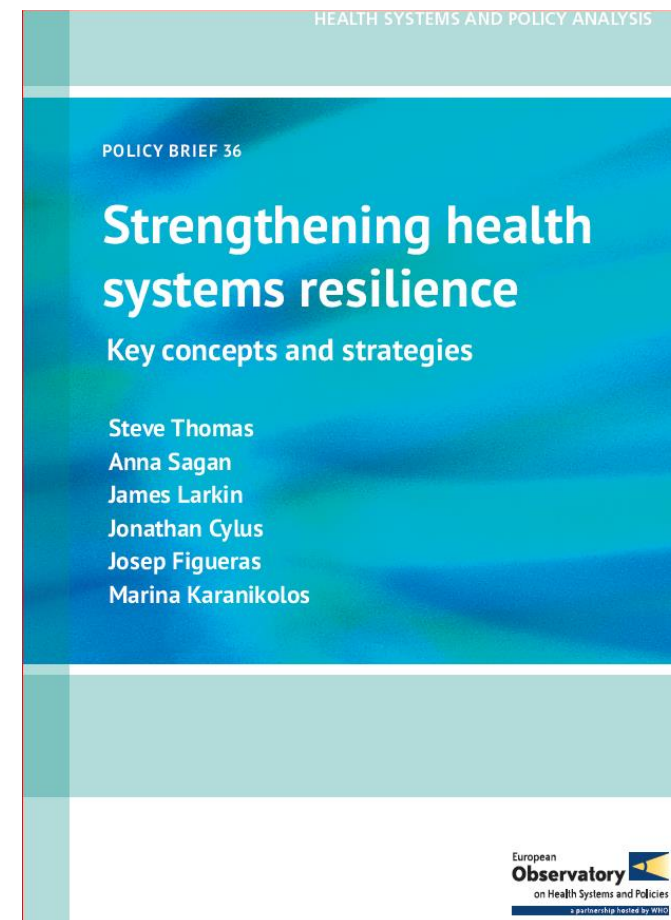
Dokumenterede beredskabskapaciteter skelner dårligt landes formåen. Hvor finder vi faktorerne?

Forskelle i ikke-teknokratiske faktorer ("bløde faktorer") har tilsyneladende en større rolle i pandemihåndtering:

- Ledelse
- Kommunikation
- Tillid
- Samfundssind
- …..

Et bud på en overordnet model: Health System Resilience

- Siden ca. 2015 fremvokset en større litteratur om sundhedssystemers resiliens.

- Google Scholar "health system resilience": 2015 - 2021 i alt ca. 1350 artikler. Godt halvdelen (800) fra 2020 – 21

- Første bølge foranlediget af Ebola- og SARS-epidemierne

- Seneste, større bølge naturligvis reference til COVID19-krisen

- Belyst i rapporter fra OECD og EU-ekspertgruppen inden for Health Systems Performance Assessment, (fx WHO – European Obervatory on Health Systems and Policies, 2020. OECD. (2020). *Building resilience to the Covid-19 pandemic- the role of centres of government - 20)*

HEALTH SYSTEMS AND POLICY ANALYSIS

POLICY BRIEF 36

Strengthening health systems resilience

Key concepts and strategies

Steve Thomas
Anna Sagan
James Larkin
Jonathan Cylus
Josep Figueras
Marina Karanikolos

European **Observatory**
on Health Systems and Policies
a partnership hosted by WHO

"State of the Health in the EU country profiles"
(European Commission, 2019),

<u>Sikre langsigtet stabilitet af ressourcer</u>:

- Evnen til at generere og beskytte de nødvendige og tilstrækkelige finansielle, fysiske, menneskelige/organisatoriske ressourcer + information for at kunne imødegå større udfordringer og trusler (økonomiske, befolkningssundhedsmæssige, demografiske og teknologiske).

<u>Respondere effektivt</u>:

- Evnen til at styre og håndtere sundhedssystemet med begrænsede ressourcer gennem øget produktivitet uden at ofre vigtige prioriteringer eller gavn for patienter og deres adgang/ ret til behandling. Evne til den i situationen optimale (best use) anvendelse af ressourcer.

<u>Forstærkelse af governance</u>:

- Evnen til at styre og håndtere systemet, så det tilpasser sig nye målsætninger og prioriteringer …. …at formulere en langsigtet sundhedsstrategi, at sikre ansvarlighed, transparens og involvering af parthavere samt brugen af evidens til at monitorere og foretage løbende resultatevaluering.

Der mangler en afgørende dimension i resiliens

- De nævnte institutionelle / strukturelle resiliens-faktorer er <u>rettet mod</u> befolkning / patienter.

- Men socio-kulturelle forhold (kultur) har vist sig at spille en afgørende rolle.

- Kultur (forslag til definition): En befolkningsgruppes overvejende fælles og gensidige forståelse af værdier, normer, symboler og af "hvordan vi gør tingene her" samt gruppemedlemmers overvejende fælles og gensidig forståelse af magt- og æresrelationer.

…..compared with high levels of cultural tightness, nations with high levels of cultural looseness are estimated to have had 4·99 times the number of cases … and 8·71 times the number of deaths (183 vs 21 per mill. respectively), taking into account a number of controls.

..tight groups cooperate much faster under threat and have higher survival rates than loose groups. The results suggest that tightening social norms might confer an evolutionary advantage in times of collective threat.

The relationship between cultural tightness–looseness and COVID-19 cases and deaths: a global analysis

Michele J Gelfand, Joshua Conrad Jackson, Xinyue Pan, Dana Nau, Dylan Pieper, Emmy Denison, Munqith Dagher, Paul A M Van Lange, Chi-Yue Chiu, Mo Wang

Summary

Background The COVID-19 pandemic is a global health crisis, yet certain countries have had far more success in limiting COVID-19 cases and deaths. We suggest that collective threats require a tremendous amount of coordination, and that strict adherence to social norms is a key mechanism that enables groups to do so. Here we examine how the strength of social norms—or cultural tightness–looseness—was associated with countries' success in limiting cases and deaths by October, 2020. We expected that tight cultures, which have strict norms and punishments for deviance, would have fewer cases and deaths per million as compared with loose cultures, which have weaker norms and are more permissive.

Methods We estimated the relationship between cultural tightness–looseness and COVID-19 case and mortality rates as of Oct 16, 2020, using ordinary least squares regression. We fit a series of stepwise models to capture whether cultural tightness–looseness explained variation in case and death rates controlling for under-reporting, demographics, geopolitical factors, other cultural dimensions, and climate.

Findings The results indicated that, compared with nations with high levels of cultural tightness, nations with high levels of cultural looseness are estimated to have had 4·99 times the number of cases (7132 per million vs 1428 per million, respectively) and 8·71 times the number of deaths (183 per million vs 21 per million, respectively), taking into account a number of controls. A formal evolutionary game theoretic model suggested that tight groups cooperate much faster under threat and have higher survival rates than loose groups. The results suggest that tightening social norms might confer an evolutionary advantage in times of collective threat.

Interpretation Nations that are tight and abide by strict norms have had more success than those that are looser as of the October, 2020. New interventions are needed to help countries tighten social norms as they continue to battle COVID-19 and other collective threats.

Løse og stramme kulturer

- Forskellen mellem "løse" og "stramme" kulturer ("loose" og "tight") afhænger af borgernes opfattelse af normer og brud på normer, deres reaktion over for overtrædelse af mere eller mindre formelle og usagte normer.

- Løs kultur: tolerance over for normbrud, normer mindre skarpt defineret, forventes ikke at andre reagerer stærkt over for overtrædelser;

- Stram kultur: borgere forventer at normer overholdes, at overtrædelser klart bliver misbilliget eller sanktioneret

- Løse kulturer finder Gelfand og kollegaer fx i Brasilien, Spanien, Italien og USA. Stramme kulturer eksemplificeres af Japan, Singapore, Kina, Østrig.

Michele Gelfand (psykologiprofessor ved University of Maryland):

Konklusioner

- Kapaciteter og teknokratiske faktorer: utvivlsomt vigtig rolle for et lands chancer for skånsomme outcomes af pandemi / epidemi

- Men GHSI's fejlskud indikerer at forskelle i teknokratiske / kapacitetsmæssige faktorer blandt høj-/mellemindkomstlande har ringe/ingen betydning for forskelle i dødsfald.

- Sundhedssystemers resiliens over for pandemier ser ud til at afhænge primært af forskelle i socio-kulturelle faktorer.

- <u>Mange åbne spørgsmål</u>:
  - Hvordan hænger de bløde faktorer sammen? Hvilke faktorer kan vi påvirke?
  - Hvordan afbalancerer vi tab af liv og leveår på tværs af aldersgrupper, tab af kære, mental sundhed, uddannelse, arbejde, frihed, karriere og livsmuligheder.

Baggrundsartikel for denne præsentation (med mange referencer) kan downloades fra:

https://orbit.dtu.dk/en/publications/håndtering-af-pandemier-hårde-og-bløde-faktorer

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