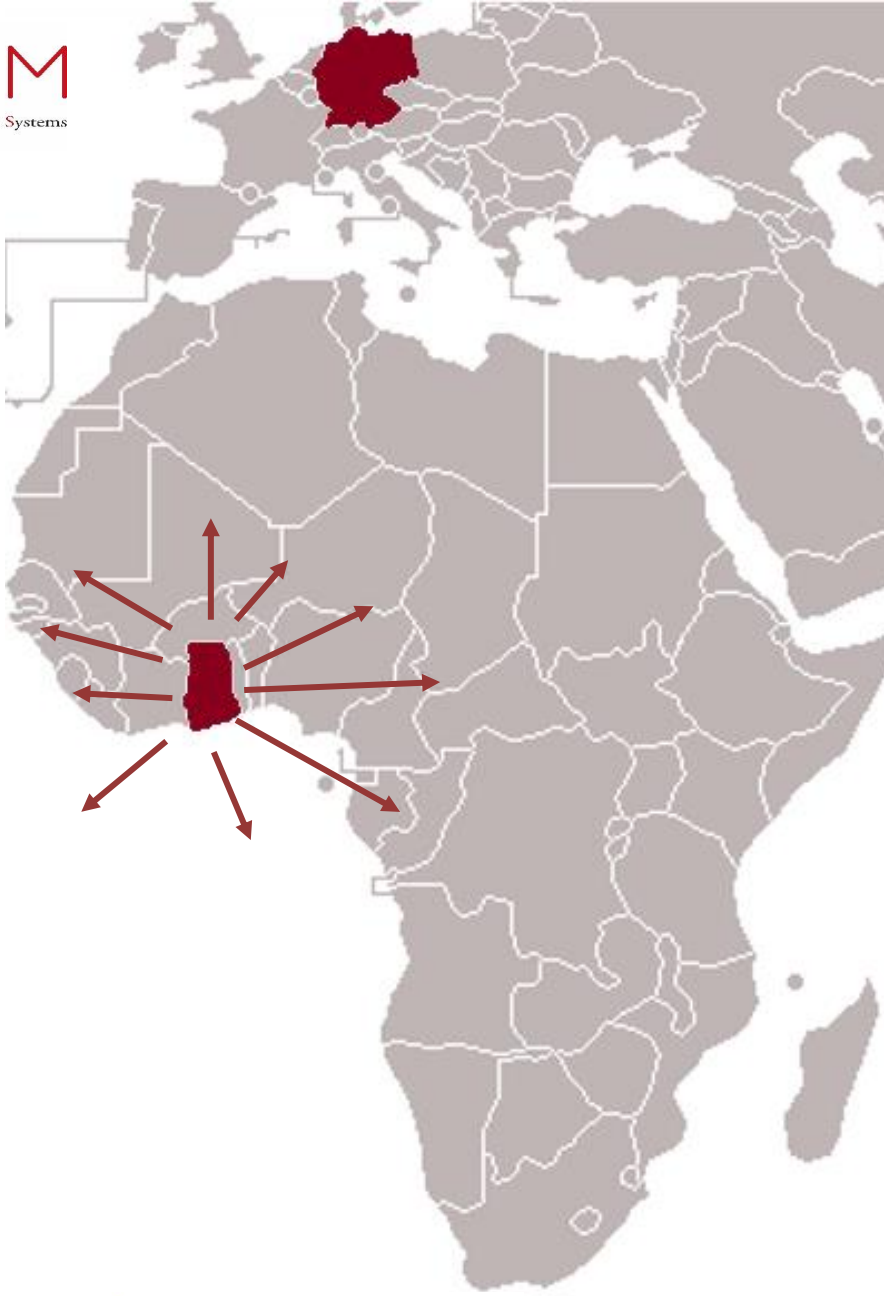
G-WAC German-West African Centre for Global Health and Pandemic Prevention

HSRM Capacity-building in Health Systems Research and Management

Indicators and data sources for HSPA: International experiences



Wilm Quentin, PD. Dr. med. MPH

Department of Health Care Management

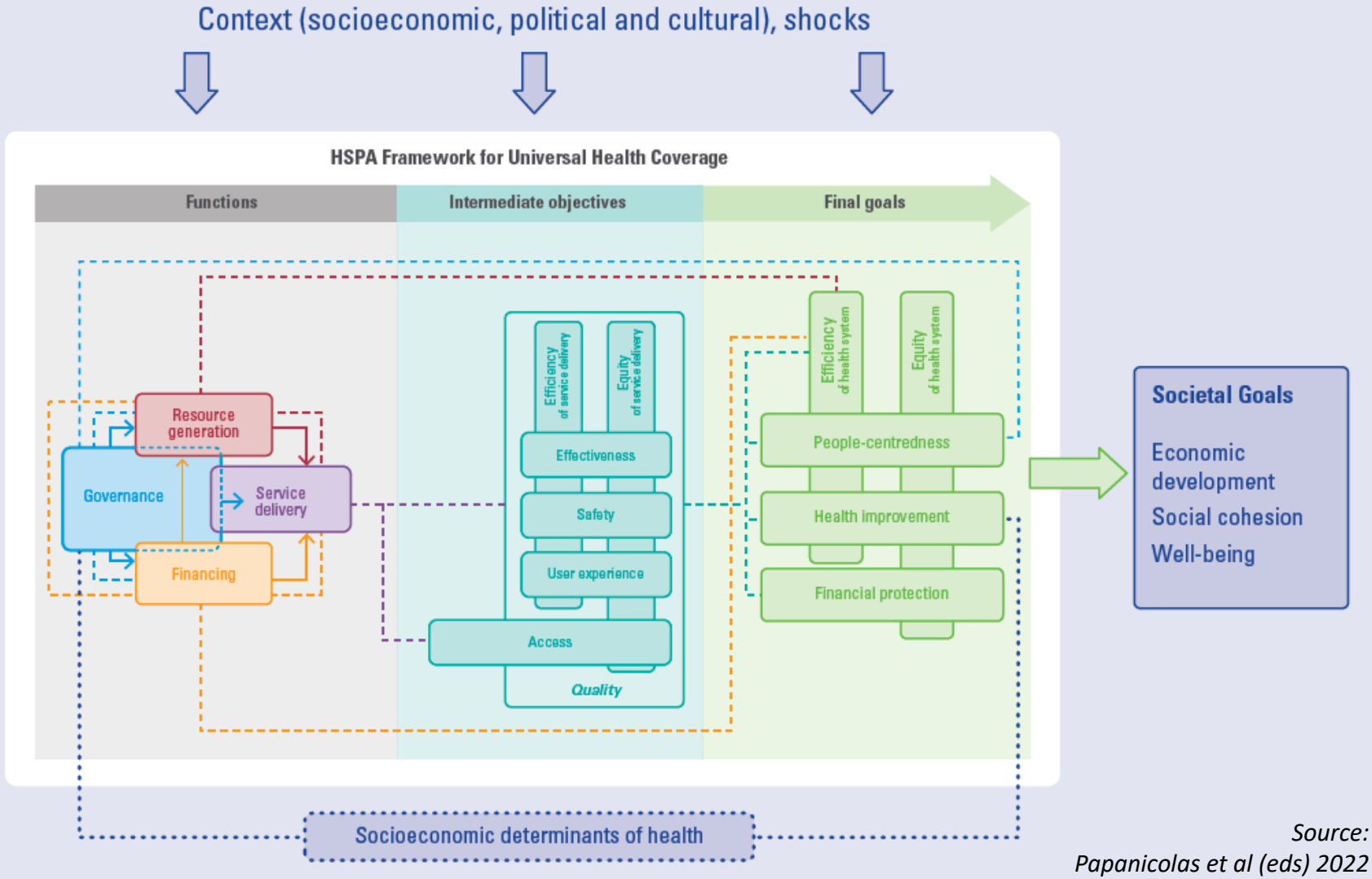
Berlin University of Technology

German West-African Centre for

Global Health and Pandemic Prevention

KNUST-SPH berlin MiG Federal Ministry for Economic Cooperation and Development PAGEL DAAD Global Centres Deutscher Akademischer Austauschdienst German Academic Exchange Service Global Health Centres Federal Foreign Office

How do we get from the framework to measuring performance → indicators



Source:
Papanicolas et al (eds) 2022

Agenda

- What is an indicator?
- Types of indicators
- Examples of indicators in different countries
- What are good indicators?
- Selecting indicators
  - Criteria for indicators
  - Criteria for data sources
- Presenting results
  - Aggregating information – composite indicators
  - Ohter options

What is a health system performance indicator?

- An indicator: „A thing that indicates the state or level of something”

Oxford English Dictionary

Measure type	Description	Examples
Health system performance indicator	A health indicator that has a desired direction (e.g., lower is better).	• 30-Day Surgical Readmission Rate • Percentage of Residents in Daily Physical Restraints • Hospitalizations Entirely Attributable to Alcohol

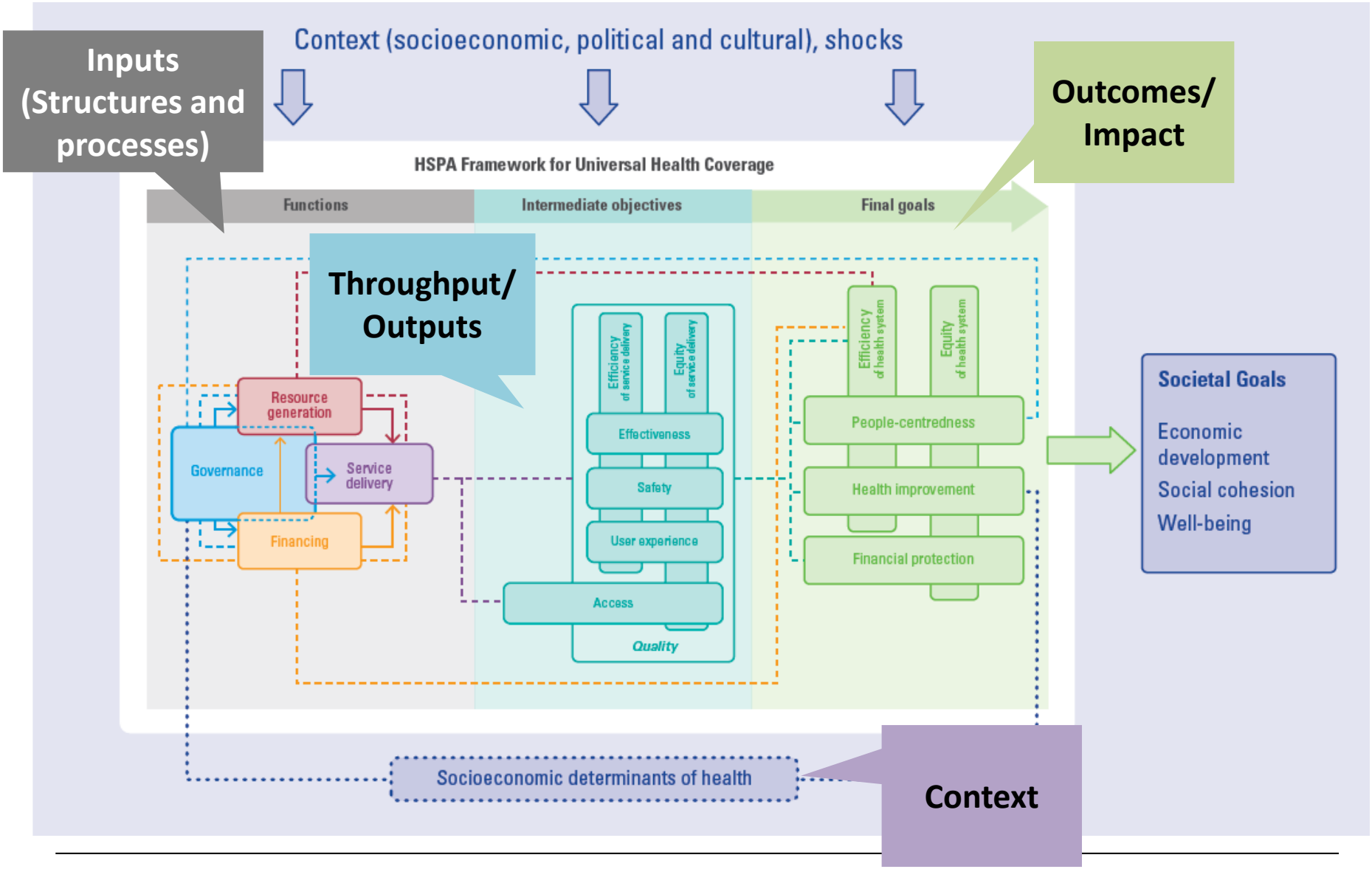
Canadian Institute for Health Information
Better data. Better decisions. Healthier Canadians.

Attributes of health system performance indicators

This is the ideal – in practice, HSPA indicators often do not have these attributes

- **Goal orientation**
  - A clear statement about the intended goal or objective
  - *Example: the entire population should be covered by health insurance*
- **Measurement concept**
  - A specified method for data collection and calculation of the indicator
  - *Example: the proportion of the population who are actively enrolled by the NHIS (or covered by another programme)*
- **Appraisal concept**
  - A description of how a measure is expected to be used to judge performance
  - *Example: the higher the proportion the better OR performance is good if proportion is above xx %*

Types of indicators

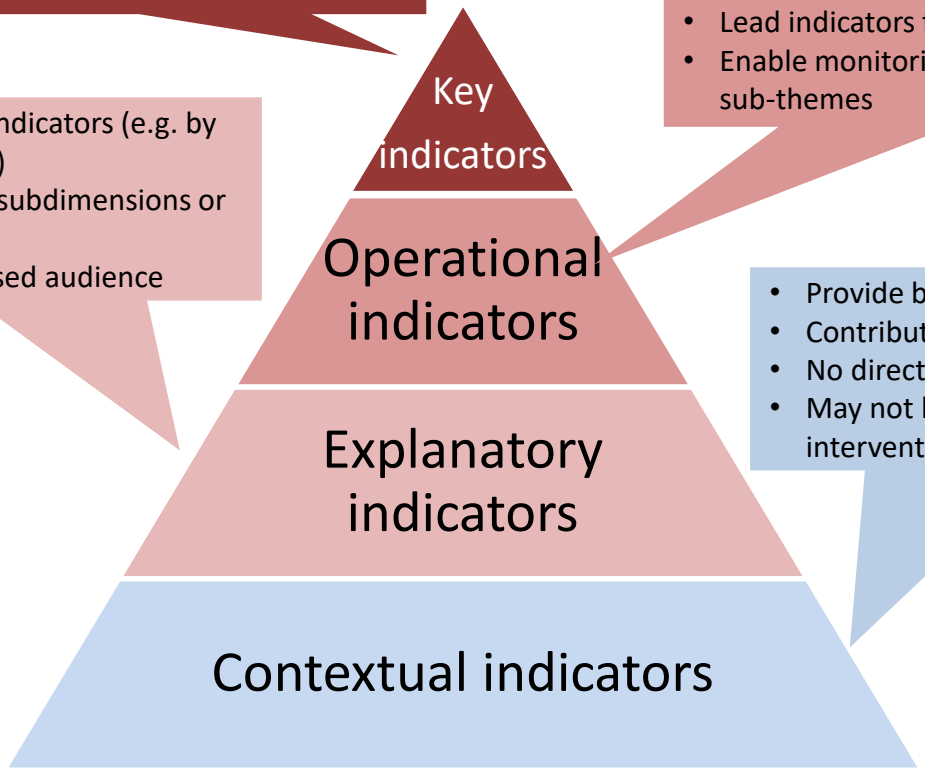


Types of indicators

- Monitor performance related to key objectives/ performance dimensions
- Enable overview of overall health system performance

- Lead indicators for sub-dimensions
- Enable monitoring of progress with regard to sub-themes

- Breakdowns of higher level indicators (e.g. by gender or income group etc.)
- Monitor progress in specific subdimensions or towards specific objectives
- Intended for a more specialised audience



- Provide background information for HSPA
- Contribute to understanding the context
- No direct measurement of goal achievement
- May not be directly amenable to policy intervention

Examples of indicators 1: Germany

Dimensions	Key indicators
Access	A.1 Share of population covered by health insurance
	A.3 Geographic distribution of doctors: Physicians density in predominantly urban and rural regions
	A.9 Self-reported unmet need for medical care (total by reason: cost, waiting time, distance)
Quality	Q.2 30-day (in-hospital) mortality
	Q.5 Ambulatory Care Sensitive Conditions (ACSC) Hospitalization Rate
	Q.8 Prevalence and incidence rate of hospital-acquired infections (% of patients hospitalized)
	Q.16 Cancer 5-year survival rate
Population health outcome	P.1 Amenable mortality rate
	P.4 Infant mortality rate
	P.8 Incidence rate of selected infectious diseases, vaccine preventable
Responsiveness	R.1 Patient experience with ambulatory care
Efficiency	E.7 Changes in amenable mortality and total health expenditure (% PPP)
	E.8 Amenable mortality rate per total health expenditure per capita (incremental)

Examples of indicators 1: Germany cont'd

Access		
A.1 Share of population covered by health insurance	Key indicator	Percentage of population covered by i) social health insurance, ii) substitutive private health insurance; % of annual average population.
A.2 Percentage of households experiencing high levels/catastrophic of out-of-pocket health expenditures	Operational indicator	Share of population experiencing catastrophic health expenditures as a share of household expenditure (denominator: household expenditures that are corrected for food, rent and other utilities spending)
A.3 Geographic distribution of doctors: Physicians density in predominantly urban and rural regions	Key indicator	Density of physicians per 1.000 population; by regions, specialty and ratio of physicians in urban and rural districts.
A.4 Access to acute care	Operational indicator	Percentage of people who can reach primary, emergency and maternity care services within 15/30 minutes. Primary care providers are GPs, internists and pediatrician; emergency care as Emergency Departments and maternity care providers are gynecologists.
A.5 Access for terminal palliative care: waiting times and geographical access	Explanatory indicator	Distribution of palliative care providers (inpatient and ambulatory) by districts per 1.000 population. Number of patients on waiting lists for i) inpatient palliative care providers e.g. hospices and ii) ambulatory care providers in days and weeks. Analysis distinguished between adult and youth/adolescent palliative care.

Examples of indicators 2: Belgium

Compared with EU-15 average

Table 7 – Indicators on accessibility of healthcare

(ID) indicator		SCORE	Belgium	Year
Financial accessibility				
A-1	Coverage by the compulsory health insurance (% of the population)	ST	99.0	2017
A-2	Out-of-pocket payments (% of current expenditures on health)	+	15.9	2016
A-10 *NEW*	Out-of-pocket medical spending (% of final household consumption)	ST	3.0	2016
A-3	Out-of-pocket payments per capita (in US $ PPP)	+	738.9	2016
A-11 *NEW*	Out-of-pocket payments for dental care (% of current expenditure on dental care)	-	57.6	2016
A-4**	Self-reported unmet needs for medical examination due to financial reasons in Belgium (% of individuals included in the survey)	+	2.0	2017
A-12 *NEW*	Access to agreed tariffs: Conventioned practising GPs in FTEs (per 10 000 population)*****	C	6.97	2016
A-13 *NEW*	Access to agreed tariffs: Conventioned practising dentists in FTEs (per 10 000 population)*****	C	3.17	2016
A-14 *NEW*	Percentage of the billed fee supplements to the billed official health insurance fees	↗	18.5	2017
Health workforce				
A-5	Practising physicians (/1000 population)	↗	3.1	2016
A-6	Practising nurses (/1000 population)	↗	10.9	2016

Good (●), average (●) or poor (●) results, globally stable (ST), improving (+), deteriorating (-) or trend not evaluated (empty).

Table 1 – Pictograms for the evaluation of indicators

+	Good results, and improving
●	Good results, and trend not evaluated
ST	Good results, and globally stable
-	Good results, but deteriorating
+	Average results, but improving
●	Average results, trend not evaluated
ST	Average results, and globally stable
-	Average results, but deteriorating
+	Poor results, but improving (warning signals)
●	Poor results, and trend not evaluated (warning signals)
ST	Poor results, and globally stable (warning signals)
-	Poor results, and deteriorating (warning signals)
C	Contextual indicator: no trend (no evaluation is given)
↗	Contextual indicator: upwards trend (no evaluation is given)
→	Contextual indicator: stable trend (no evaluation is given)
↘	Contextual indicator: downwards trend (no evaluation is given)

Contextual indicators

Example of indicators 2: Belgium cont'd

Table 2 – Indicators on effectiveness of care

(ID) Indicator			Belgium	Year
Effectiveness primary care – avoidable hospital admissions				
QE-1	Asthma hospital admissions in adults (/100 000 pop)	ST	30	2014
QE-2	Complication of diabetes hospital admissions in adults (/100 000 pop)	+	130	2014
Effectiveness hospital care – health outcomes				
QE-3	Breast cancer 5-year relative survival rate (%)	ST	89.9	2012
QE-4	Colorectal cancer 5-year relative survival rate (%)	+	67.5	2012
QE-5	Case fatality within 30 days after admission for AMI (pop. aged 45+, admission-based, %)	+	7.0	2016
QE-6	Case fatality within 30 days after admission for ischaemic stroke (pop aged 45+,admission-based, %)	ST	9.0	2016
QE-7 *NEW*	Case fatality within 30 days after surgery for colon (c) or rectal (r) cancer	+ ST	3.9 (c) 2.1 (r)	2011-2015
QE-7 *NEW*	Case fatality within 90 days after surgery for colon (c) or rectal (r) cancer	+ ST	6.7 (c) 4.2 (r)	2011-2015
QE-8	Amenable mortality, men	+	110.6	2013-2015
	Amenable mortality, women	+	81.0	2013-2015
QE-9	Preventable mortality, men	+	281.4	2013-2015
	Preventable mortality women	●	152.4	2013-2015

Good (●), average (●) or poor (●) results, globally stable (ST), improving (+), deteriorating (-) or trend not evalua

for colon/rectum cancer are presented separately in OECD Health Statistic; (4) Eurostats.

Compared with EU-15 average

Table 1 – Pictograms for the evaluation of indicators

+	Good results, and improving
●	Good results, and trend not evaluated
ST	Good results, and globally stable
-	Good results, but deteriorating
+	Average results, but improving
●	Average results, trend not evaluated
ST	Average results, and globally stable
-	Average results, but deteriorating
+	Poor results, but improving (warning signals)
●	Poor results, and trend not evaluated (warning signals)
ST	Poor results, and globally stable (warning signals)
-	Poor results, and deteriorating (warning signals)
C	Contextual indicator: no trend (no evaluation is given)
↗	Contextual indicator: upwards trend (no evaluation is given)
→	Contextual indicator: stable trend (no evaluation is given)
↘	Contextual indicator: downwards trend (no evaluation is given)

Examples of indicators 3: european Health Systems Indicator (euHS_I) survev

Perić *et al. Archives of Public Health* (2018) 76:32
https://doi.org/10.1186/s13690-018-0278-0

Domain	Name of indicator	Ranking by[b]		
		Individual preferences	HSPA domain	Headline
Access	Share of population covered by health insurance[a]	1	1	1
	Reported waiting times for access o specialist (care)	2	5	8
	Accessibility to acute care	3	3	2
	Waiting times for elective surgeries	3	8	31
Efficiency	Average length of stay (ALOS), total and selected diagnoses	1	1	39
	Total health care expenditure by all financing agents (total, public and private sectors)[a]	1	6	1
	Health expenditure per capita in PPP (purchasing power parities) in relation to life expectancy at birth	2	21	34
	Number of surgical operations and procedures	4	10	55
Quality of Care	Hospital Standardized Mortality Ratio (HSMR)	1	11	12
	Ambulatory Care Sensitive Conditions (ACSC) Hospitalization Rate	2	8	15
	Prevalence and incidence rate of hospital-acquired infections (% of patients hospitalised)[c]	3	1	4
Equity	GINI coefficient (income distribution)	1	20	48
	Geographic distribution of doctors: Physicians density in predominantly urban and rural regions	2	8	7
	Percentage of households experiencing high levels/catastrophic of out-of-pocket health expenditures[a]	3	1	7
	Self-reported/perceived general health	3	20	15
Health Status	Healthy Life Years (HLY)	1	2	3
	Life expectancy[a]	1	1	2
	Avoidable mortality rate: amenable and preventable deaths	2	8	5
	Infant mortality rate	4	3	1
Health Determinants	Prevalence of different smoking status, self-reported[a]	1	2	4
	Body Mass Index[a]	2	2	3
	Opportunities for education: Participation in early childhood education	3	7	24
	Overall experience of life: Life satisfaction	3	20	8

Examples of indicators 4: overview Europe

	Domains	Total number of Member States assessing the domain
Input	Service delivery	30
	Health workforce	25
	Information	10
	Medical products, vaccines and technology	14
	Financing	26
	Leadership and governance	12
Throughput	Access	13
	Coverage	7
	Quality	11
	Safety	7
Outcome	Improved health, including level and equity	29
	Responsiveness	7
	Social and financial risk protection	10
	Improved efficiency	7

Total number of WHO domains assessed	Member State
13	Belgium
12	Malta, Turkey
9	Albania, Armenia, Belarus, Tajikistan
8	Germany, Netherlands, Republic of Moldova
7	Azerbaijan, Croatia, Georgia, Sweden, Switzerland, United Kingdom
6	Bosnia and Herzegovina, Estonia, Hungary, Iceland, Ireland, Portugal
5	Denmark, the former Yugoslav Republic of Macedonia
4	Finland, Kyrgyzstan, Latvia, Poland, Russian Federation
3	Montenegro

Examples of indicators 5: WHO AFRO

Mostly contextual indicators

Table 1 Proxy indicators by capacity and vital sign for monitoring overall health system functionality

Capacities	Vital signs	Proxy indicators
Access to essential services	Physical access	Number of medical (general and specialist) personnel (per 1000 population).
		Number of nursing personnel (including midwives (per 1000 population)).
		Number of public health facilities (per square kilometre).
		Number of hospital beds (per 1000 population).
	Financial access	Domestic general government health expenditure (% of current health expenditure).
		Domestic general government health expenditure (% of general government expenditure).
		Out-of-pocket expenditure per capita, Purchasing Power Parity (PPP) (current international $).
		Out-of-pocket expenditure (% of current health expenditure).
		Incidence of catastrophic expenditure (%): at 10% of household total consumption or income.
	Sociocultural access	Secondary school completion rate, female (% of relevant age group).
		Primary school completion rate, female (% of relevant age group).
		Women's labour force participation.
		Intimate partner violence against women (%).
Quality of care in service provision	Individual healthy actions	Antenatal coverage (% receiving 4+ visits).
		Community health workers density (per 1000 population).
		Total alcohol consumption per capita (litres of pure alcohol), 15+ years of age.
		Smoking prevalence, total (ages 15+ years).
	Health-seeking behaviours	Antenatal Care (ANC) 1– 4 drop out.
		Diptheria, Pertusis, Tetanus (DP) containing vaccine, dose 1– 3 drop out.

What is a good indicator?

→ Criteria for selection of indicators

- **Relevance:** The extent to which the measures represent the most critical issues and priorities of the health system.
- **Actionability:** The extent to which the indicator is sensitive to changes in the health care system.
- **Meaningfulness**: Can the indicator be interpreted meaningfully in terms of content?
- **Validity:** The extent to which the indicator is well operationalized – evidence shows a link between indicator and desired objectives
- **Interpretability**: Is there a clear interpretation to a low (or high) value of this indicator? Is a good or bad result possible?

Criteria for evaluating data sources for indicators

- **Data availability:** is the indicaator already reported in an existing database – or could it be calculated using available data?
- **Regularity of data:** is the data collected regularly (annually/bi-annually)? How recent is the available data? Are time series analyses possible?
- **Stratification/Disaggregation:** possible to disaggregate data for relevant stratifiers, e.g. region, urban/rural, education, income, sex, age, etc.?
- **Sample size:** is it large enough for robust analyses? Is it sufficiently large for disaggregated analyses?
- **Representativeness:** is data representative for the relevant population (possibly after weighting)?
- **Reliability:** known problems with reporting of secondary data? known problems of conducted surveys? Are there large (unexplained) jumps between years?

Examples of data sources: Belgium

Box 3 – Sources of data in the Performance Report 2019

- **Statistics Belgium** is the main statistical authority in Belgium. It collects and disseminates all population and mortality data.
- **MZG – RHM and MPG – RPM** (Minimale Ziekenhuis Gegevens – Résumé Hospitalier Minimum and Minimale Psychiatrische Gegevens – Résumé Psychiatrique Minimal) are administrative hospital discharge data. They are collected and disseminated by the FOD – SPF Public Health.
- **IMA – AIM** (InterMutualistisch Agentschap – Agence InterMutualiste) data are billing data collected by all sickness funds. Data sources include the whole IMA – AIM database or a sample of it (EPS: échantillon permanent – permanente steekproef), and the IMA – AIM Atlas (an interactive web application).
- The **HIS** (Health Interview Survey) is organised every 4-5 years by Sciensano (formely the WIV – ISP) and collects data from about 10 000 persons in Belgium.
- **Farmanet – Pharmanet** is a database from RIZIV – INAMI which contains information (use, volume, etc.) on all reimbursed medicines in public pharmacies.
- The **SHA** (System of Health Accounts) database is maintained by the OECD. It contains details on health expenditure and financing at the country level.
- The **Workforce Register** is the national register on healthcare professionals maintained by the FOD – SPF Public Health. It contains information on new graduates and professionals licensed to practise.
- The **Belgian Cancer Registry** is an exhaustive national register of cancer cases. These data are linked to the IMA – AIM database to follow the care pathway of patients with cancer.
- Other national **registers** contain data on surveillance of hospital-acquired infections, surveillance of HIV, etc.
- Other **RIZIV – INAMI** databases (Doc N, Doc P) also provide information on providers of care and use of health services

Examples of data sources: Ireland

Fig. 2 Heatmap of data availability by data sources and main categories of healthcare services. Data availability mapping based on data obtained from the stakeholder interviews. Red = data not available; yellow = data partly available or technical capacity is (probably) available; green = data available; white/N/A = category not applicable or no information on data availability collected during interviews. The acute hospitals category includes only acute public hospitals, as such information is not centrally gathered for private hospitals. The social care category includes long-term care and disability services. Mental health includes inpatient, outpatient and acute mental health services

Ivanković et al.
Health Research Policy and Systems (2023) 21:1
https://doi.org/10.1186/s12961-022-00931-1

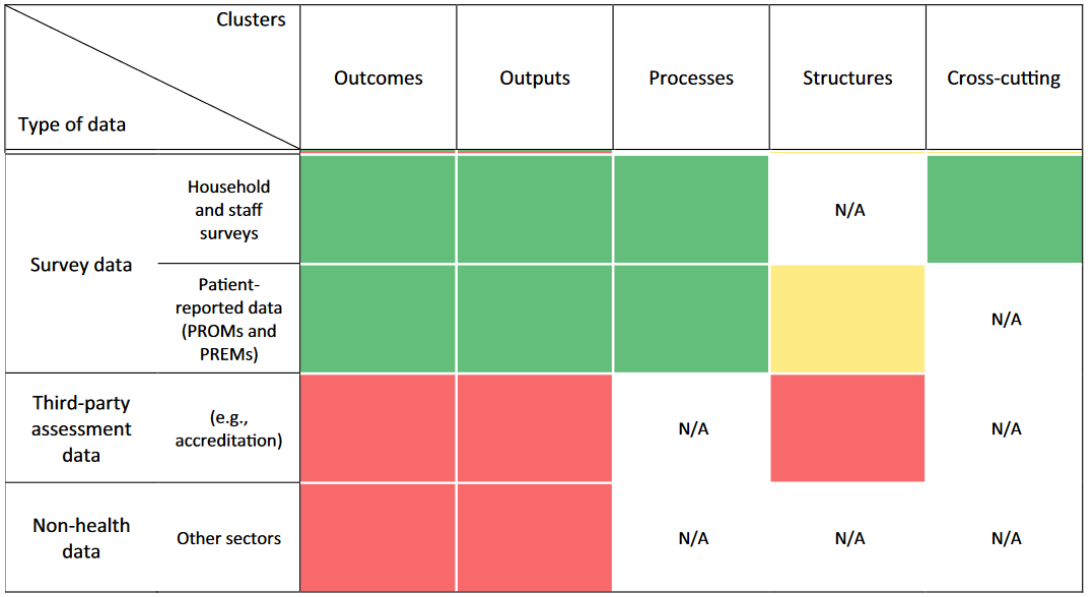
Health Research Policy and Systems

RESEARCH Open Access

Status of the health information system in Ireland and its fitness to support health system performance assessment: a multimethod assessment based on stakeholder involvement

Damir Ivanković[1,2*], Tessa Jansen[3], Erica Barbazza[1,2], Óscar Brito Fernandes[1,4], Niek Klazinga[1] and Dionne Kringos[1,2]

Examples of data sources: Ireland cont'd



Type of data \ Clusters		Outcomes	Outputs	Processes	Structures	Cross-cutting
Survey data	Household and staff surveys				N/A	
	Patient-reported data (PROMs and PREMs)					N/A
Third-party assessment data	(e.g., accreditation)			N/A		N/A
Non-health data	Other sectors			N/A	N/A	N/A

Fig. 2 Heatmap of data availability by data sources and main categories of healthcare services. Data availability mapping based on data obtained from the stakeholder interviews. Red = data not available; yellow = data partly available or technical capacity is (probably) available; green = data available; white/N/A = category not applicable or no information on data availability collected during interviews. The acute hospitals category includes only acute public hospitals, as such information is not centrally gathered for private hospitals. The social care category includes long-term care and disability services. Mental health includes inpatient, outpatient and acute mental health services

inković et al.
alth Research Policy and Systems (2023) 21:1
ps://doi.org/10.1186/s12961-022-00931-1

Health Research Policy and Systems

RESEARCH Open Access

Status of the health information system in Ireland and its fitness to support health system performance assessment: a multimethod assessment based on stakeholder involvement

Damir Ivanković[1,2*], Tessa Jansen[3], Erica Barbazza[1,2], Óscar Brito Fernandes[1,4], Niek Klazinga[1] and Dionne Kringos[1,2]

Prioritization of indicators

Content evaluation				
Relevance	Action-ability	Meaning-fulness	Validity	Interpret-ability

Evaluation of data sources for indicators					
Avail-ability	Regularity of data collection	Stratification/ Disaggrega-tion	Sample size	Represen-tativeness	Reliability

		Evaluation of data sources for indicators			
		1 = only positive	2 = mostly positive	3 = positive but high effort	4 = negative or no data
Content evaluation	1 = only positive	Recommended	Recommended	Only if data source can be improved	Creation of data source needed
	2 = slightly negative	Recommended	Only if no better indicator available	Only if no better indicator available	Not recommended
	3 = strongly negative	Not Recommended	Not Recommended	Not Recommended	Not Recommended

Aggregating information in composite indicators

- Large number of performance indicators may complicate assessment
  - Difficult to know whether system has improved „overall“
  - May lead to basing decisions on (subjectively) selected indicators
- Aggregation of indicators in composite is possible… but:
  - Several methodological challenges.
    - Selection of indicators
    - Transformation on common scale
    - Weighting of indicators (equal weight, preference weighted, frequency weighted)
  - Different valid options exist → results depend on methodological choices
  - Overall performance measure may disguise shortcoming in certain areas
  - May create disputes about methods for aggregation → taking attention away from results of individual indicators

Advantages and disadvantages of composite indicators

Advantages	Disadvantages
• Condense complex, multidimensional aspects of quality into a single indicator. • Easier to interpret than a battery of many separate indicators. • Enable assessments of progress of providers or countries over time. • Reduce the number of indicators without dropping the underlying information base. • Place issues of provider or country performance and progress at the centre of the policy arena. • Facilitate communication with general public and promote accountability. • Help to construct/underpin narratives for lay and literate audiences. • Enable users to compare complex dimensions effectively.	• Performance on indicator depends on methodological choices made to construct the composite. • May send misleading messages if poorly constructed or misinterpreted. • May invite simplistic conclusions. • May be misused, if the composite construction process is not transparent and/or lacks sound statistical or conceptual principles. • The selection of indicators and weights could be the subject of political dispute. • May disguise serious failings in some dimensions and increase the difficulty of identifying remedial action, if the construction process is not transparent. • May lead to inappropriate decisions if dimensions of performance that are difficult to measure are ignored.

Is it better to have a score?

Member State	ATTAINMENT OF GOALS						Health expenditure per capita in international dollars	PERFORMANCE	
	Health		Responsiveness		Fairness in financial contribution	Overall goal attainment		On level of health	Overall health system performance
	Level (DALE)	Distribution	Level	Distribution					
Equatorial Guinea	152	151	143	118	134	152	129	174	171
Eritrea	169	167	186	169 – 170	108 – 111	176	187	148	158
Estonia	69	43	66	69	145	48	60	115	77
Ethiopia	182	176	179	179 – 180	138 – 139	186	189	169	180
Fiji	106	71	57 – 58	73 – 74	54 – 55	78	87	124	96
#1 Finland	20	27	19	3 – 38	8 – 11	22	18	44	31
France	3	12	16 – 17	3 – 38	26 – 29	6	4	4	1
Gabon	144	136	118 – 119	101 – 102	84 – 86	141	95	143	139
Gambia	143	155	165 – 167	157	149	153	158	109	146
Georgia	44	61	165 – 167	141	105 – 106	76	125	84	114
Germany	22	20	5	3 – 38	6 – 7	14	3	41	25
Ghana	149	149	132 – 135	146	74 – 75	139	166	158	135
Greece	7	6	36	3 – 38	41	23	30	11	14
Grenada	49	82	63 – 64	84 – 85	147	68	67	49	85
Guatemala	129	106	115 – 117	159	157	113	130	99	78
Guinea	167	166	168 – 169	130 – 131	76 – 78	172	159	160	161
Guinea-Bissau	170	177	184	174	122 – 123	180	156	156	176
Guyana	98	126	114	105 – 106	45 – 47	116	109	104	128
Haiti	153	152	157 – 160	172 – 173	163	145	155	139	138
Honduras	92	119	129	163	178	129	100	48	131

Or is it more useful to have individual key indicators?

Table 1.4. **Dashboard on access to care, 2019 (or nearest year)**

	Coverage: Eligibility		Coverage: Satisfaction		Financial protection		Service coverage	
	Population eligible for core services (% population)		Population satisfied with availability of quality health care (% population)		Expenditure covered by compulsory prepayment (% total expenditure)		Population reporting unmet needs for medical care (% population)	
OECD	**98.0**		**71.0**		**74.0**		**2.6**	
Australia	100	◉	83	◉	66.6	◉		
Austria	99.9	◉	86	◉	75.2	◉	0.3	☑
Belgium	98.6	◉	92	☑	76.8	◉	1.8	◉
Canada	100	◉	78	◉	70.2	◉		
Chile	95.7	◉	39	☒	60.6	◉		
Colombia	94.7	◉	47	☒	77.5	◉		
Costa Rica	91.1	☒	63	◉	73.9	◉		
Czech Republic	100	◉	75	◉	81.8	◉	0.5	☑
Denmark	100	◉	89	☑	83.3	☑	1.8	◉
Estonia	95.0	◉	61	◉	74.5	◉	15.5	☒
Finland	100	◉	85	◉	77.8	◉	4.7	☒
France	99.9	◉	71	◉	83.7	☑	1.2	◉
Germany	100	◉	85	◉	84.6	☑	0.3	☑
Greece	100.0	◉	38	☒	59.8	◉	8.1	☒
Hungary	94.0	☒	62	◉	68.3	◉	1.0	◉
Iceland	100	◉	81	◉	82.9	◉	3.4	◉
Ireland	100	◉	66	◉	74.6	◉	2.0	◉
Israel	100	◉	72	◉	64.8	◉		

Note: ☑ Better than OECD average; ◉ Close to OECD average; ☒ Worse than OECD average. Estonia is excluded from standard deviation calculation for unmet needs.

Conclusions

- Before defining indicators, there has to be clarity about the scope of the assessment.
- A large number of potential indicators is available – and Ghana is already measuring many indicators
- Prioritisation is important
  - Select only the best indicators with the best data sources
- Presentation of results has to reduce complexity but overall scores (composites)
  - may be misleading and disguise failing in certain areas
  - they may lead to questioning the methodology
  - distract from the results of the indicators

Thank you!

More info available at:

www.mig.tu-berlin.de

www.healthobservatory.eu