

Quality Indicators to Improve Clinical Care

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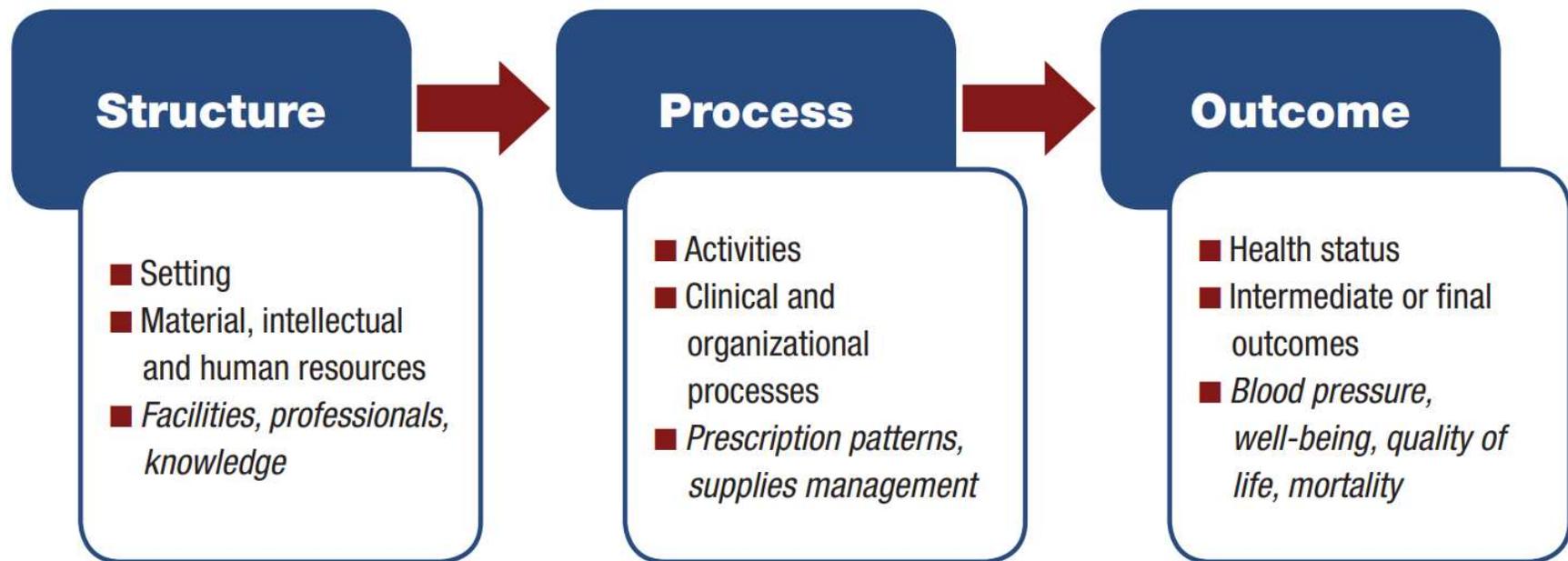
Background

- Attempts to monitor the quality of health care date back to the mid 1800s, when Florence Nightingale was measuring infection rates at British military hospitals during the Crimean War
- With growing awareness of gaps in safe, effective and person-centered care, pressure increases to measure quality of care
- There is a growing public demand for transparency and accountability
- Further, concerns increase about substantial practice variations in standards of healthcare delivery

Definitions of Quality of Healthcare

- Donabedian (1980): Quality of care is the kind of care which is expected to maximize an inclusive measure of patient welfare, after accounting for expected gains and losses that attend the process of care in all its parts.
- WHO (2018): Quality health services across the world should be:
 - Effective: Evidence-based health care for those who need it.
 - Safe: avoiding harm to people for whom the care is intended.
 - People-centered: Care responds to individual preferences, needs and values.

Donabedian's Structure-Process-Outcome (SPO) framework for Quality Assessment



Process, structure, and outcome are not independent. The relationships between structure, process, and outcome, are not fully understood

National law to improve quality and economic efficiency

- KVG Art. 58, in effect April 1, 2021
- Three different levels of quality improvement

Macro level: Government / regulatory systems

Meso level: Hospital / office level / professional society

Micro level: Physician – Patient – Interaction

Quality indicators for general internal medicine (GIM)

- Identified during a stepwise process to define domains with a high potential for quality improvement in GIM.
- Literature review of effective quality indicators: 36 process-, 15 outcome-, 4 structure related indicators
- Panel review of indicators: Pre-selection of 12 inpatient and 6 outpatient process indicators that may be useful to initiate and monitor a PDCA cycle
- Definition and description of the PDCA cycle and how the quality improvement process would work.
- Rating and review of indicators using criteria defined by the ACP
- External review and reflection of the indicators, publication

Campbell SM, Qual Saf Health Care 2002

MacLean CH, NEJM 2018

Wertli M, SAEZ 2021, <https://www.sgaim.ch/de/qualitaet/toolbox.html>

ACP Measure Review Criteria

1. **Importance**

Implementation of the measure will lead to a measurable and meaningful improvement in clinical outcomes (high prevalence, high morbidity/mortality/ severity), current practice may be improved (performance gap).

2. **Appropriate Care**

Avoids over- and underuse.

3. **Clinical Evidence Base is of high quality**

4. **Measure Specifications (validity and reliability)**

Numerator and denominator clearly defined. The indicator is able to detect the intended event.

5. **Measure Feasibility and Applicability**

Performance measure addresses an intervention that is under the influence of the physician. The collection is feasible and the burden acceptable.

Campbell SM, Qual Saf Health Care 2002
MacLean CH, NEJM 2018

Quality Indicators for acute GIM wards



Information exchange



New prescription of benzodiazepines



Prevention of falls



Inappropriate transfusions



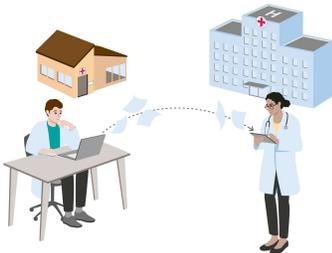
Critical Incident Reporting System CIRS



Vaccination against Hepatitis B

Quality Indicators for primary care

1



Information exchange

2



Patient directive

3



Medication interaction

4



Fall prevention

5



Addiction

6



Prevention / Lifestyle



INNOVATION QUALITÉ



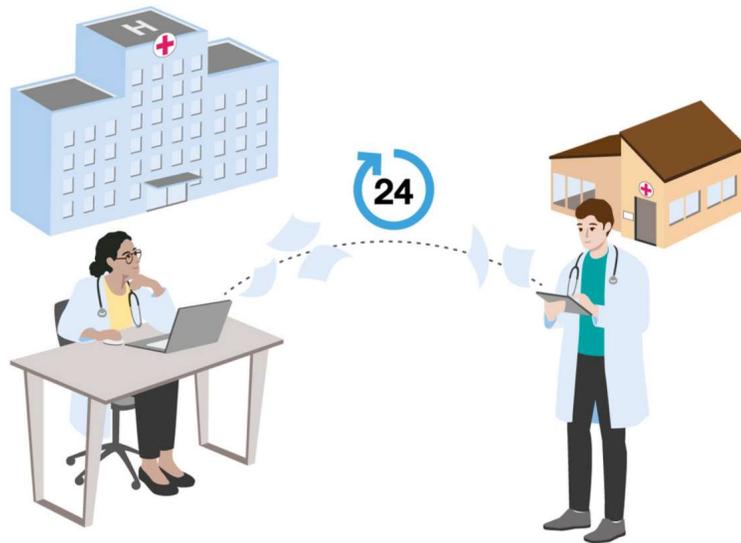
Quality indicator #1: Sharing information during a patient journey

- In multimorbid patients, specialty care is an increasingly important element
- In the US, referrals more than doubled between 1999 and 2009.
- Increased referrals result in increased health care fragmentation across providers, which is associated with missed and unmet needs
- Sharing of information and treatment plans among all three members of a specialty care “triad” – patient, primary care provider, and specialist – is important

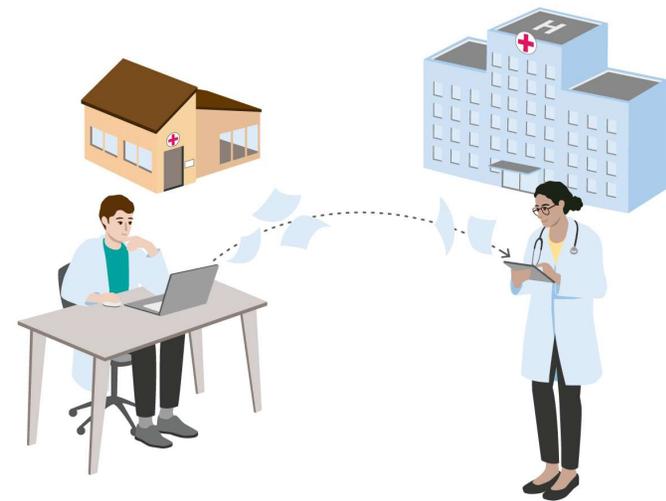
Kripalani S, JAMA 2007; Forster AJ, Ann Intern Med. 2003
Hoyer EH, J Hosp Med. 2016; Kim B, J Multidiscip Healthc 2015
Agency for Healthcare Research and Quality (AHRQ), Care Coordination,
<https://www.ahrq.gov/ncepcr/care/coordination.html>
Kripalani S, JAMA 2007

Quality indicator #1: Sharing information

Proportion of reports sent within 24 hours after discharge

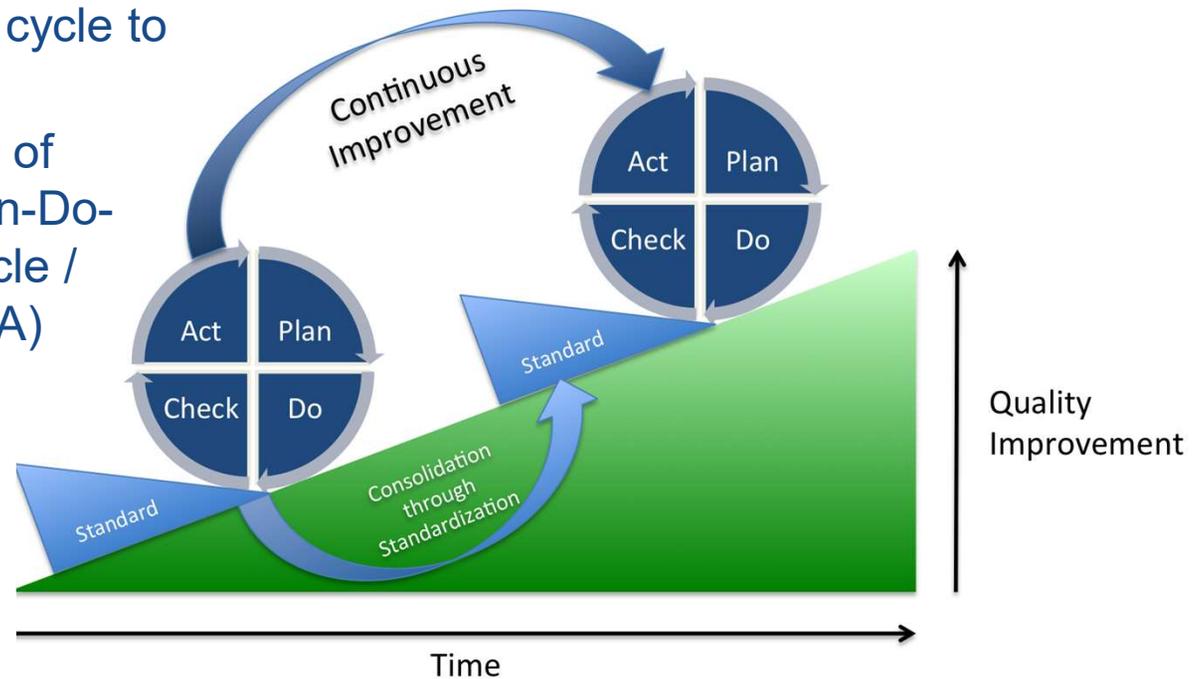


Proportion of referrals with reports to an evaluation of specialists / hospital



Framework of quality improvement

- Quality improvement measures are used in a continuous cycle to achieve a defined goal.
- The framework is a cycle of quality improvement: Plan-Do-Control-Act (PDCA) – cycle / Plan-Do-Study-Act (PDSA)



Amélioration de la qualité à l'exemple de l'indicateur

Quality indicator #2: New prescription of benzodiazepines



- Proportion of elderly patients with a new benzodiazepine prescription.
- Benzodiazepine prescriptions are associated with potential serious complications such as cognitive impairment, delirium, falls, hip fractures, and readmission.

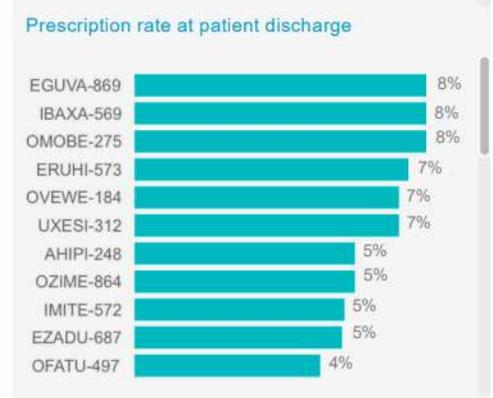
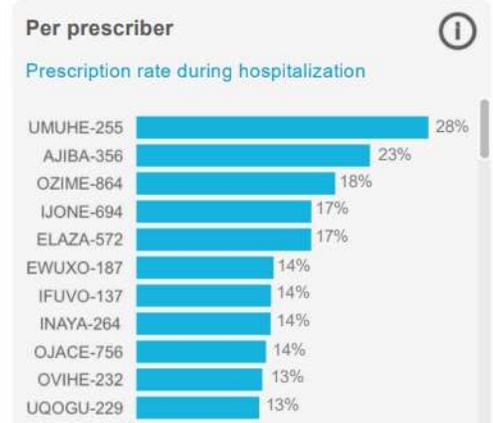
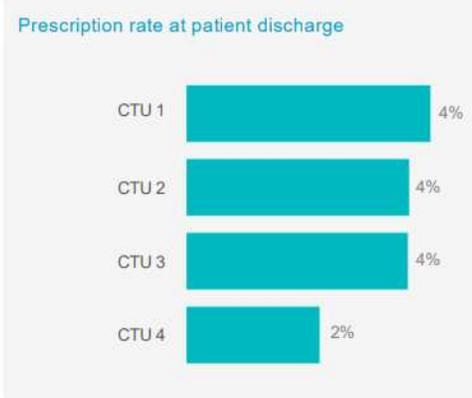
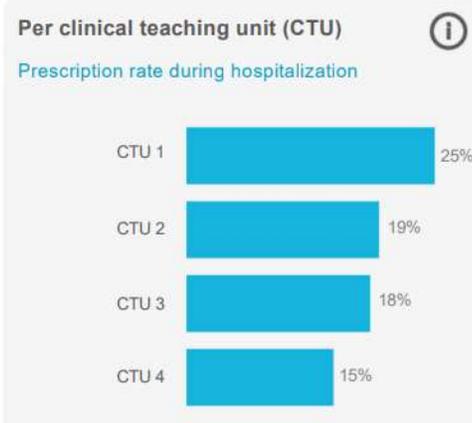
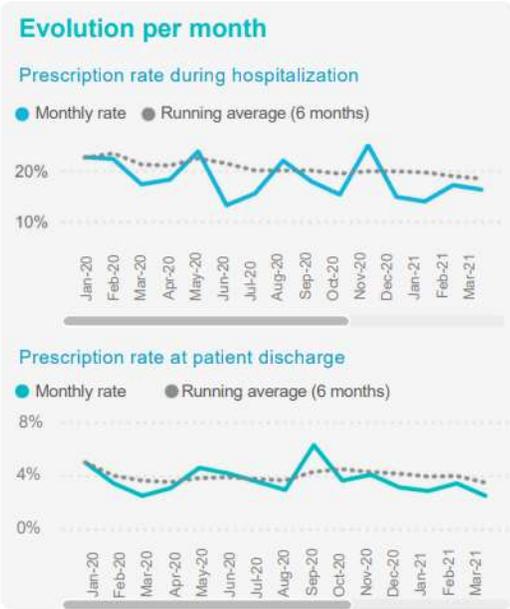
Xing D, Osteop. Int. 2014; Allain H, Drugs Aging 2005
Luta X., BMJ Open 2020; Fang-Yu L, Sleep 2014
Top-5-Liste Smarter Medicine.

<https://www.smartermedicine.ch/de/top-5-listen/stationaere-allgemeine-innere-medizin.html>

Example for the use of quality indicator #2

- Prospective pre–post educational study between 05-2020 and 10-2021
- La Tour Hospital (Geneva, Switzerland).
- Multifaceted behavioral intervention included:
 - Audit and data feedback: Dynamic dashboard with individual prescriptions of GIM residents in clinical teaching units (CTUs)
 - Peer comparison feedback: Anonymous report to the prescribers at the individual level permitting peer comparison (comparison of individual prescription to the median / highest and lowest users)

Benzodiazepine



Multifaceted intervention to reduce benzodiazepines

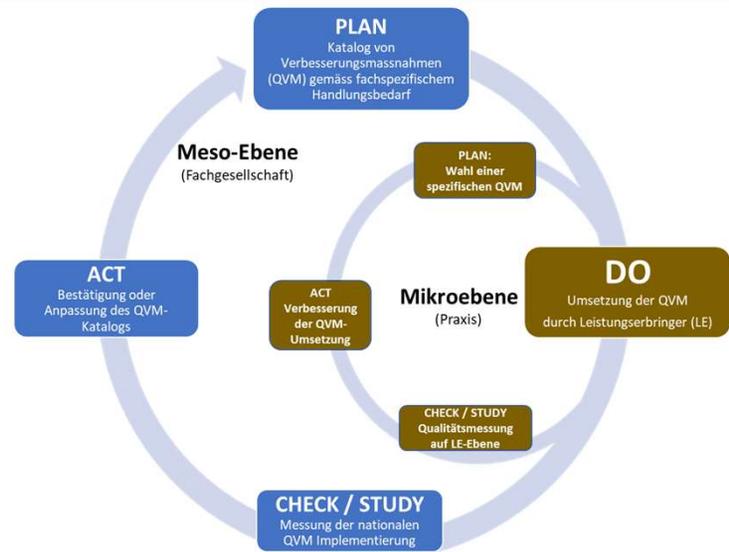
- Prescription rates of benzodiazepines at discharge
 - pre: 4.2% vs. post: 1.7%, $p = 0.003$
- Benzodiazepine prescription during hospitalization
 - pre: 18.5% vs. post: 15.8%, $p = 0.143$
- Even small reductions in benzodiazepine prescription rates may have a significant impact in reducing potential serious complications

Different levels of quality improvement

Macro level: Government / regulatory systems

Meso level: Hospital / office level / professional society

Micro level: Physician – Patient – Interaction



What are barriers to successfully implement quality improvement projects?

Quality improvement projects in acute care hospitals

- 46 surveys (37%) of 125 acute care hospitals in Canada
- Quality improvement projects:
 - Improving patient experience (79%)
 - Decreasing hospital costs (77%)
 - Reducing patient falls (75%)
 - Increasing hand-hygiene compliance (75%)
 - Reconciling patient medication at admission (70%)
 - Reducing resistant bacteria (MRSA, other) and C. difficile infections

Staff involvement in quality improvement activities

	Not involved (%)	Minimally involved (%)	Moderately involved (%)	Actively involved (%)	Very actively involved (%)
Senior managers (<i>n</i> = 46)	0	2	20	39	39
Middle managers (<i>n</i> = 44)	0	2	14	50	34
Nursing leaders (<i>n</i> = 46)	0	4	22	43	30
Hospital CEO (<i>n</i> = 46)	2	9	30	30	28
Board members (<i>n</i> = 46)	13	22	28	22	15
Physician leaders (<i>n</i> = 46)	0	17	35	37	11
Other regulated allied health professionals (<i>n</i> = 45)	0	13	47	31	9
Nursing staff (<i>n</i> = 45)	0	20	44	29	7
Support staff (<i>n</i> = 45)	0	38	44	13	4
Physicians (<i>n</i> = 45)	2	40	44	9	4

Factors associated with patient safety

- Three barriers to patient safety:
 - Physicians actively involved in QI efforts ($p = 0.02$)
 - Poorly engaged medical staff ($p = 0.02$)
 - Staff having problems with prioritizing QI work along with many other duties ($p = 0.05$)

Barriers and facilitators to changing practice

	Facilitators	Barriers
Individual / professional	<ul style="list-style-type: none"> - Detailed / credible data - Feedback to evaluate effects - Ability to act on feedback 	Knowledge / cognition: not convinced of the evidence
Interaction within the team		No mutual accountability and control
		No leadership / no support
Hospital	Supportive/collaborative management	Functioning of the facilities
	Administration support	Lack of resources / time / administrative support

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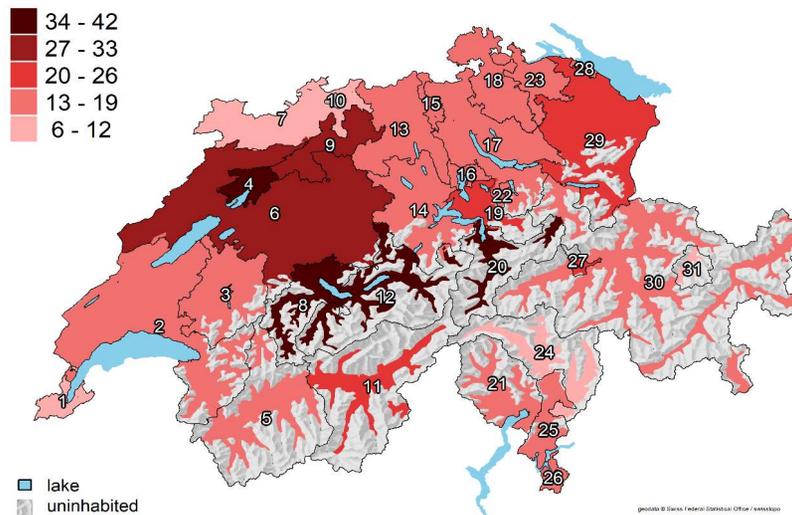


Wertli et al., PHC 2022

Variation in care in Switzerland between 2013 – 2018

- We observed wide and unexplained variation in elective procedures across Swiss regions.^{1,2}

Variation in predicted vertebroplasty and balloon kyphoplasty rates per 100,000 persons across 31 Swiss hospital service areas after adjusting for all determinants of variation.



[1] Frei et al, Osteoporosis International (2021)
[2] Wertli, Aujesky et al, PlosOne 2021

Effectiveness of Interventions on a Macro-Level

- Insufficient evidence to support financial incentives [...] in primary care.¹
- Small and non-sustainable effects of pay for performance (P4P) in hospitals.²
- Little or no difference in long-term health care utilization after public release of performance data.³
- Uncertain whether external inspection accreditation programs lead to improved outcomes.⁴

1Scott A et al, Cochrane Database of Systematic Reviews 2011

2Mathes T et al, Cochrane Database of Systematic Reviews 2019

3Metcalfe D et al, Cochrane Database of Systematic Reviews 2018

4Flodgren G et al, Cochrane Database of Systematic Reviews 2016²⁷

Summary

- Quality improvement is part of clinical care.
- Quality indicators should be used to support and standardize quality improvement cycles and be able to detect changes that may be addressed.
- Support of quality improvement projects (leadership, administrative, financial) is important.
- Medical staff should be involved and agree upon the need for quality improvement.

Thank you

SGAIM / SGIM

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