Support Systems EMR Design

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Scott and White Visit to SETMA

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"System thinking needed because humankind has the capacity to:

- Create more information than anyone can absorb

- Foster greater interdependency than anyone can manage

- Accelerate change faster than anyone's ability to keep pace."

Too much information

- In 2004, the *Journal of the Medical Library Association* published an article entitled, "How Much Effort is needed to keep up with the literature relevant to primary care?" Here are the authors' conclusions:

Too much information continued

- There are 341 currently active journals which are relevant to primary care.

- These journals publish approximately 7,287 articles monthly.

- It would take physicians trained in epidemiology an estimated 627.5 hours per month to read and evaluate these articles. That translates into 21 hours a day, seven days a week, every month.

In healthcare, the solution to helplessness is to "see" the:

- Interrelatedness of one disease aggravating or precipitating another

- dynamic interaction between the treatments of simultaneous pathological processes.

Systems thinking and Health

Systems-thinking and the data display designed on those principles allow the provider to "see" how the treatment of one disease augments or complicates the treatment of another.
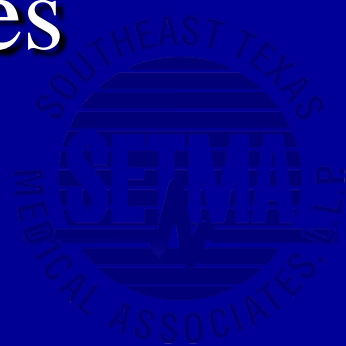
Creating Discomfort in Provider

Creation of discomfort in the provider via self-auditing at the point of care allowing the provider to measure his/her performance against an accepted standard.

"Treatment inertia"

"Lack of treatment intensification in a patient not at evidence-based goals for care."

"Dynamic Complexity"

This occurs when "cause and effect are subtle, and where the effects over time of interventions are not obvious."

"The real leverage in most management situations lies in understanding "dynamic complexity."

Data Display

Data display can obscure effective management if it simply presents more detail while ignoring, or further obscuring, the dynamic interaction of one part of a biological system with another.

Seeing Circles of Causality

"Reality is made up of circles, but we see straight lines…Western languages…are Biased toward a linear view. If we want to see system-wide interrelationships, we need a language of interrelationships, a language of circles."

(The Fifth Disciple, Dr. Peter Senge)

If excellent care requires healthcare organizations to:

- **B**e "learning organizations"
- Avoid "learning disabilities"
- Think in a circular rather than a linear fashion
- Look at dynamic complexity rather than detail complexity

If health science has the capacity:

- To create far more information than anyone can absorb,
- To foster far greater interdependency than anyone can manage
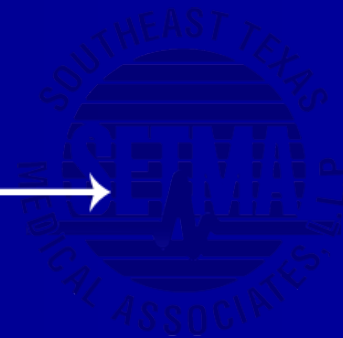- To accelerate change far faster than anyone's ability to keep pace.
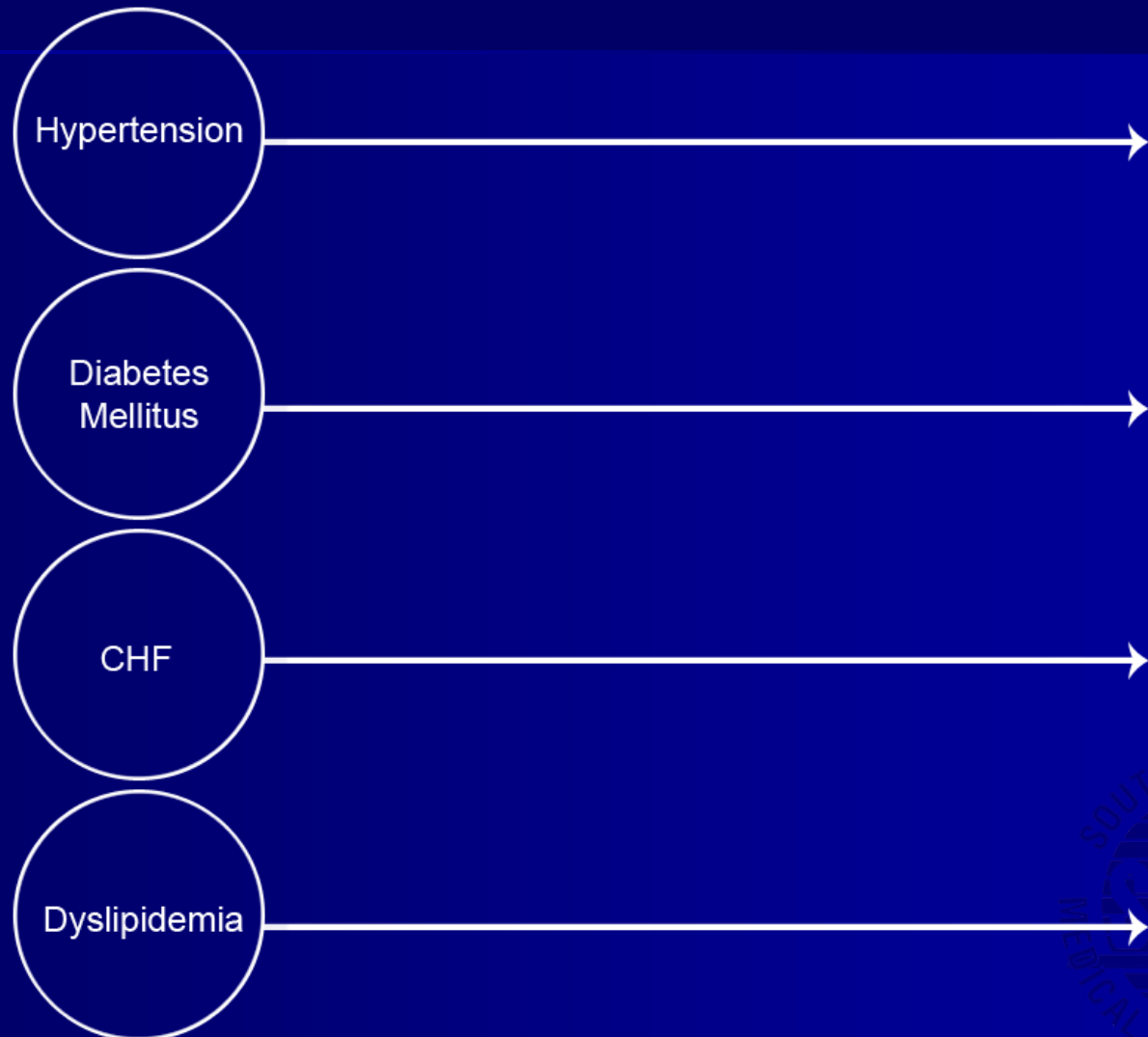
EMR Power

How can electronic patient records and/or electronic patient management help solve these problems and make it possible for healthcare providers to remain current and fulfill their responsibility of caring for patients with the best treatments available?
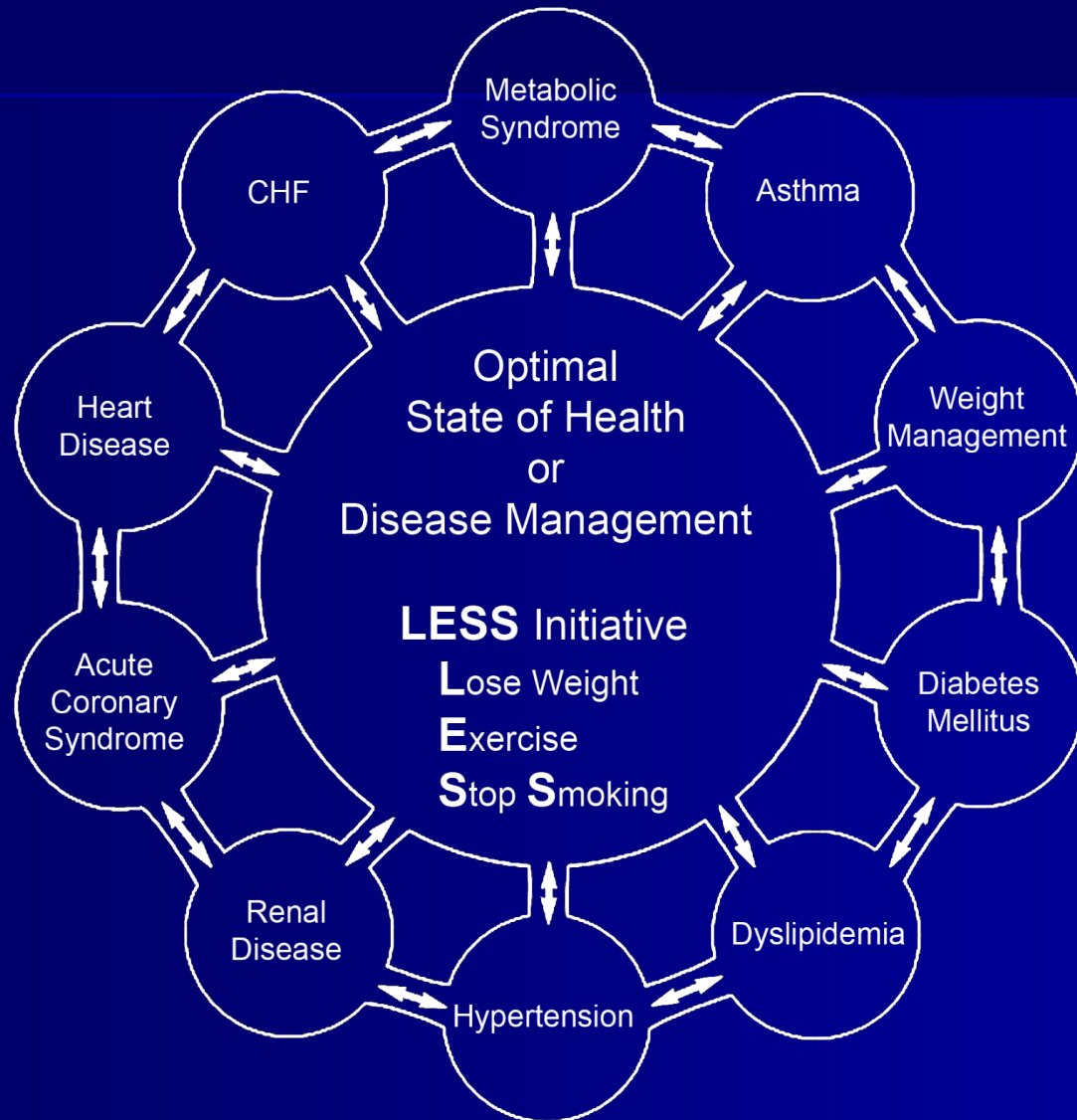
Linear Thinking

Circular Causality

Data flow to and from the patient's core information, and to and from interactive disease management capabilities:

- Acute condition data

- Longitudinal data

- Standards of care which reflect a positive state of health

- Automatically-populated-treatment reflecting best practices based on random controlled trials

- Auditing tools which reflect provider excellence

- Automatically-populated-patient follow-up instructions

- Automatically-created-patient education