



# The Importance of the Nephrology Biomedical Technologist.

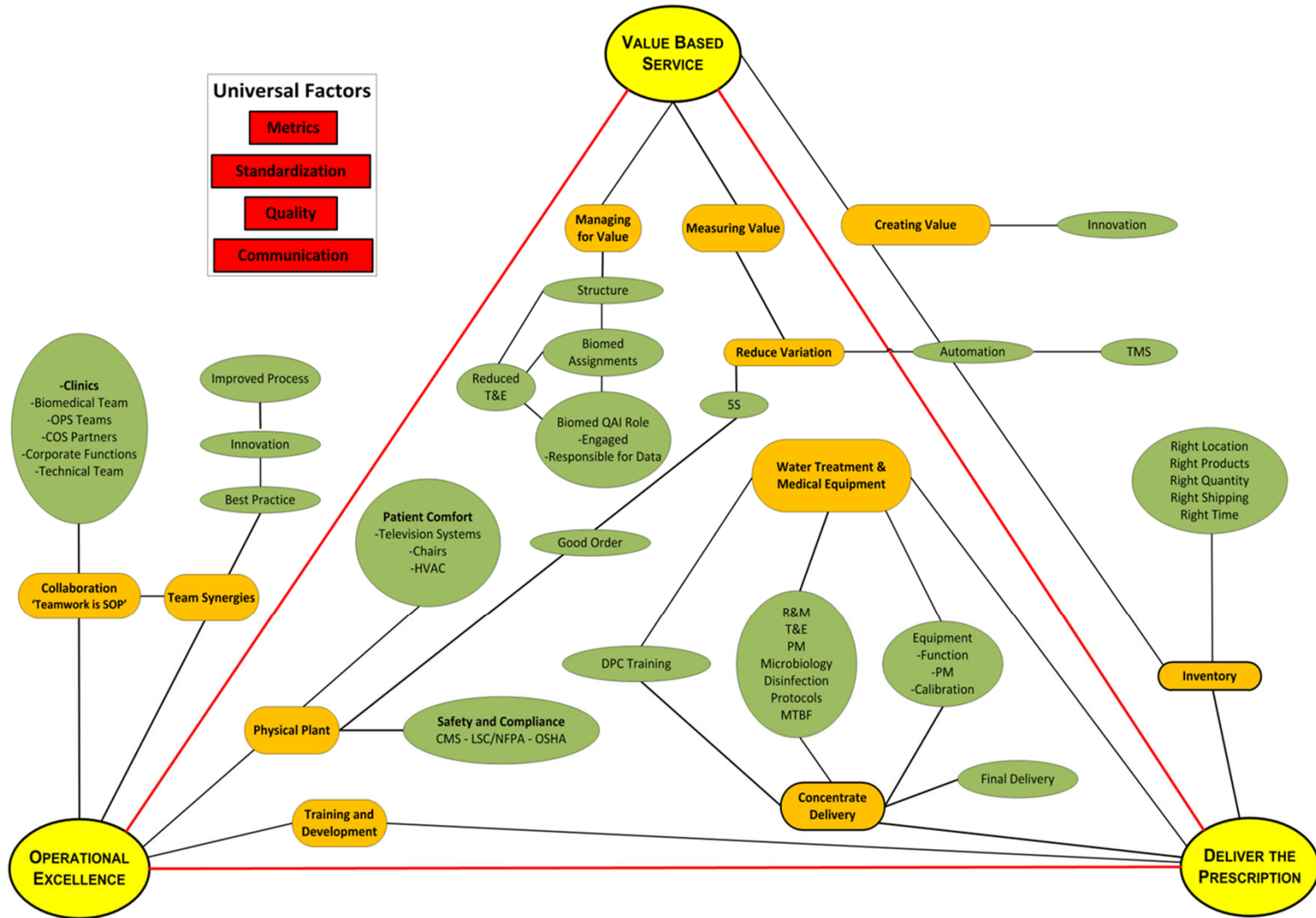
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Zane Greear, DBA

March 21, 2019

# Navigating Workplace Complexity







Deliver the Prescription



X



X



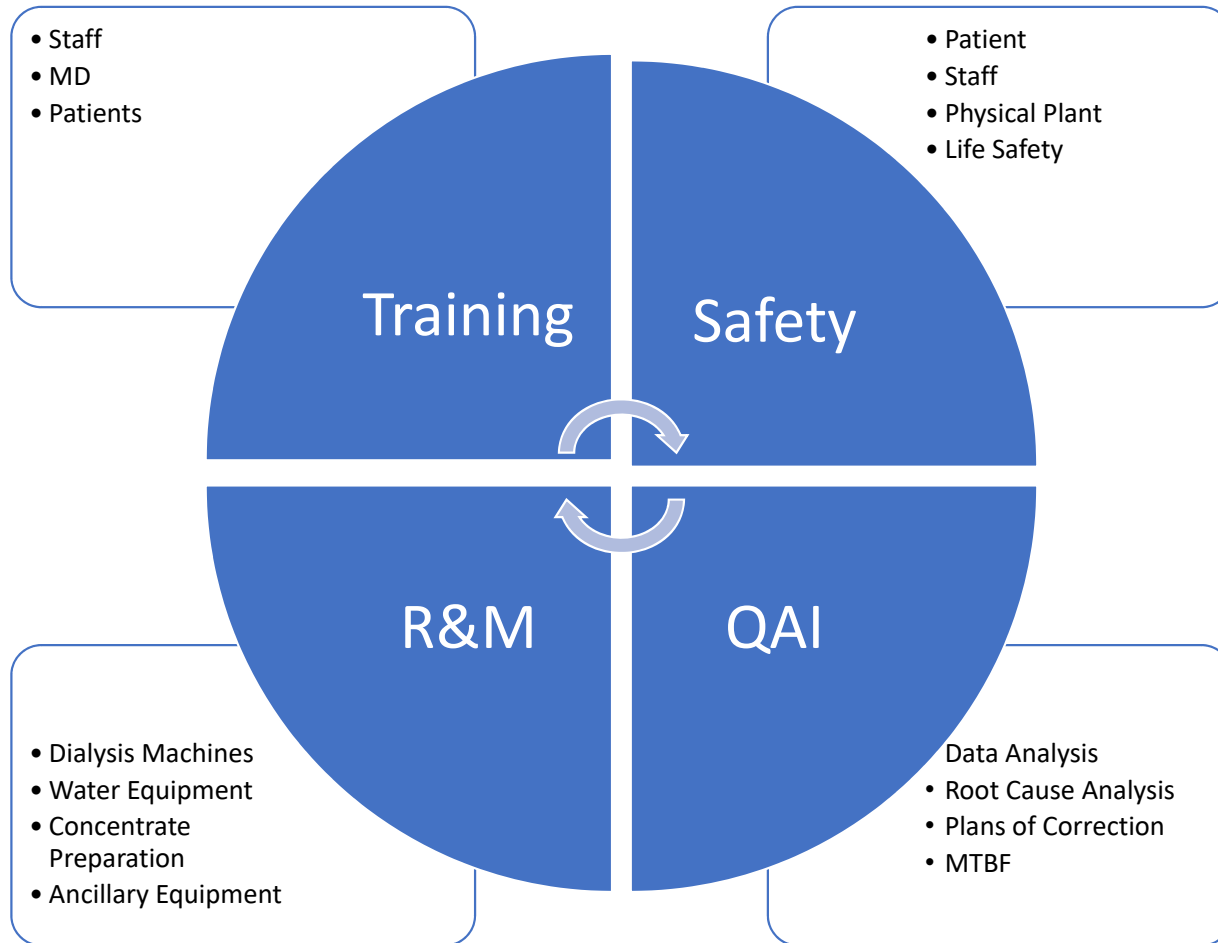
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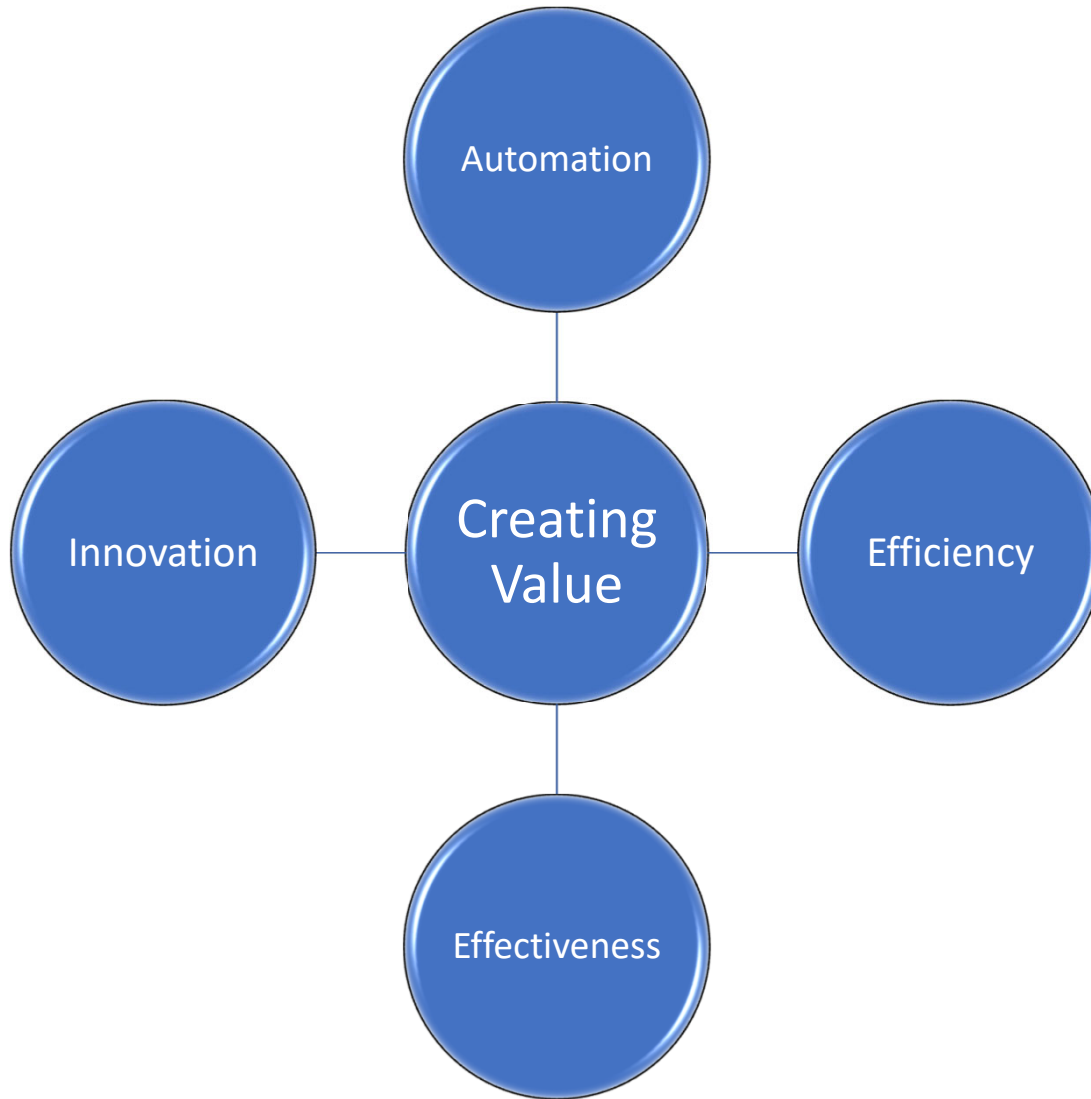
Cumulative  
Tolerance:  
Multiple  
Processes

$$.95 \times .95 \times .95 = .8864$$

$$140 \times .8864 = 124.09$$

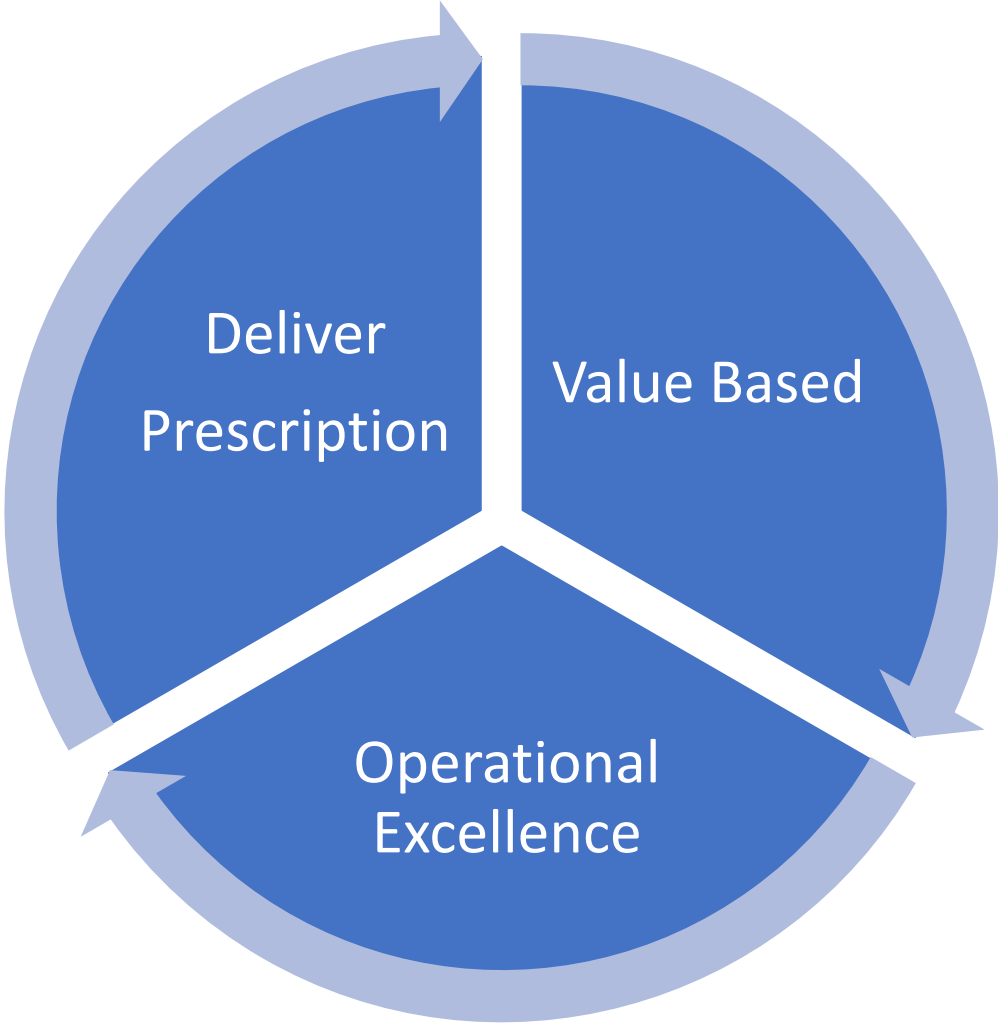


Operational  
Excellence



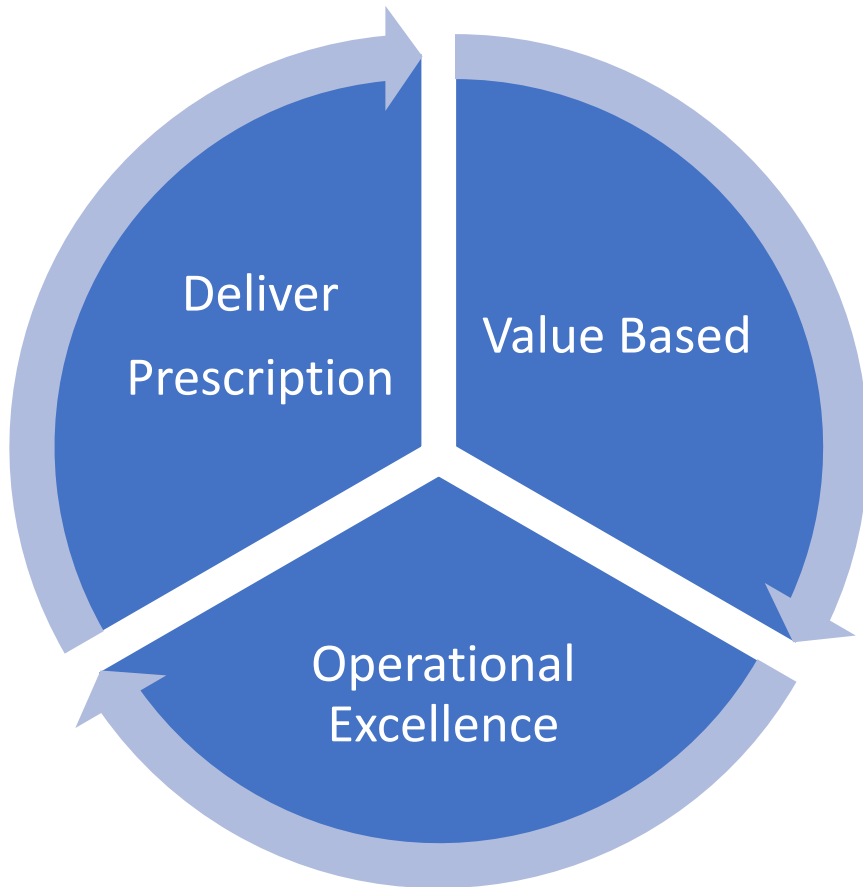
Value  
Based

Bringing it all  
Together





## Primary Goals of Equipment Maintenance



### Safety Evaluation

- Equipment is safe for patients and clinical users.

### Effectiveness Evaluation

- Maintenance strategy is enhancing equipment reliability
  - Equipment is doing what it is supposed to do
  - Equipment is available when needed
  - MTBF

PM

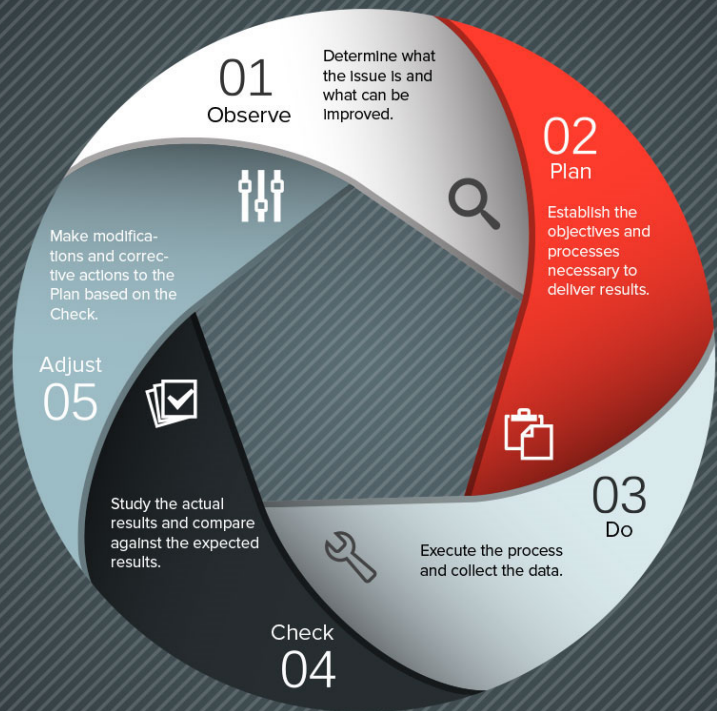
## Deming: Reduce Variation

### Deming Cycle: OPDSA

- Observe
- Plan
- Do
- ~~Check~~ Study
  - This is analytical!
- Adjust
- Repeat!
  - This is an iterative process!

QAI

### OPDCA Model



3

<https://walkwest.com/blog/kaizen-approach-seo/>

## Q: What is the Biomed role in QAI?

### See Something?

- Say or do something

QAI should never be punitive

- Not the Dialysis Police!

Attend the meetings

- You are part of the interdisciplinary team

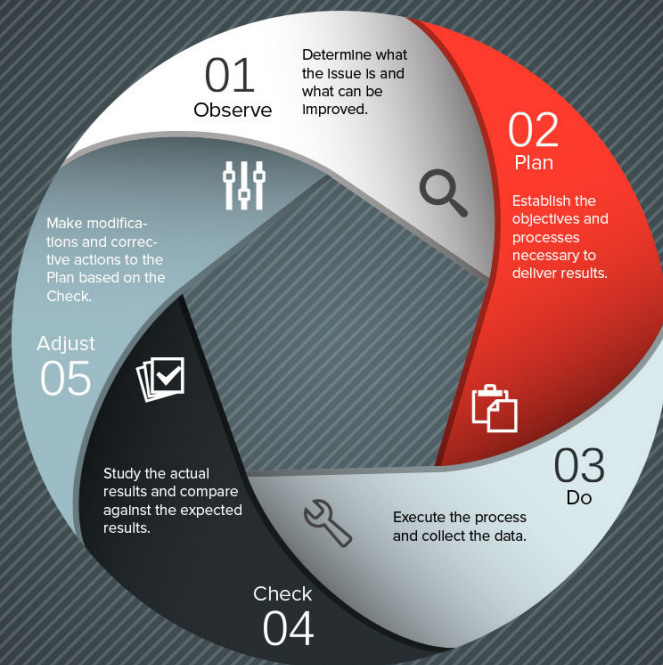
- Participate beyond your defined role

- Report on all modalities

- Report anything you feel needs attention

QAI

### OPDCA Model



3

<https://walkwest.com/blog/kaizen-approach-seo/>



# Disaster Response



# Challenges

## New Technology

- Simplifies by Improved Function
- Harder to Learn and Use

## Unintended Consequence

- Email Improves Communication
- Email Consumes Time

Sidebar:

What can be done by Technology?

Past: Human touch

Present: Rule bound

Future: What will AI bring?

Paradox  
Of  
Technology

Policy

Procedure

Training

Process

Data  
Management

QAI

More!

The  
Biomed is  
a Change  
Agent

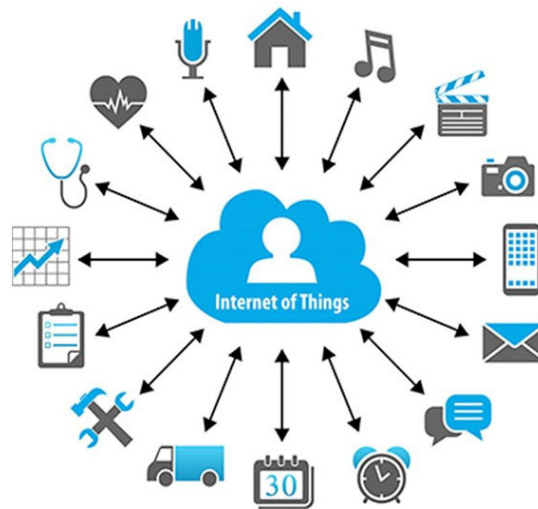
Paradox  
Of  
Change

1. The Biomed must support practice (P&P) and reduce variation.
  2. The Biomed must also support and drive change initiatives.
- Lewin's Change Model: Unfreeze, Change, Refreeze. *Barriers!*

- Equipment Sophistication (IoT)
- Technology Advances
- More Devices (Growth)
- More Devices (Variety)
- Data
- KPI
- CPPM

KSA: Rapid change to need.  
Computer Engineers 3 of 4

Job  
Complexity



<https://justcreative.com/2018/11/19/internet-of-things-explained/>





Responding  
to  
Challenges:  
What can you  
do?

Participate

Accept  
Change

Teach

Lifelong  
Learning

Become  
Expert

Read!

Mentoring

Computer  
Literacy

Formal  
Education

Call  
to  
Action