Chaotic or Failure Free Performance? Levels of Reliability Applied to an EHDI System

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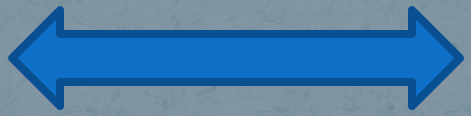
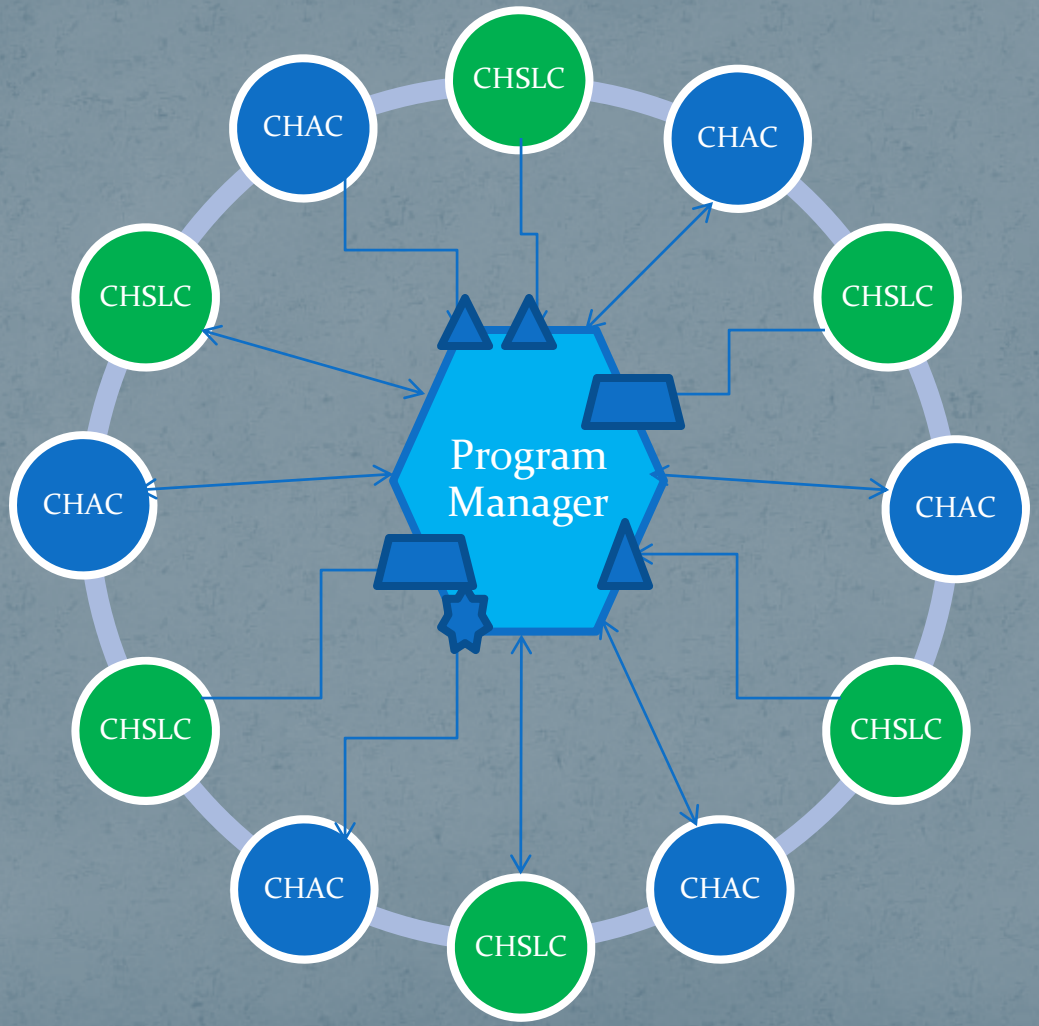
A Continuum

Chaos



Reliability

NC EHDI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Program Manager
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NC EHDI – How I keep all of them!

Consultant	FTE	# of counties covered	# of hospitals covered	Hired by. . .	Federal Financial Participation	Contract with local Health Dept.	I.M.O.A.	Weekly Timesheet	Workplan Review
SLP BT	.5	11	11	Other	✓	✓			✓
SLP SM	1	14	16	Other	✓		✓		✓
SLP MM	1	22	19	Other	✓		✓		✓
SLP LB	.5	14	8	Other	✓	✓			✓
SLP JG	1	18	18	DPH	✓			✓	✓
SLP TC	1	21	15	DPH	✓			✓	✓
CHAC CD	1	26	22	DPH	✓			✓	✓
CHAC MF	.5	9	8	Other					✓
CHAC LG	1	12	16	DPH	✓			✓	✓
CHAC DM	1	13	11	DPH	✓			✓	✓
CHAC SU	1	12	15	Other	✓	✓			✓
CHAC SC	1	28	15	DPH	✓			✓	✓

NC EHDI History

- Program started in 2000
- In the beginning of 2007, I was the 5th Program Manager
- None of the staff came into the program with experience in EHDI
- All the staff were doing what they felt was best, but with little direction

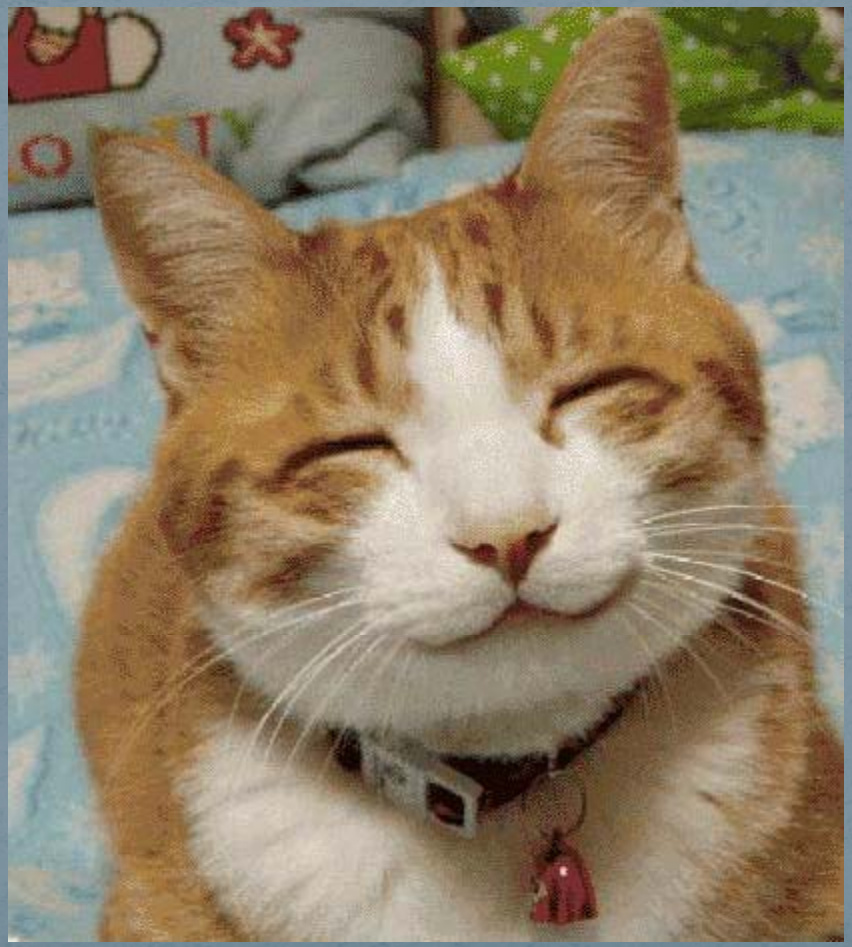
Just testing the water. . .

“Don’t make waves, just go along.”

“Just doing my job!”

“Just doing my job”

“Everything’s Wonderful!”

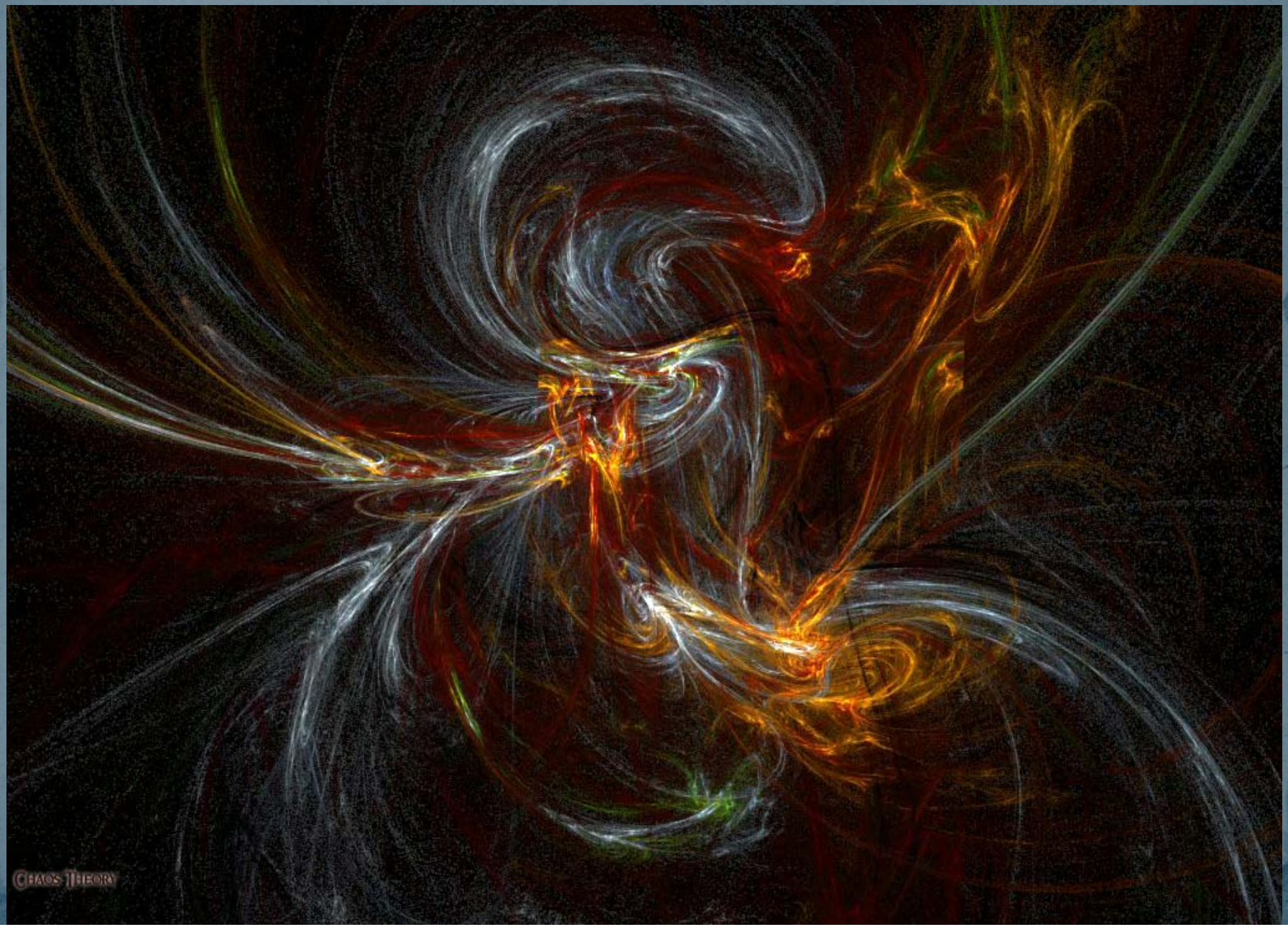


My Job

Manage an effective & efficient EHDI Program

Herding “my cats”

Chaos



NICHQ

- Presentation by Richard Scoville
- “Delivering Reliable Care”
- Concepts adapted from industry, safety, and highly reliable systems

Simplified Definition of "Reliable"

"Failure free performance over time"

Over the course of a clinical encounter or patient relationship, did we do all of the things that we were supposed to do for this patient, and at the proper time?

Over time, for the population of patients for whom we have responsibility, is the system delivering appropriate care to every patient?

Comparing Levels of Reliability

Driving to work =

5,000 trips to work (approximately 20 years)

2 delays/absent

0.0004%

Airline flights resulting in crashes =

17,999,975 flights/ year

26 crashes/year

0.0000014%

Comparing Levels of Reliability

Mountaineering

Road safety

Commercial aviation

Chartered flight s

Routine Acute &
Preventive Health Care

European railways

Nuclear Power Plants

Very risky Ultrasafe

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Levels of Process Reliability

Level	Characteristics	% of time the system works

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2	Almost everyone understands the process & attempts to follow it	95 -99%

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0	Chaos No standardized system of care	< 80%
1	A process but not everyone understands or follows it	80 – 95%
2	Almost all understand process & attempt to follow it	95 -99%
3	System change has occurred – things are standardized, regulated	> 99%

One Key Strategy & Three Change Concepts

- ***Strategy***

  Analyze failures to redesign the system

- **Change Concepts:**

  Prevent failures

  Standardize the system to prevent failures

  Detect errors before they become process failures

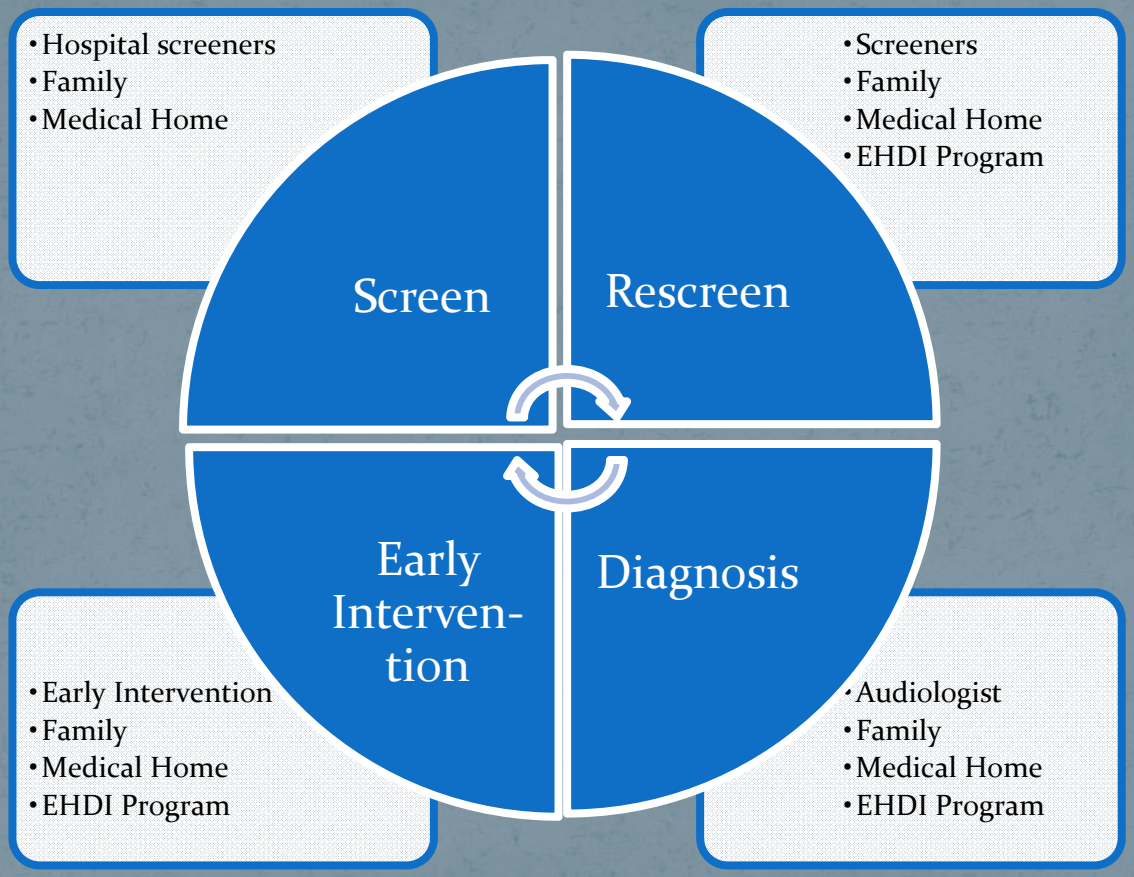
  Inspection

  Make incipient failures visible

  Mitigate

  Eliminate or reduce the harm from failures that do occur

The EHDI Process



Why are EHDI Systems unreliable?

- Lack of standardization
- Complicated
- Many hand-offs (steps)

Effect of the Number of Steps in the Process on the Overall Reliability

- Number of steps

1	90%	90%
2	90% x 90%	81%
3	90% x 90% x 90%	73%
4	90% x 90% x 90% x 90%	65%

Overall reliability of an EHDI process = 65%

NC Measures of Reliability

- Percentage of children lost to follow-up
- Number of physicians receiving education about EHDI
  - Packets of information when a child is identified
  - Grand rounds
- Systems changes
  - Better definition of roles for consultants
  - Number of hospitals rescreening
  - Hospital education / Initial refer rates
  - More support to families throughout the system
  - Referral to Intervention
  - Improvements in data management system

"Coming together is a beginning
Keeping together is progress
Working together is success."

~Henry Ford

What we really want!