

Application Systems in Health Informatics

Quality and Value-based Healthcare

About Me

Bsc in Doctor of Pharmacy, BZU.

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Work experience: Community-based pharmacies, and Hospital based-pharmacies, Healthcare logistics and Health insurance claims, and Research in the field of Public and Digital Health.

Course Content

- Quality and Value-based Healthcare
- Digital Health Strategy
- Telematics
- Big Data and AI Health Technologies
- **Case Study.1:** Measuring the Impact of AI in Diagnosis of Hospitalized Patients A randomized Clinical Vignette Survey Study
- Collaborative Systems
- Telemedicine
- **Case Study.2:** Telemedicine vs In person Primary Care Treatment and Follow up visits + AI generated video
- Ambient Assisted Living
- **Case Study.3:** Improvement in Quality of Life with Use of Ambient Assisted Living Clinical Trial with Older Persons in the Chilean Population

Lecture content

- Quality and value-based Healthcare
- Six Domains of Healthcare Quality
- Rules for Healthcare re-design
- Framework for Implementing Value-based Healthcare

Quality or value-based healthcare represents a **fundamental reform of the healthcare delivery system** aimed at ensuring all individuals receive care that is of consistently high quality and provides the best value for resources expended. This concept is driven by the recognition of a "quality chasm" in the American healthcare system, where care too often harms patients and fails to deliver its potential benefits, despite rapid advancements in medical science and technology.

Quality and Value-based Healthcare

The Institute of Medicine (IOM) defines quality as **"the degree to which health care services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge"**. To achieve this, the healthcare system should define quality using measures determined by the outcomes patients desire.

A value-based healthcare system focuses **on using resources to get the best value for the money spent, specifically by avoiding waste and pursuing improvements that lead to better patient experiences in terms of safety, effectiveness, patient-centeredness, and timeliness**. This approach acknowledges that reducing expenditures alone does not increase value; instead, value is increased by systematically developing strategies focused on the aims of the healthcare system and eliminating activities or resources that do not add value.

Six Domains of Healthcare Quality

Healthcare should be:

1. **Safe** : avoiding injuries to patients from the care that is intended to help them. This means freedom from accidental injury, including errors, and ensuring processes do not harm patients through inadvertent exposure to chemicals, foreign bodies, trauma, or infectious agents.
2. **Effective** : providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse). Evidence-based practice, integrating the best research evidence with clinical expertise and patient values, is central to effectiveness.
3. **Patient-centered** : providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions. This includes respect for preferences, coordination of care, clear information, physical comfort, emotional support, and involvement of family and friends.

Healthcare should be

4. **Timely** : reducing waits and sometimes harmful delays for both those who receive and those who give care. It implies a smooth flow of services and a continual reduction in waiting times.
5. **Efficient** : avoiding waste, including waste of equipment, supplies, ideas, and energy. Improvements in efficiency can result from reducing overuse and errors.
6. **Equitable** : providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status. This aim supports universal access and fairness in treatment.

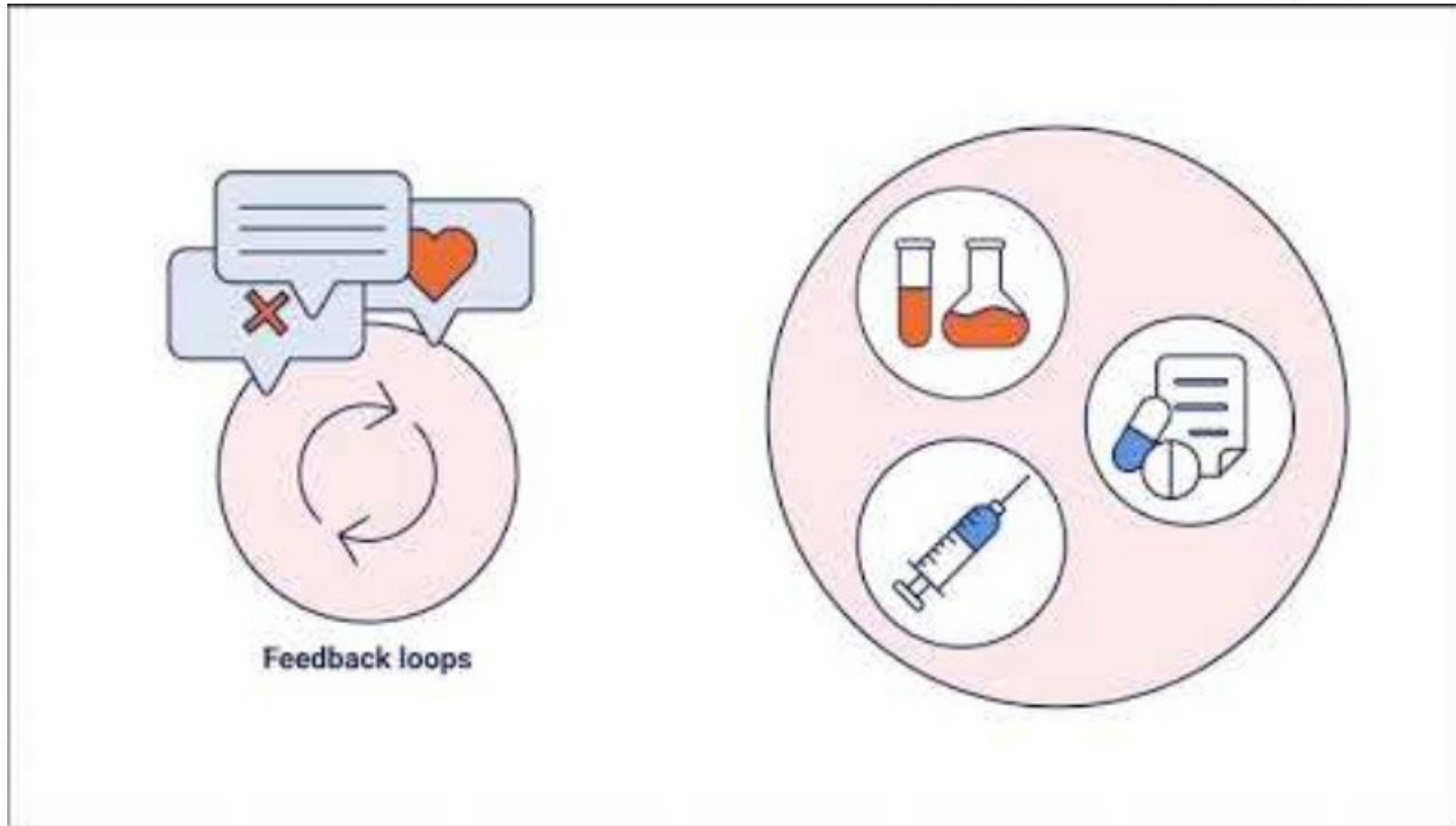
Ten simple rules to guide re-design

1. Care based on continuous healing relationships: Patients should receive care when needed, in various forms, not just face-to-face visits.
2. Customization based on patient needs and values: The system should meet common needs but adapt to individual choices and preferences.
3. The patient as the source of control: Patients should be informed and empowered to control healthcare decisions affecting them, encouraging shared decision-making.
4. Shared knowledge and the free flow of information: Patients should have unrestricted access to their medical information and clinical knowledge, with effective communication between clinicians and patients.
5. Evidence-based decision making: Care should be based on the best available scientific knowledge, reducing illogical variations in practice.

Ten simple roles to guide re-design

6. Safety as a system property: Patients should be safe from injury, requiring attention to systems that prevent and mitigate errors rather than blaming individuals.
7. The need for transparency: The healthcare system should openly provide information to patients and families regarding performance on safety, evidence-based practice, and satisfaction, while safeguarding confidentiality.
8. Anticipation of needs: The system should proactively predict and address patient needs rather than merely reacting to events.
9. Continuous decrease in waste: The healthcare system should avoid wasting resources or patient time.
10. Cooperation among clinicians: Clinicians and institutions should actively collaborate and communicate to ensure appropriate information exchange and coordinated care.

Value-based Healthcare



Framework for Implementing Value-based Healthcare



Figure 1 Strategic framework for value-based health care implementation to achieve better patient outcomes.

Framework for Implementing Value-based Healthcare

1. Understanding Shared Health Needs of Patients

This approach moves away from organizing services around providers (e.g., endocrinologists) and instead organizes care around patient needs (e.g., "people with knee pain"). This fundamental change aligns care with how patients experience their health. Structuring care this way allows clinical teams to anticipate consistent needs and efficiently provide frequently required services ("doing common things well"), which increases efficiency and frees up resources to personalize care for individuals.

2. Designing a Comprehensive Solution

The goal shifts from merely treating symptoms to solving patients' needs. A comprehensive solution addresses both clinical and nonclinical needs that might undermine health results, such as providing psychological counseling or relaxation training alongside drug therapy for migraine patients, or offering transportation assistance for cancer patients. This integrated approach is essential for achieving better outcomes by identifying and overcoming obstacles to patient health results.

Framework for Implementing Value-based Healthcare

3. Integrating Learning Teams

The integrated team structure fosters collaboration, often through co-location, reducing or eliminating the need for separate coordinators. Crucially, team members think together to improve and personalize care and learn together so that health outcomes improve with experience.

4. Measuring health outcomes and costs

Measurement focuses on the results that matter most to patients, which fall under the dimensions of capability, comfort, and calm. These dimensions define how patients experience their health, *such as the ability to do things that define them as individuals (**capability**), relief from physical and emotional suffering (**comfort**), and the ability to live normally while receiving care (**calm**).*

Framework for Implementing Value-based Healthcare

5. Expanding Partnerships

As teams prove they can deliver dramatically better health outcomes, often at lower overall costs, the evidence of better care creates opportunities to expand partnerships. For instance, employers may contract directly with providers and even pay more per episode of care if faster and fuller recovery reduces their overall costs related to absenteeism.

References

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