MODULE 3
Introduction to Quality and Quality Improvement in Health

Unit 3.3
The Theoretical Framework for Modern Quality Improvement
Unit 3.3: Objectives

• Discuss Deming’s theory of profound knowledge and other related theories
• Discuss theory of knowledge, systems, variation and psychology and how they relate to quality
• Discuss how KQMH has integrated the forementioned quality improvement theories and approaches
Content

• Deming’s theory of profound knowledge and other related theories
• Theory of knowledge, systems, variation and psychology and how they relate to quality
• How KQMH has integrated the forementioned quality improvement theories and approaches
Traditional & Modern Quality Improvement approaches

**Traditional**
- Supervision
- High level of command and control
- External checks
- Reward
- Reprimand

**Modern**
- Team based
- Evidence based
- Systematic
- Freedom to innovate, test, adopt / adapt / discard
“The aim of this chapter is to provide an outside view – a lens – that I call a system of profound Knowledge. It provides a map of theory by which to understand the organizations that we work in.”
Two types of knowledge

**Subject Matter Knowledge:** Knowledge basic to the things we do in life
Professional knowledge

**Profound Knowledge:** The interaction of the theories of systems, variation, knowledge, and psychology
Figure 4. Improvement Science Applied to Health Care Integrates Technical Content and Organization of Care

Technical Content
- Evidence based
  - Standards
  - Guidelines
  - High impact interventions

Organization of Care Processes
- Process Improvement & Measurement for Impact

Traditional Improvement Approaches

Science of Improvement

Adapted from Batalden and Stoltz (1993)

Client partnership
Appreciation of the System

Systems thinking (appreciating process & systems)
KQMH Principles

1. Systems approach to management
2. Process orientation
3. Leadership to provide guidance and motivation to quality improvement
4. Customer orientation (external and internal)
5. Involvement of people and stakeholders
6. Continuous quality improvement
7. Evidence-based decision making
Where in the System of Profound Knowledge are we learning?
Exercise: Complex Dynamic Systems

• Step 1 – Everyone stand up
• Step 2 – Without speaking, pick two people but don’t say who they are or point at them (Keep it a secret)
• Step 3 – Move to be equidistant from both of the people
• Step 4 – Move one person and repeat
Exercise (contd.)

• What realizations did you have about the systems?
• Can you illustrate a similar experience in your organization or organizations you work with?
Complex Adaptive Systems*

- Non-linear
  - Have system-wide properties not corresponding to properties of individual components.
    - Linear system-weighted sum of parts
- Self-organizing complexity
  - Emanates from adaptation and evolution.
  - Evolutionary fitness function reflects society’s values, practices, resources and priorities.
- Interdependence
Complex Adaptive Systems (contd.)

- The system self-organizes around its Identity (vision, purpose, guiding principles, values, history, shared aspirations)
- A clearly designed, shared identity allows the organization to self-organize in alignment with the identity desired by leadership.
Complex Adaptive Systems (contd.)

• The identity may be designed by leadership or occur by **accident**!
  - No clear directions if by accident
• Require leadership
  - Communicate vision & identity
  - Overcome resistance to change (psychology)
• Remove command & control
  - Individual desire for freedom to innovate
The Power of a System

• What are the implications of understanding the power of systems in determining outcomes? “Every system is perfectly designed to achieve the results it gets”.
  
  Paul Batalden

• Appreciating what a system is capable of, is central to making sound management decisions “sum not parts”.

  “If each part of a system, considered separately, is made to operate as efficiently as possible, the system as a whole will not operate as effectively as possible.”

  Russell L Ackoff
Theory of Knowledge
Epistemology (from philosophy)

• What is knowledge?
• How is knowledge acquired?
• What do people know?
• How do we know what we know?
• Belief, Truth, Justification, and Production of new knowledge

Is the room safe?? How do you Know?
Propositions

Truths

Knowledge

Beliefs
What is a Theory?

• A description of our best understanding about why things are the way they are

• What are some theories/beliefs?
  - Economics – Game theory
  - Biology – Theory of Evolution
  - Physics – String theory
  - Meteorology – Chaos theory
• Improvement is learning and developing new knowledge about the system. Requires several steps:
  1) Problem statement / aim
  2) Root Cause Analysis (theory of why?)
  3) Form a theory of solutions & countermeasures / change ideas
  4) Test the theory (Plan Do Study/Check Act)
  5) Check the results & modifying
  6) Adopt what is working, standardize & sustain
Introducing change into a system
What Changes Can We Make?
Understanding the System for Weight Loss

Outcome

Primary Drivers

Calories In

Secondary Drivers

Limit daily intake
Substitute low calorie foods
Avoid alcohol

Ideas for Process Changes

Track Calories
Plan Meals
Drink H2O Not Soda

Calories Out

Exercise

Fidgeting

“I every system is perfectly designed to achieve the results that it gets”

AIM: A New ME!

Work out 5 days
Bike to work
Hacky Sack in office

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Knowledge vs. information

My people suffer for lack of knowledge

- Knowledge = application of theory
- Prediction based in theory provides a foundation for planning a course of action
- Information by itself is useless and cannot lead to improvement
  - reactionary decision making = reactionary cycle
- Good intentions must be based on testable theory
Theory of knowledge key to improvement

- A theory, in the scientific sense, can be tested
- Theories are used to predict outcomes of future events
- In essence, a theory can be tested and experimented on – it is the starting place for generating new knowledge
Quantifying our Understanding of Systems & Improvement
Where in the System of Profound Knowledge are we learning?
Design & Redesign of Processes, Products & Services

Plan to Improve

Market Research & Feedback

Outcome for Clients

Support Process

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Using a Family of Measures

Driver Process

Mainstay Process

Support Process

Plan to Improve
Market Research
Measurement & Feedback

Outcome for Clients

Outcome Measure

Mainstay Measure 1

Mainstay Measure 2

Mainstay Measure 3

Driver Measure 1

Driver Measure 2

Support Measure 1

Support Measure 2

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Why go to the trouble of developing this understanding?

“If each part of a system, considered separately, is made to operate as efficiently as possible, the system as a whole will not operate as effectively as possible.”

Russell L Ackoff
Group Exercise: Where can we find the following in KQMH?

- Deming’s Theory of Profound Knowledge and PDCA
- Total Quality Management
- Donabedian’s Approach
- Joseph Juran’s Quality Trilogy
- Kaoru Ishikawa’s Approach
Total Quality Management

Nine common TQM practices:

1. Cross-functional product design
2. Process Management
3. Supplier quality management
4. **Customer involvement**
5. Information and feedback
6. **Committed leadership**
7. **Strategic planning**
8. Cross-functional training
9. **Employee involvement**
TQM approach within the KQMH?

**Evidence-based Medicine**
- Development/revision and dissemination of clinical and public health standards and guidelines that are evidence based

**Total Quality Management**
- Application and integration of QM principles into the organization
- Input > Process > Outcome
- Use of the Checklist (Level 2, 3, 4, 5&6)

**Patient Partnership**
- Patients / Clients are co-producers of health outcomes
- Promote community involvement and participation
- Respect patients’ rights and views
TQM approach within KQMH (contd.)

- KQMH modified the 9 TQM principles to adapt them to the Kenyan health situation.
- The new 7 underlying principles of the KQMH are:
  1. Leadership
  2. Customer orientation (external and internal)
  3. Involvement of people and stakeholders
  4. Systems approach to management
  5. Process orientation
  6. Continuous quality improvement
  7. Evidence-based decision making
The 7 underlying principles of the KQMH in detail:

1. Leadership

This is required to provide guidance and motivation to Quality Improvement. In this respect, leaders should:

• Create unity in the objective and the directions of the organization
• Maintain a team environment in which staff can become fully involved in achieving the organization’s objectives
TQM approach within KQMH (contd.)

Leadership (contd)

• Demonstrate commitment to the organization
• Help to overcome workers natural resistance to change and to convince staff that quality is important
TQM approach within KQMH (contd.)

2. Customer orientation (External and Internal)

• Organizations depend on their customers and therefore should:
  - understand current and future needs
  - meet customer requirements
  - strive to exceed expectations
  - build up a relationship and show commitment
  - provide feedback, M&E
  - display and communicate patients’ rights
4. Systems Approach to Management

Identifying, understanding and managing interrelated steps and processes as a system contributes to the organization’s effectiveness and efficiency in achieving its objectives.
TQM approach within the KQMH?

6. Continuous Quality Improvement

Quality improvement is a never-ending journey. Continuous improvement of the organization and overall performance should be the permanent objective of the organization.
Aaron Donabedian

“QUALITY IS DEFINED AS THE EXTENT RESEMBLANCE BETWEEN THE PURPOSE OF HEALTHCARE AND THE TRULY GRANTED CARE”

DONABEDIAN 1986
Aaron Donabedian

• One of the first medical educated persons who went deeper into the quality of healthcare.
• Was an early exponent of systems thinking in health services.
• “Systems awareness and systems design are important for health professionals, but are not enough. They are enabling mechanisms only. It is the ethical dimension of individuals that is essential to a system’s success. Ultimately, the secret of quality is love.”
• Donabedian’s classic paradigm for assessing quality of care is based on a three-component approach—structure, process, and outcomes.
Donabedian’s Approach

**Structure**
Facilities, Personnel, Equipment

**Process**
Actions to evaluate and treat the patient

**Outcome**
Results for patients
Donabedian’s Approach (contd.)

Structure

- Personnel (Number and Training)
- Facilities and equipment
- Range of services
- Organization
- Management/Administration structure
- Information system
- Financing (Profitability, Capitalization)
- Resources
- Infrastructure
Donabedian’s Approach (contd.)

Process

- Admission procedure
- Management/Planning of beds
- Standards for all departments
- Discharge planning and communication
- Cooperation with other disciplines
- Theatre management
Donabedian’s Approach (contd.)

**Outcome:**

- Mortality
- Morbidity
  - Bed sores
  - Transfusion reaction
  - Post-operation infections
- User evaluation: Satisfaction of care
KQMH dimensions are arranged in a Donabedian approach

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>PROCESS</th>
<th>OUTCOME</th>
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</thead>
<tbody>
<tr>
<td>1. Leadership-supervision</td>
<td>11. Process:</td>
<td>12. Results:</td>
</tr>
<tr>
<td>2. Human Resources</td>
<td>- Client–Provider Interaction</td>
<td>- User/client satisfaction</td>
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<td>3. Policy; S&amp;G</td>
<td>- Continuous QI</td>
<td>- Performance of facility and PHC programmes</td>
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<tr>
<td>4. Facility</td>
<td>- Programme Mgmt RH; Malaria, EPI, HIV/AIDS/TB; IMCI; Communicable diseases</td>
<td>- Staff satisfaction</td>
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<td>5. Supplies</td>
<td>- Quality Improvement Teams</td>
<td>- Society satisfaction</td>
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<td>6. Equipment</td>
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<td>7. Transport</td>
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<td>8. Referral</td>
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<td>9. Records &amp; HMIS</td>
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<td>10. Financial Mgmt.</td>
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More on Deming

His 14-point plan is a complete philosophy of quality management:

1. Create constancy of purpose towards improvement of product and service
2. Adopt the new philosophy. We can no longer live with commonly accepted levels of delay, mistakes and defective workmanship
3. Cease dependence on mass inspection. Instead, require statistical evidence that quality is built in
4. End the practice of awarding business on the basis of price
5. Find problems. It is management’s job to work continually on the system
6. Institute modern methods of training on the job
7. Institute modern methods of supervision of production workers. The responsibility of foremen must be changed from numbers to quality.

8. Drive out fear, so that everyone may work effectively for the company.


10. Eliminate numerical goals, posters and slogans for the workforce asking for new levels of productivity without providing methods.

11. Eliminate work standards that prescribe numerical quotas.

12. Remove barriers that stand between the hourly worker and their right to pride of workmanship.

13. Institute a vigorous programme of education and retraining.

14. Create a structure in top management that will push on the above points every day.
More on Deming (contd.)

Is famous for his **PLAN-DO-CHECK-ACT** or **PLAN-DO-STUDY-ACT** cycles.
More on Deming (contd.)

- Take actions to gain the expected results if not yet reached
- Establish objectives and define methods to reach them
- Monitor and evaluate the obtained results against the expected results
- Implement what you have planned

Act

Plan

Check

Do
• Developed the quality trilogy:
  – quality planning
  – quality control
  – quality improvement

• Good quality management requires quality actions to be planned out, improved and controlled
Juran’s approach

• The process achieves control at one level of quality performance, then plans are made to improve the performance on a project by project basis, using tools and techniques such as Pareto analysis.
• Believed quality is associated with customer satisfaction and dissatisfaction with the product
• Rmphasised the necessity for ongoing quality improvement through a succession of small improvement projects carried out throughout the organisation
Juran’s approach (contd.)

His ten steps to quality improvement are:

1. Build awareness of the need and opportunity for improvement
2. Set goals for improvement
3. Organise to reach the goals
4. Provide training
5. Carry out projects to solve problems
6. Report progress
7. Give recognition
8. Communicate results
9. Keep score of improvements achieved
10. Maintain momentum
Kaoru Ishikawa’s approach

Emphasized use of the “seven basic tools of quality”:

1. Pareto analysis  
   *which are the big problems?*

2. Cause and effect diagrams  
   *what causes the problems?*

3. Stratification  
   *how is the data made up?*

4. Check sheets  
   *how often it occurs or is done?*

5. Histograms  
   *what do overall variations look like?*

6. Scatter charts  
   *what are the relationships between factors?*

7. Process control and charts  
   *which variations to control and how?*
Kaoru Ishikawa’s approach

- Kaoru Ishikawa believed these 7 tools should be known widely, if not by everyone, in an organization and used to analyze problems and develop improvements.
- One of the most widely known of these is the Ishikawa or fishbone or cause-and-effect diagram.
End

Thank you very much!