My struggles with Improvement

9 Pearls for you

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Why do we need to improve healthcare?

Adverse Events

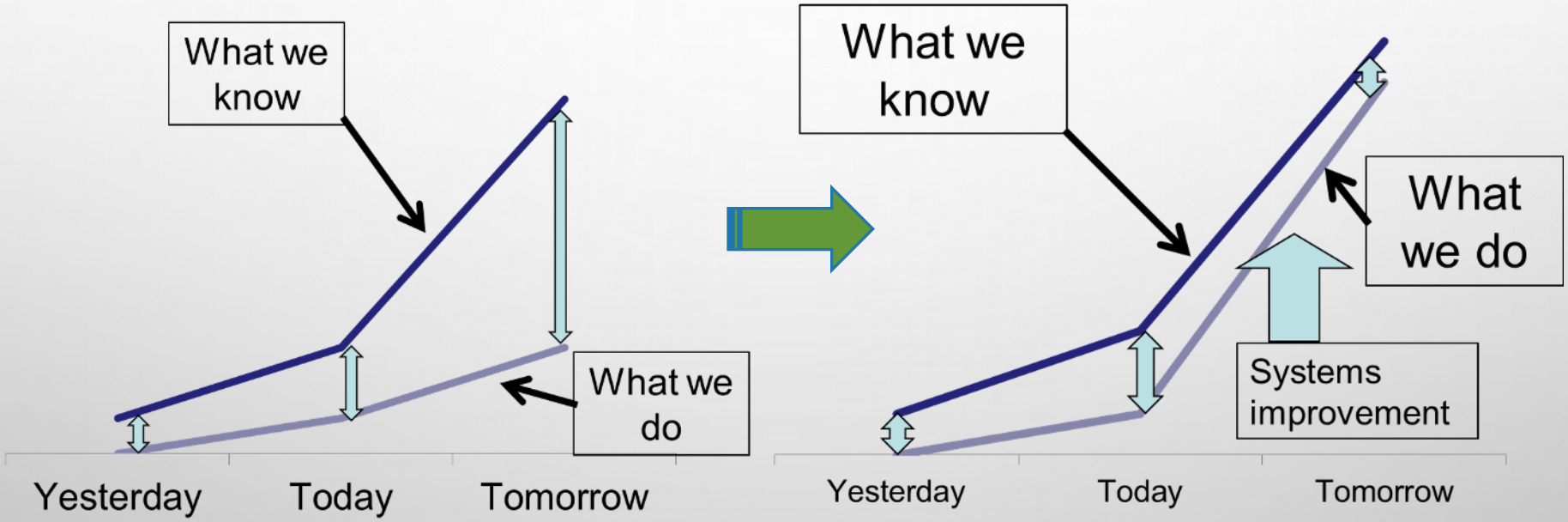
- 1.4 million Hospital Acquired Infections
- 1.3 million die from unsafe injection
- Cost - $6 – 29 billion

Developing vs. Developed Countries

- 20 times higher
- Cost Lives and Suffering

WHO – Facts

Closing the “know-do” gap



My early days in medical career

- Fortunate to have excellent role models
- Discipline
- Hard work
- Finding errors and faults
- 24x7 on alert
- Everything in control
- Confidence and pride in ‘outcomes’
- Collected data—did audits

Think : How do you tackle these ?

- Bedside Class for MD residents at 8am : only 5/17 turn up
- Nurse fills the ventilator humidifier chamber with formaline instead of distilled water
- Baby gets a 6 cm x 6 cm calcium extravasation burn
- Resident reaches OT late after a baby with fetal bradycardia has already been born

First encounters with a different world

Seeding of QI

- 2000-2002; University of Calgary, Canada
- Quality improvement nurse and Quality improvement committee
- Relaxed atmosphere
- No visible strictness or enforced discipline
- Yet, everything in good control
- Everyone confident , proud and happy with their work
- Good outcomes

Why the difference ?

Initial thoughts

- They have more resources
- Lesser number of patients
- They have ‘better’ attitudes……but.....
- ‘Systems’ work there

Where do faults really lie ?

- Organization consists of 4 elements : **people**, processes, control mechanisms, **structure**
- Processes—work flow, information flow
- Problems with Processes , control mechanisms, structure **~85%**
- Problems with people **~ 15%**

Pearl #1

Develop systems thinking

“Each system is perfectly designed to produce the results it produces”

Think about system which allow these to happen?

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How to improve the system?

Improvement requires change

You have to take a risk !

Our initial change efforts

- Required lot of effort and energy
- After more and more added , difficult to keep track
- Very difficult to sustain
- Difficult to prove that the changes led to improvements
- Not based on formal process mapping

A Common Change Strategy (which commonly failed)

- Formulated comprehensive protocols using EBM over several months
- Protocol presented as a finished, stand alone product
- Compliance depended on vigilance and hard work
- Monitoring for success or failure was the exception to the rule (with failures coming to light after patients were harmed)
- Repetitive efforts down the road

Understanding Change

- **Change** = not just *doing* something different, but *engineering* something different
    - at least one step in at least one process

- Keep it simple ; Less is More

How frequently do we make errors?

- Omission errors : 1 in 100 times
    - Forgetting to turn on a pump
- Commission errors : 3 in 1000 times
    - Misreading a label
- Risk of judgment errors under high stress :90%

Less is more

Probability of performing perfectly

No. Elements	Probability of Success, Each Element			
	0.95	0.99	0.999	0.999999
1	0.95	0.99	0.999	0.999999
25	0.28	0.78	0.98	0.998
50	0.08	0.61	0.95	0.995
100	0.006	0.37	0.90	0.99

Systematic QI vs. Informal improvement

- Systematic
- Data-guided and knowledge informed
- Experiential
- Innovative
- Employs formal explicit methodology
- Continuous
- Core responsibility of all healthcare professionals
- **Systems change**

- Individual or group
- May be knowledge informed; rarely data
- Experiential, anecdotal
- Innovative
- Informal process
- Episodic
- No explicit responsibility. Usually hierarchical
- **Individual change**

High-Reliability Change Strategies that commonly Succeed

:

- Building a “decision aide” or reminder into the system
- Make the desired action the default action
- Build redundancy into responsibilities
- Schedule steps to occur at known intervals or events
- Standardize a process so that deviation feels weird
- Take advantage of work habits or reliable patterns of behavior

Pearl #2

Change must for improvement but each change ≠ improvement

“It is insane to expect different results if we keep doing things in same way”.

What were we missing ?

- ‘Process-Mapping’
- Tests’ of change
- Data (of the experiment of change)
- Multi-disciplinary Team-work

Establishing a live data collection system for QI

- Surveillance for nosocomial sepsis (*Ashwani Sareen …2010*)
- Standard definitions
- Involving the nurses to collect
- Part of routine system
- Run-charts to track live data

Pearl #3

Map your current processes before making a change

Frontline workers know the best

The Driving Force for Change

The Multidisciplinary TEAM

A team is not the same as a committee…

Committee

- individuals bring representation
- productive capacity = single most able member

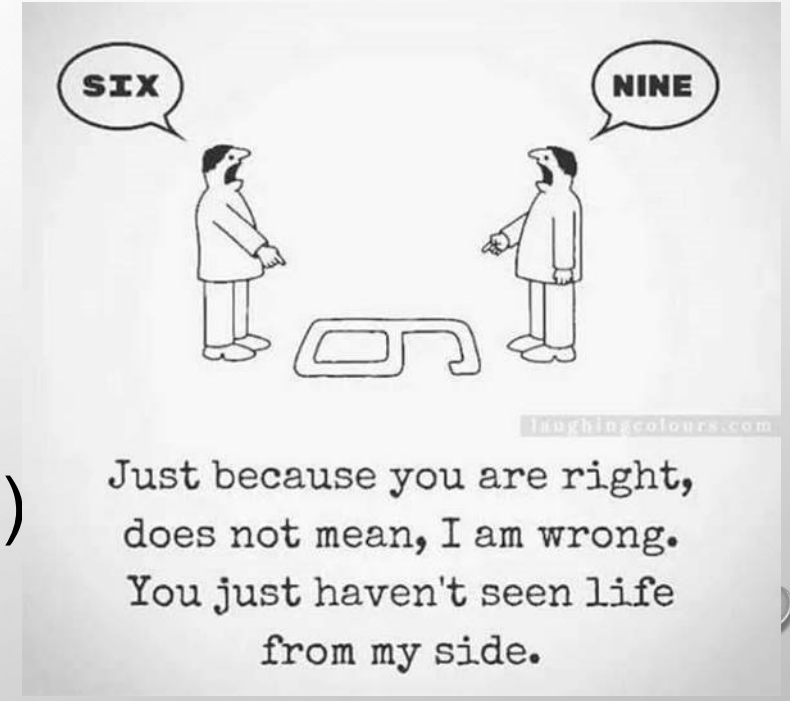
Team

- individuals bring fundamental knowledge
- productive capacity = synergistic (more than the sum of all individual team members together)

The Driving Force for Change: The Multidisciplinary Team

Features of a good team…

- Safe (no *ad hominem* attacks)
- Inclusive (values all potential contributors including diverse views)
- Open (considers <u>all</u> ideas fairly)
- Consensus seeking



Struggling on your own vs. Collaborative

- Access health int. *(Dr. Abha Mehndiratta …2012)*
- Amrita Institute of Medical Sciences
- GMCH, Chandigarh
- Fernandez hospital
- Nice hospital
- PGIMER, Chandigarh
- **Rapid acceleration of learning**

Pearl # 4

Must have multi-disciplinary teams for success

Collaborations make it easier and faster

What is Quality?

- **Who defines it ?**
  - Manufacturer or consumer ?
  - Doctor or patient/family/public?
  - Self or spouse/children

Pearl # 5

Consumer is the KING ♚

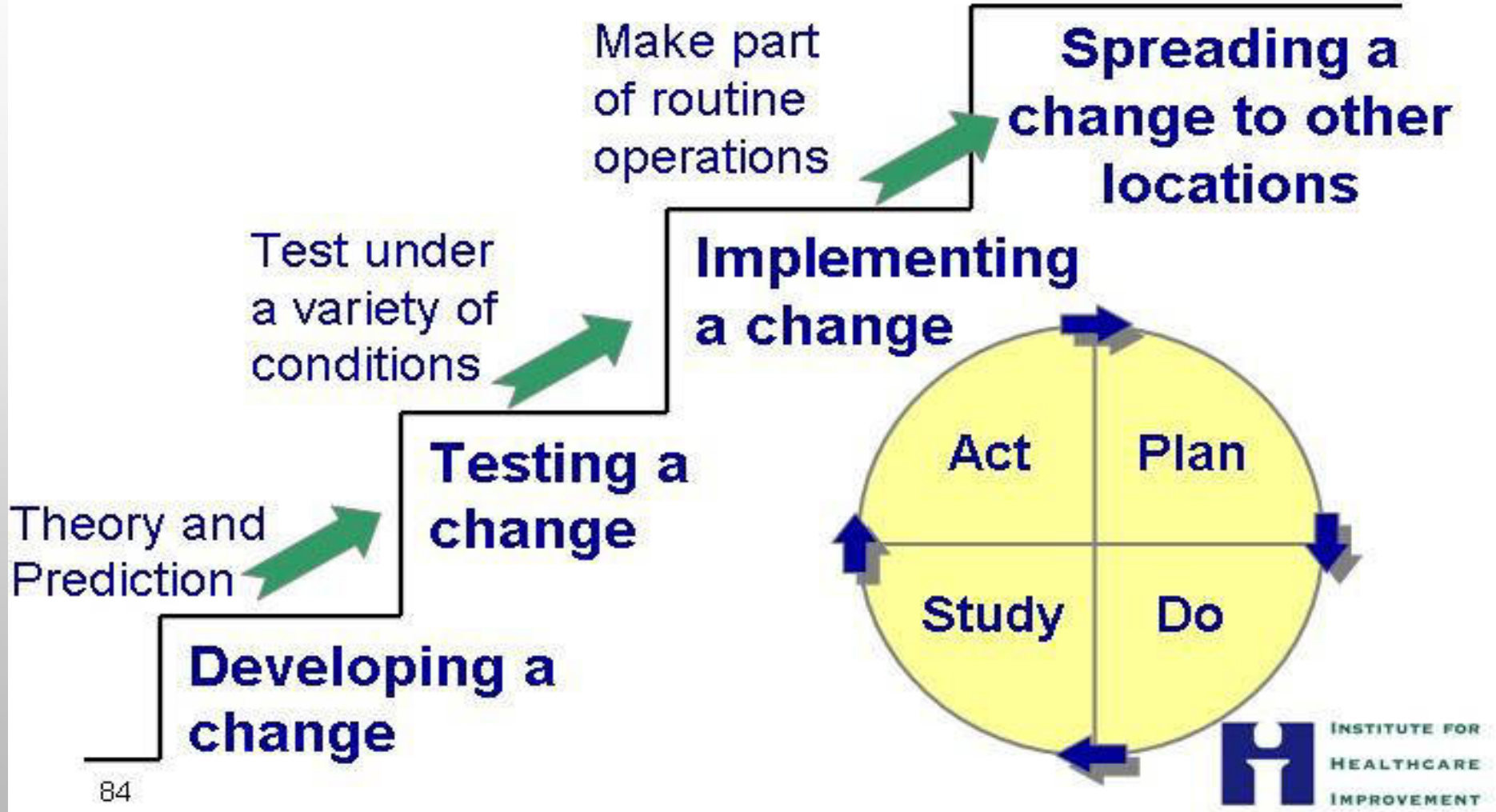
Wife is the QUEEN ♕

Multiple PDSA cycles

Dr. Sudhanshu Grover….2013

- Hand hygiene
- Aseptic Non Touch Technique
- Breast milk usage
- House-keeping routines

The Sequence for Improvement



PGIMER Hand hygiene awards

We had many failures as well..

Not all changes are improvements

Deming said of all the changes he had observed, “only about 5% were improvements… the rest, at best were illusions of progress!”

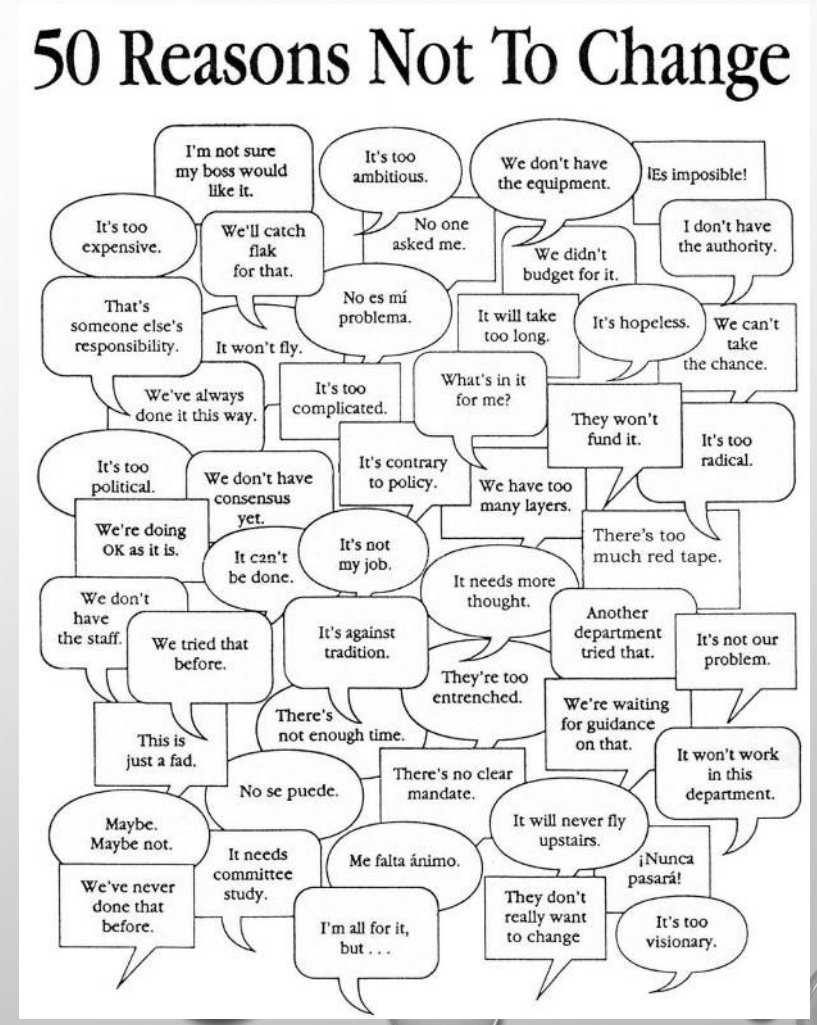
Pearl # 6

Must test each change on a small scale (PDSA), before implementation

Another Key Ingredient for QI :
Leadership

"A good leader inspires people to have confidence in the leader; a great leader inspires people to have confidence in themselves."

Why people do not change ?



Why people do not change ?

Medical study

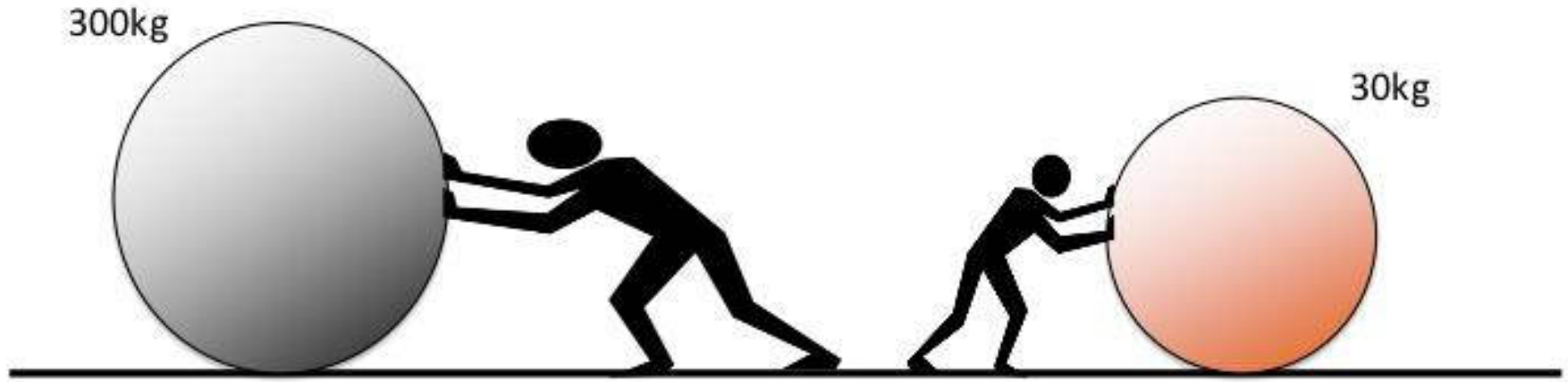
- Cardiologist told heart patients with previous MI, about their very high risk of dying if they did not make 2 changes to their lives---do exercise, stop smoking.
- Only 1 in 7 were able to make the change
- Other 6 of 7 also wanted to live ! But couldn't make the change
- How can we expect them to change for a process that doesn't affect their lives directly ?
- **Problem is not of will or attitude**……..it is the gap between what we want and what we are able to do

Newton's First Law of Motion: Inertia

An **object** will **not change its motion** unless **acted on** by an **unbalanced force**.

- *if it is at rest, it will stay at rest*
- *if it is in motion, it will remain at the same velocity*

Objects with a **greater mass** have **more inertia**.
It takes **more force** to change their motion.



Improvement

- Healthcare improvement = Self improvement

Healthcare improvement vs Self improvement

- **Healthcare improvement**
- Focus (Aim)
- Leadership
- Discipline
- Control of ego
- Respect of self and others
- Collaboration

- **Self improvement**
- Focus (Aim)
- Leadership
- Discipline
- Control of ego
- Respect of self and others
- Collaboration

What is the purpose of our life?

- To get rid of our shortcomings---improvement in specific areas
- Multiple birth-life-death cycles (PDSA cycles)
- Continuous quality improvement (CQI)---we keep moving the goalposts
- Change is life
- Real improvement starts when we recognize our aim (SMART aim)

CQI and PDSA have been there ever since human beings evolved

Pearl # 7

Change is slow
Have patience

Darwin's theory of evolution

Immunity to change

Self-protective; life saving

Pearl #8

Problem is not in people's attitude; people are unable to do what they want to do

Wish-Do Gap

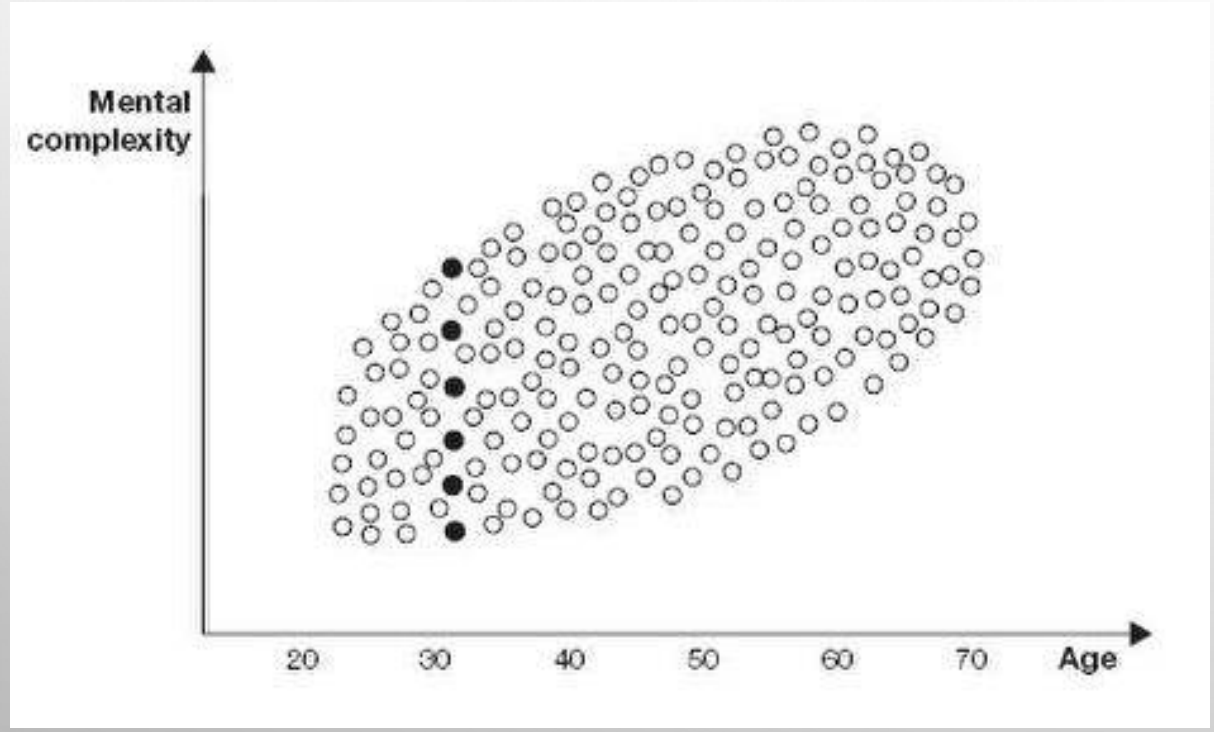
Human Factors

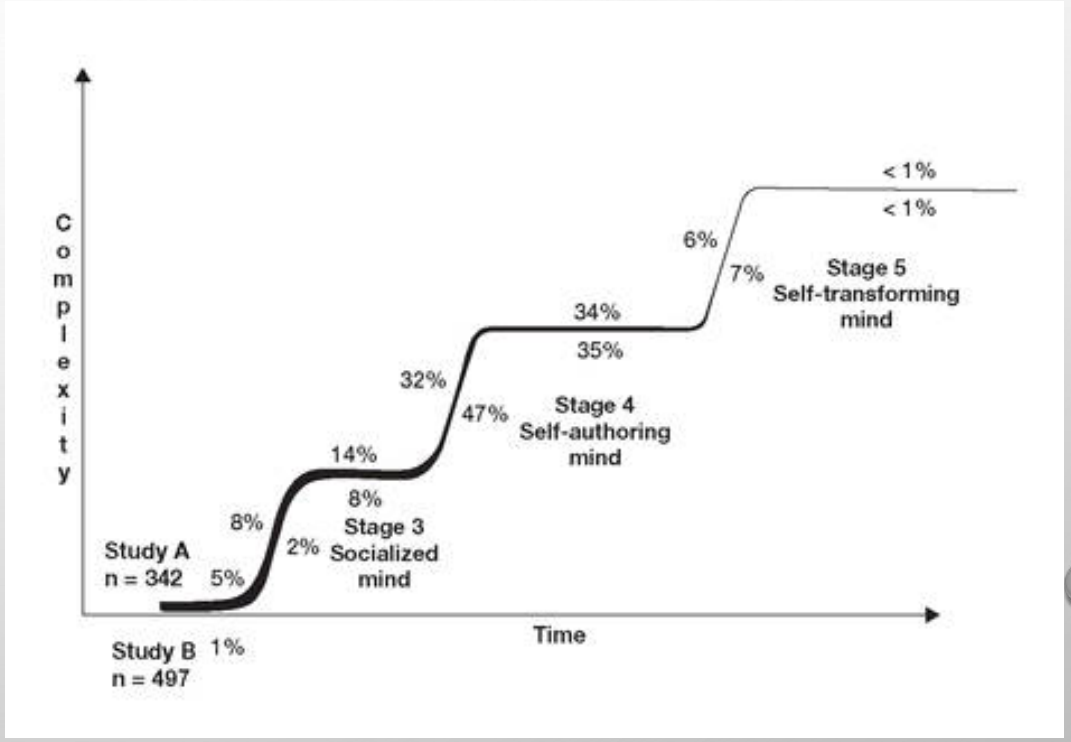
- Discovery and application of information about human behavior, abilities, limitations, and other characteristics to the design of tools, machines, systems, tasks, jobs, and environments for productive, safe, comfortable, and effective human use
- Human Factors IS NOT ...

  just applying checklists and guidelines

  just using oneself as the model for designing things

Development of mind complexity





Human Factors Engineering

- Human Factors Engineering uses a *systems analysis* approach.
- Humans are considered a critical *system component.* .
- HFEs determine how the *system* can be designed or modified to meet goals.
- Humans have certain capabilities and limitations, and the system must be designed with an understanding of the human component subsystem requirements.

Human factors…examples

- DM or MD candidates : sponsored vs. general
  - All are top 1% students
  - Different age, college environment, family environment/circumstances, aptitude-----but we expect same output !
  - Net result : candidate in stress, faculty in stress, performance decreases
- MD thesis

Pearl # 9

You are good, honest, hard working.
But this does not mean others are bad, dishonest and insincere !

Actor-Observer Bias; Self-serving bias

Nine pearls for you to take home

- Systems thinking
- Change must but each change is not improvement
- Map Processes
- TEAM work
- Patient decides quality
- Test each change on a small scale (PDSA)
- Problem is not in people's attitude; wish-do gap
- Change is slow Have patience
- Like you, others are good, honest, hard working

Quality improvement = Self improvement

SELF- REALIZATION

Thank you so much…