

Misadventures in Health Care

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Misadventures in Health Care

- Considering error is relatively new
Medication errors 1959 (Safren & Chapanis)
- Care ongoing, urgency to “solve” the problem.
- Source of problem.

Health Care

- Trauma
- Acute care
- Outpatient care
- Ongoing home care
- Episodic home care
- Chronic care

Source of misadventure, incidents, accidents

- Transportation or industry attributed to the organization, system.
- Health care almost always attributed to the care provider.

Care providers

- Family and friends
- Pharmacist
- Professional care provider
 - Nurses
 - Physicians
 - Allied health professionals
- Skilled and home care aides

Source of Error – Professional Care Provider

- Media reporting –
 - Incompatible organs transplanted
 - Wrong medication
- Self attribution
 - Worship of technology
 - Person accommodate to device

Institute of Medicine Report

To err is human

Major recommendation – to
establish a national error
reporting data base.

Millions of \$\$ to elicit reporting of
who did what.

You get what you look for

- Presumptions determine findings
- To err is human
- Reporting systems collect data on human errors

The vial, the fly, & the dog

- Drug vial – identical vials and labels except for drug name
- Fly – carrion odor place to lay eggs
- Australian Shepherd – heard sheep

Train: person to see in dim light
fly to lay eggs only on carrion
dog to herd only sheep

Lesson of the vial, fly, & dog

- Error is not unique to humans
- Living organisms respond to factors in the conditions of activity
- Factors can make the conditions complex
- Complexity not in harmony with the organism tends to induce error.

Humans have hard-wired responses to factors

- Perceptual capabilities
- Stress – fight or flight
- Fatigue – compromised cognitive functioning
- Information – 7 (+/minus 2) units
- Similarity – substitution

Conditions and the provider

- The most technologically sophisticated medical devices are in the ICU, ER, and OR.
- The most stressful, fatigue inducing, information overloaded, with similar alarms, drug, vials, etc conditions are the ICU, ER, OR.

Health Care: Unique Problems

- No aspect is static.
- Universe of participants, training, settings.
- Non-care providers know vaguely at best what transpires when care is given.
- Condition of entities changes and is changed by care being given.

Misadventures are defined in terms of

What happened

Adverse outcome:

Wrong blood administered

Wrong leg amputated

Defining Error

- Error as outcome – serious injury, death, prolonged treatment
- Reported to Data Base:
 - Who – Ima Surgeon
 - What – Lacerated Mrs. Patient's liver

Focus of Health Care Research

- Reflects presumption that person is the cause of the error.
- No actual experience of health care provider.
- Provider is reasonable explanation, so stop search at person – *STOP RULE* (Rasmussen, 1990).

Error as a snapshot

- Consider act that precipitated adverse outcome
- Act is not isolated

Precursor conditions

Incidents waiting to happen

Series of events

- Time must be considered

Error Reporting Data Base

Lonely datum.

If clustered, aggregated, then
eggs in a carton.

Decision of Accountability:

Accountable for what – **behavior**.

Error as Behavior

Bridge to research & theory of discipline that studies behavior, psychology.

- Behavior is interaction of the person and the environment (Lewin, 1936/1966).
- An action as everything else must have a context.
- Decisions re accountability for error must consider factors in context

Error Research Findings:

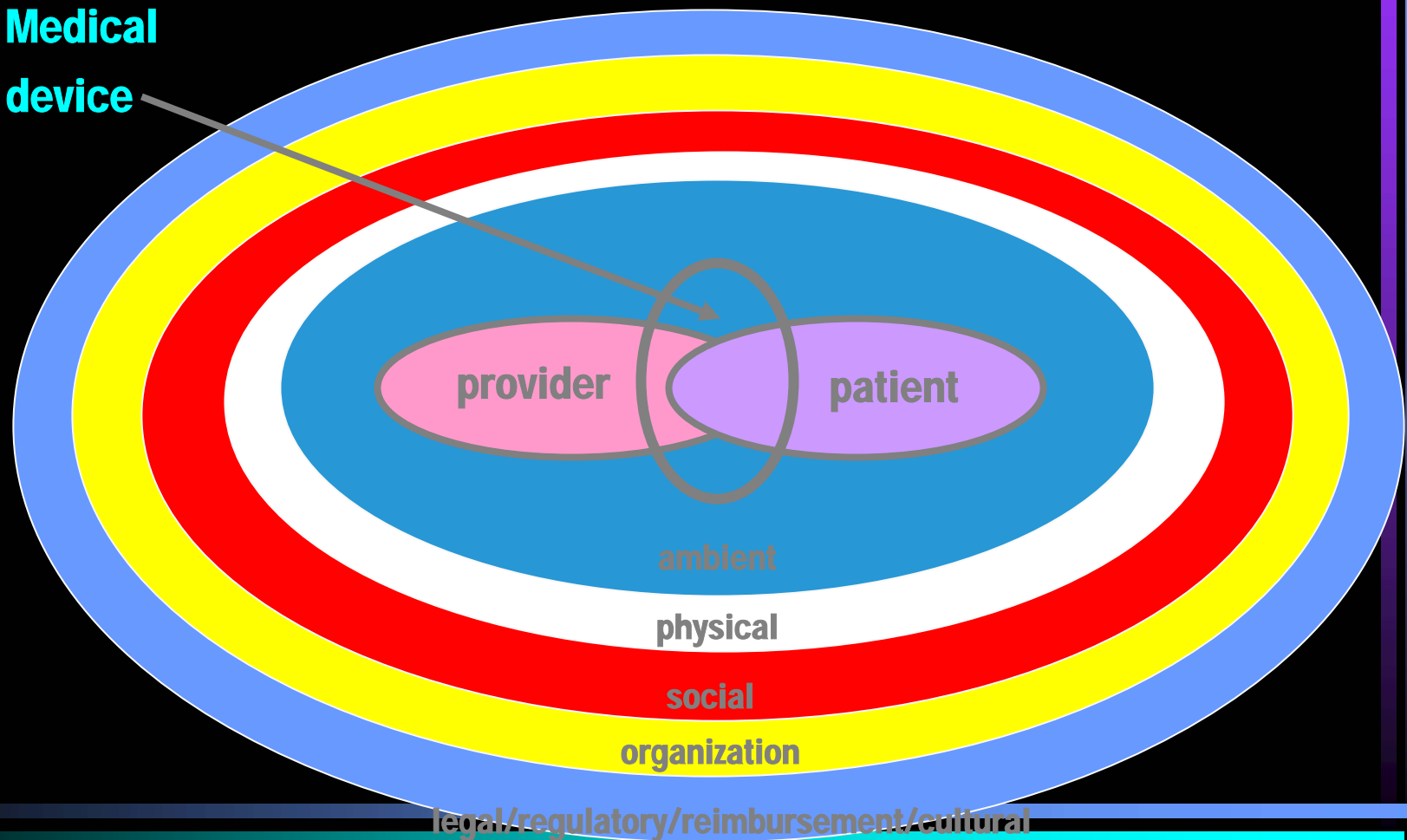
- Taxonomy of various industries (Rasmussen, 1982).
- Various industries (Senders & Moray, 1991).
- Nuclear Power (Rasmussen in Bogner (Ed.), 1994).
- Onion graphic representations (Moray in Bogner (Ed.), 1994).

Lessons Learned: Error Provoked by Contextual Factors

- Personal characteristics
- Equipment design
- Task characteristics
- Physical environment
- Climate
- Team and group behavior
- Org. and management behavior
- Societal and cultural pressures

Artichoke Model of Systems of Context of Performance

Medical
device

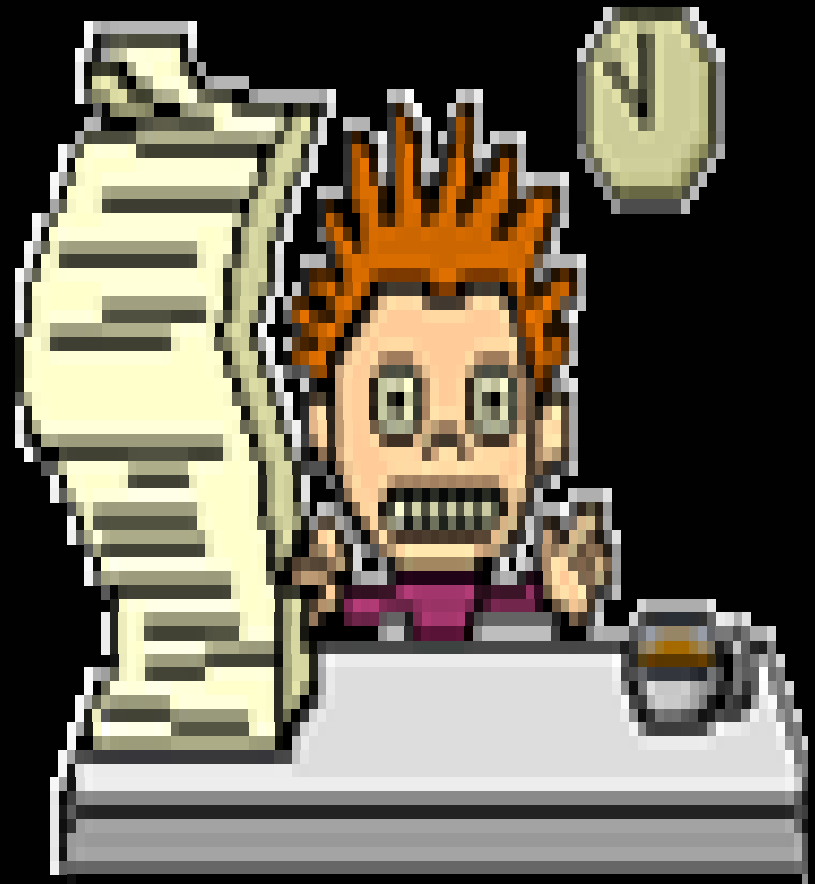


Systems In Action

Factors in the
context of
systems

Impact the
person

Can provoke
error



Systems Affect the Provider

Factors
experienced by
the provider at
the time of an
action.



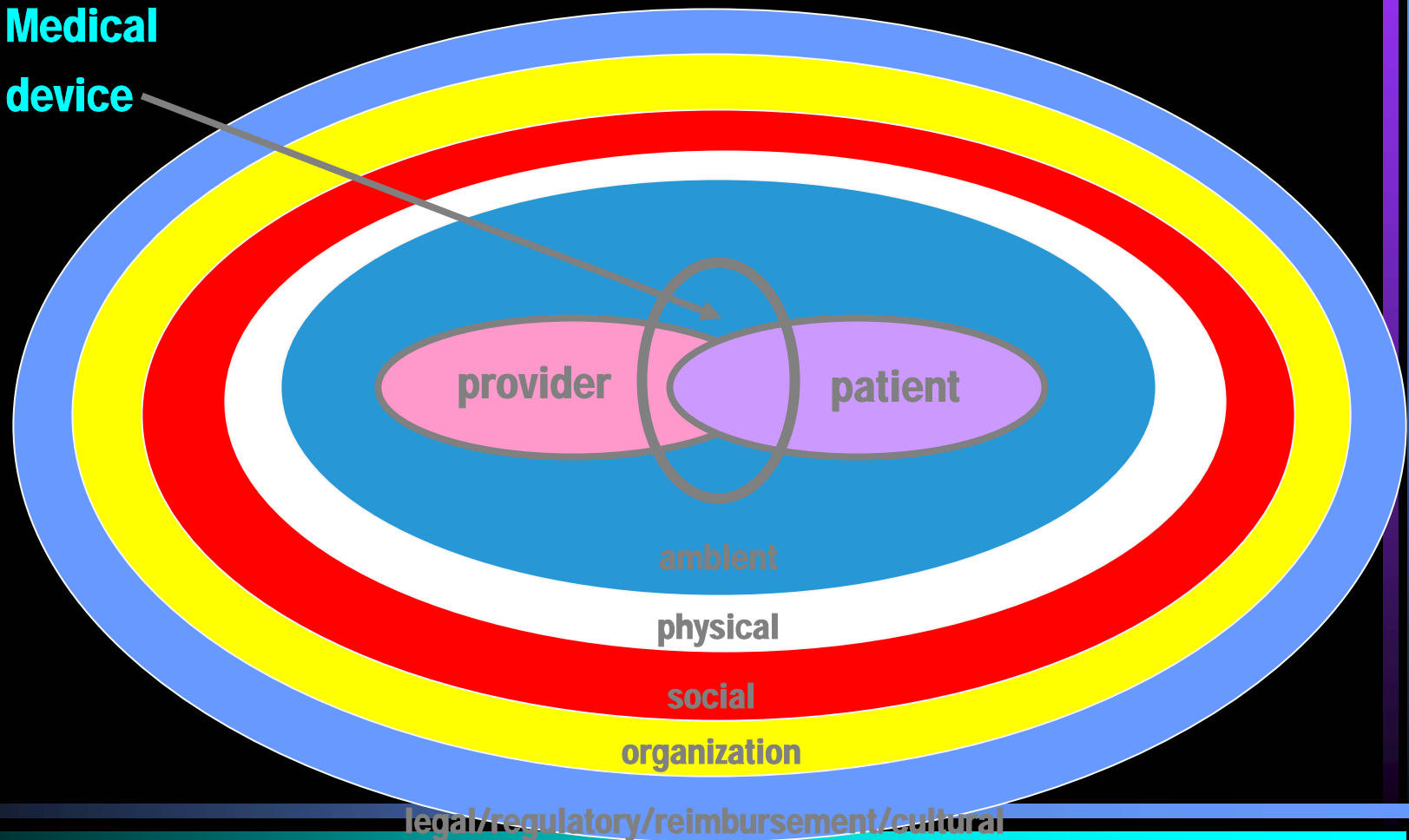
Reverse Ripple

A change in factors in a system:

- affects all systems within its circumference which
- affects the care provider.

Artichoke Model of Systems of Context of Performance

Medical
device



Incident Report (actual, almost, potential)

Incident:

Time:

Location:

System or Context

Factors

Legal-regulatory-reimbursement-cultural

Organization

Social

Physical

Ambient

Care provider

Means of providing care

Patient

Laparoscopic Surgery



ERROR: Ima Surgeon lacerated Mrs. Patient's liver (Matern, 2003)

- Lost balance on stool.
- Foot pedal for device fell off stool.
- Stool because too short to use instruments.
- Pt. Weighs 400 pounds.
- Operating table didn't go down enough.
- Regulatory agency didn't regulate.

It is one thing to show people
they are in an error, and
another to put them in
possession of truth.

John Locke (1632-1704) *An Essay
Concerning Human Understanding*,
Bk. IV, Ch. 7

Peel the Artichoke to reduce error and enhance safety

“Truth” by considering each of the 8 systems of context for error inducing factors.

