



Carnegie Foundation
for the Advancement of Teaching

High Reliability Organizations

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DEFINING SYSTEMS RELIABILITY

Failure free operation over time

Rank order the pictures from least reliable = 8 to most reliable = 1



?



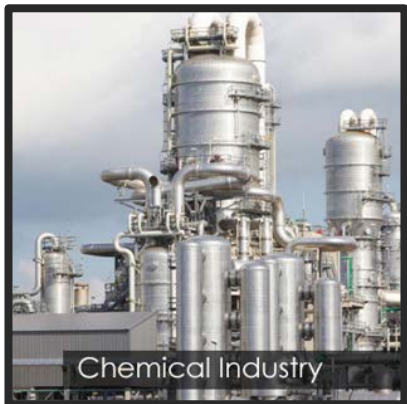
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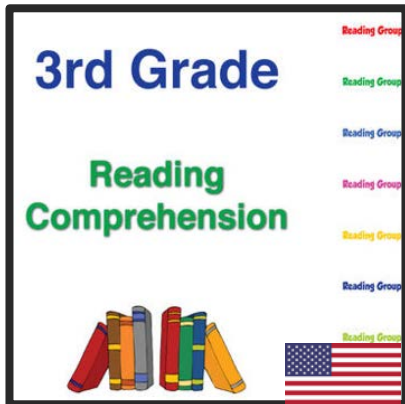
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5



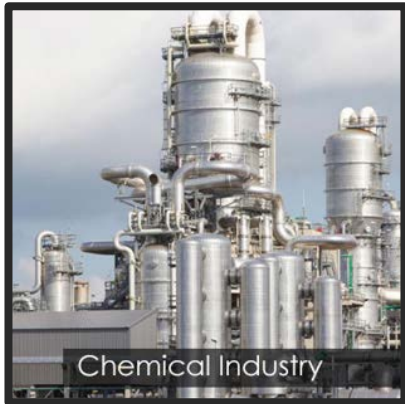
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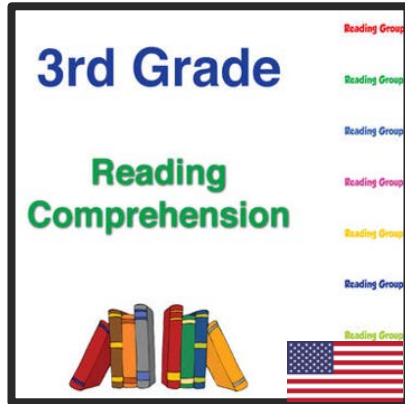
6



4



3



8



1



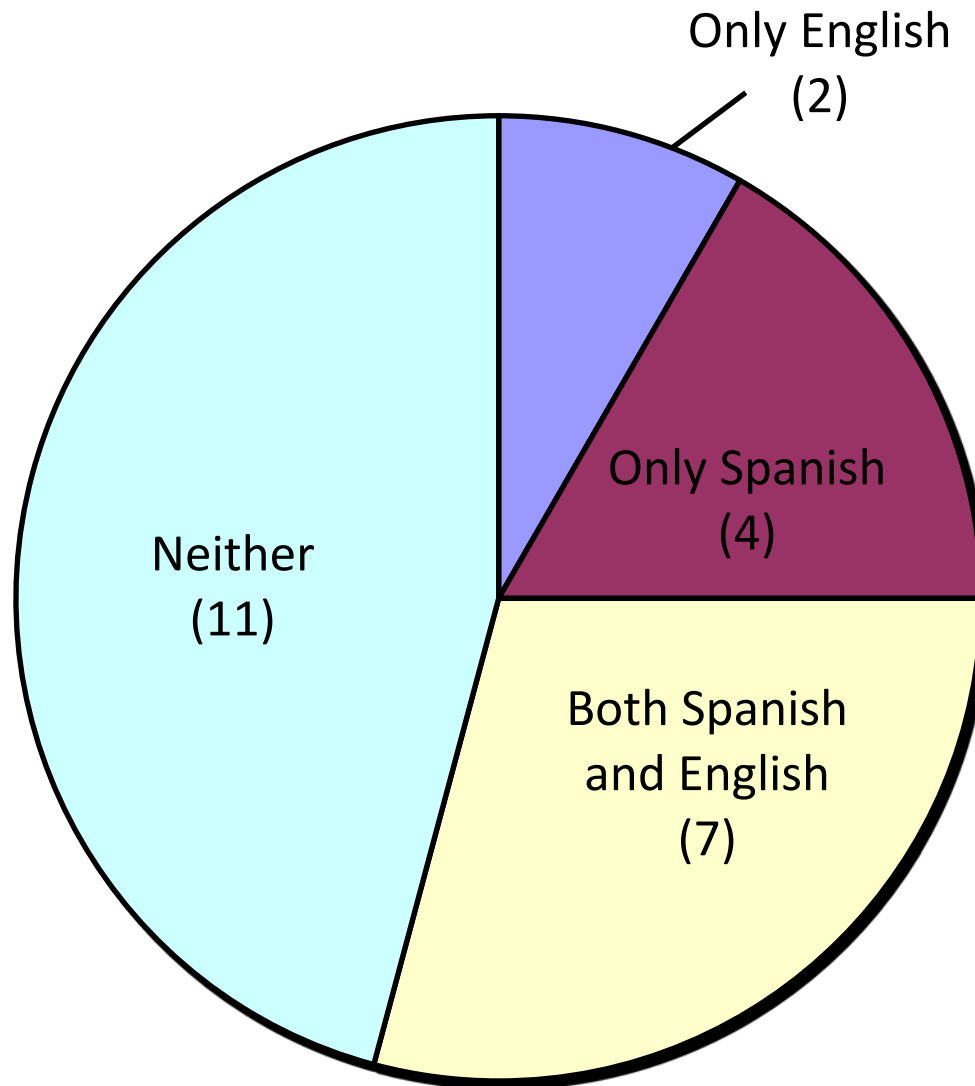
7

How did we get interested in
reliability?



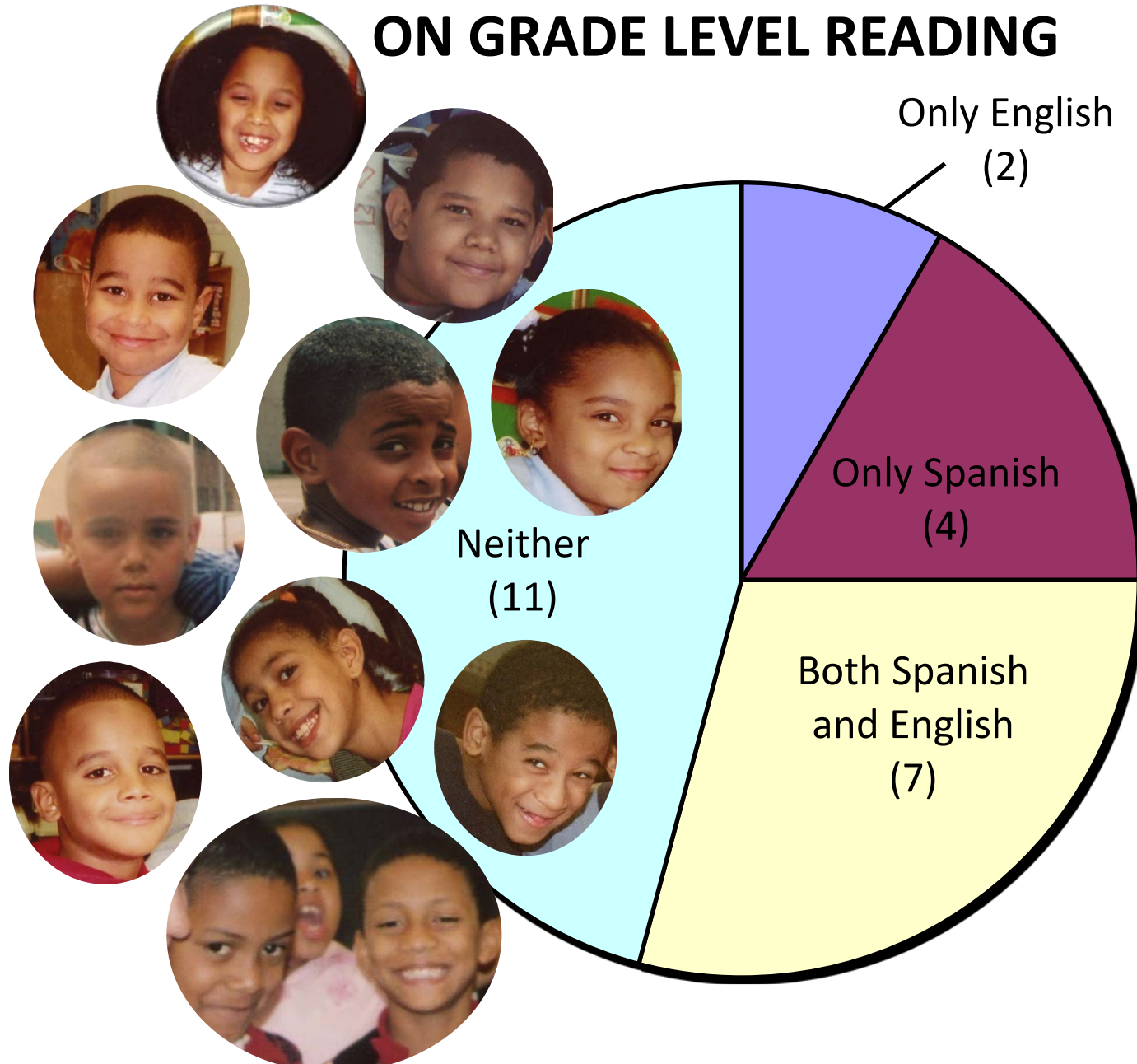
Ms. Grunow
1st grade, Transitional Bilingual
1999-2000

ON GRADE LEVEL READING



2005-2006

ON GRADE LEVEL READING



Fixated General Strategies



Focus matters to
Address Disparity



For the next hour.....

OBJECTIVES

- Understand the concept of “reliability” and the specific actions you can take to pursue reliability
- Understand how high reliability organizations operate
- Begin to imagine high reliability organizations in education

AGENDA

PART 1: Reliability 101

- Activity

PART 2: The journey to reliability

- Facilitated conversation

Q&A

HIGH RELIABILITY

Outcome
**ZERO
FAILURES**

“Unnecessary harm”
2nd grader that is not a
“thriving reader”

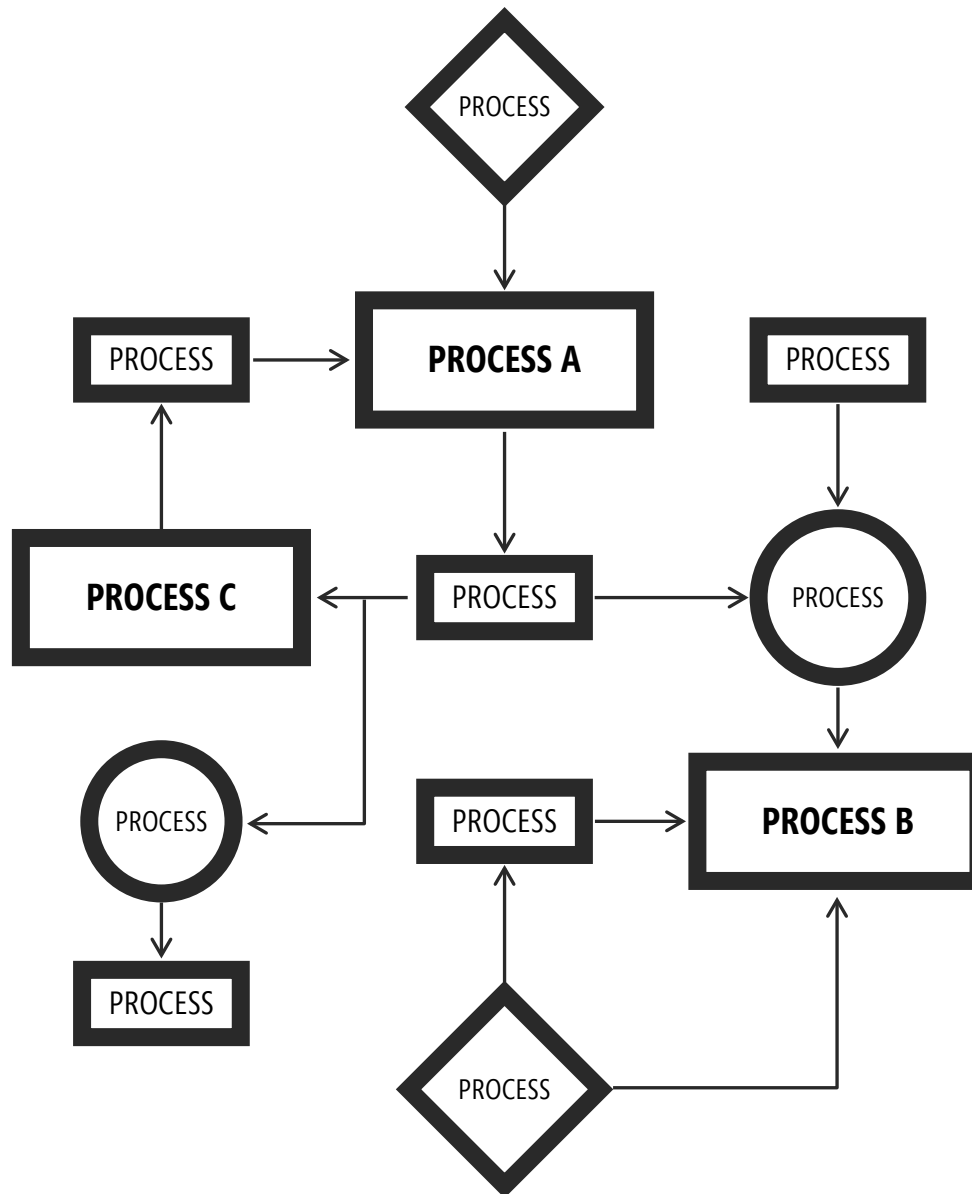
ESSENTIAL QUESTION:

How do you
organize to
move in this
direction?

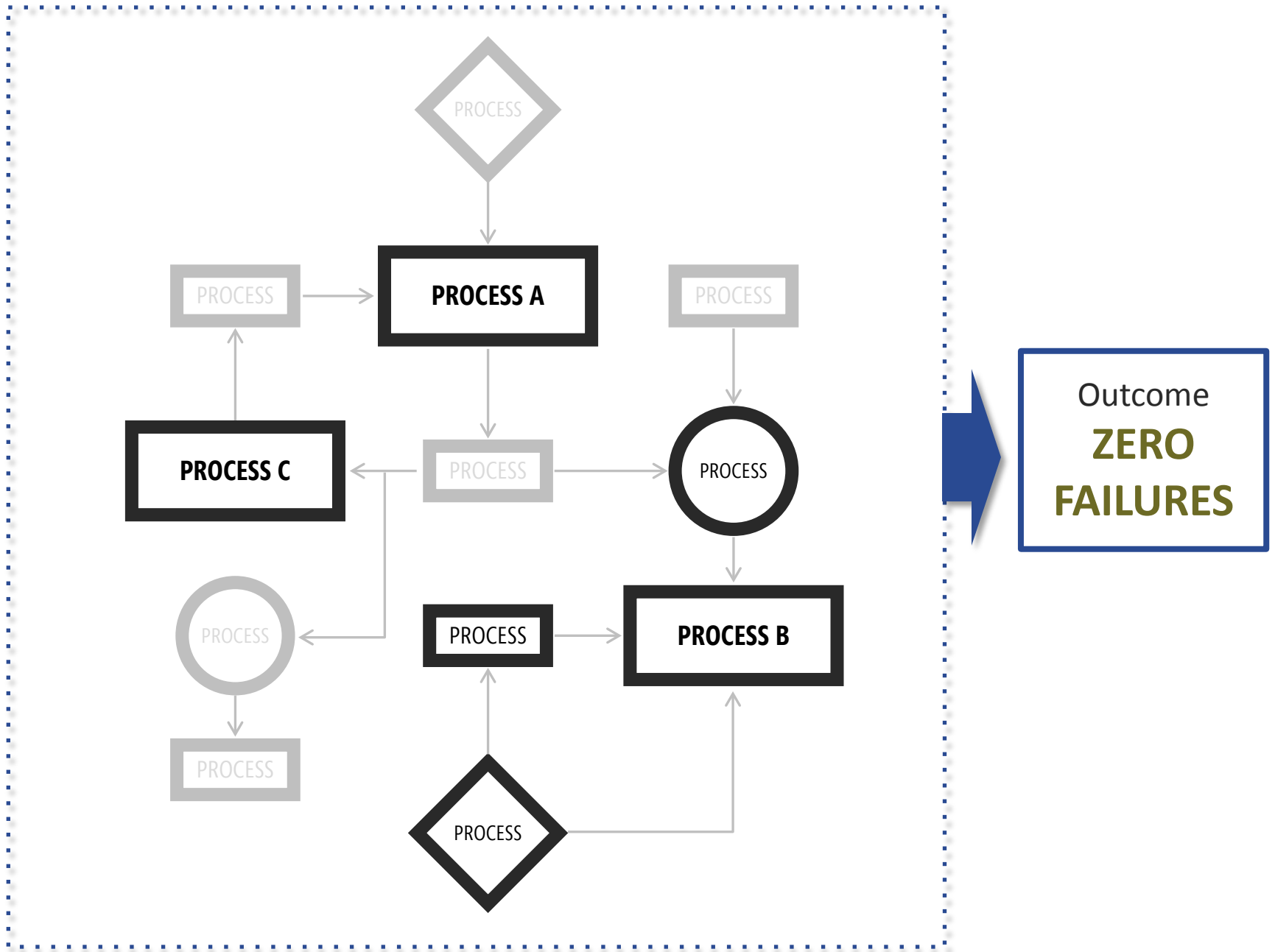
HIGH RELIABILITY

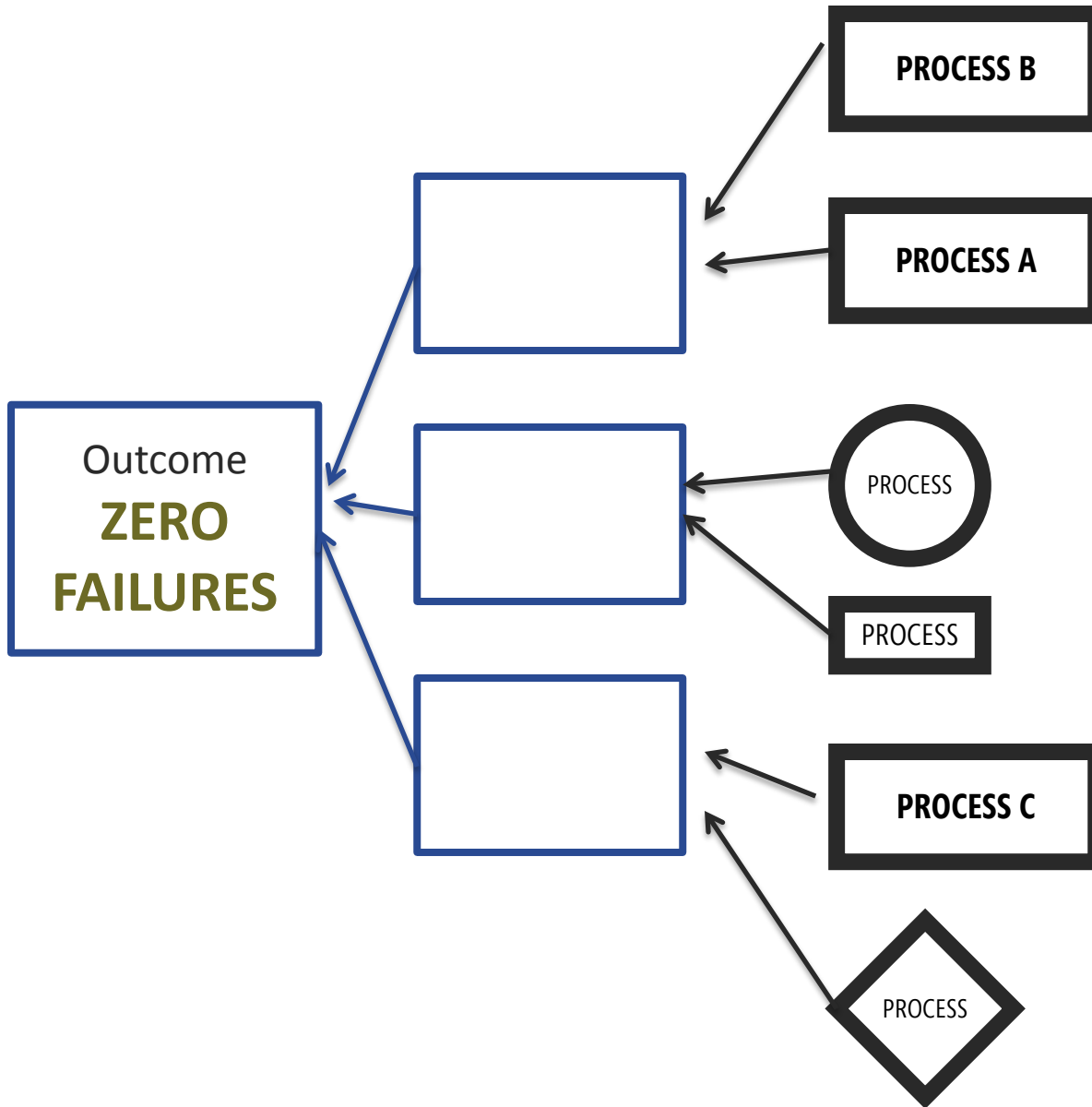
Outcome
**ZERO
FAILURES**

“Every system is designed to get exactly the results that it gets”



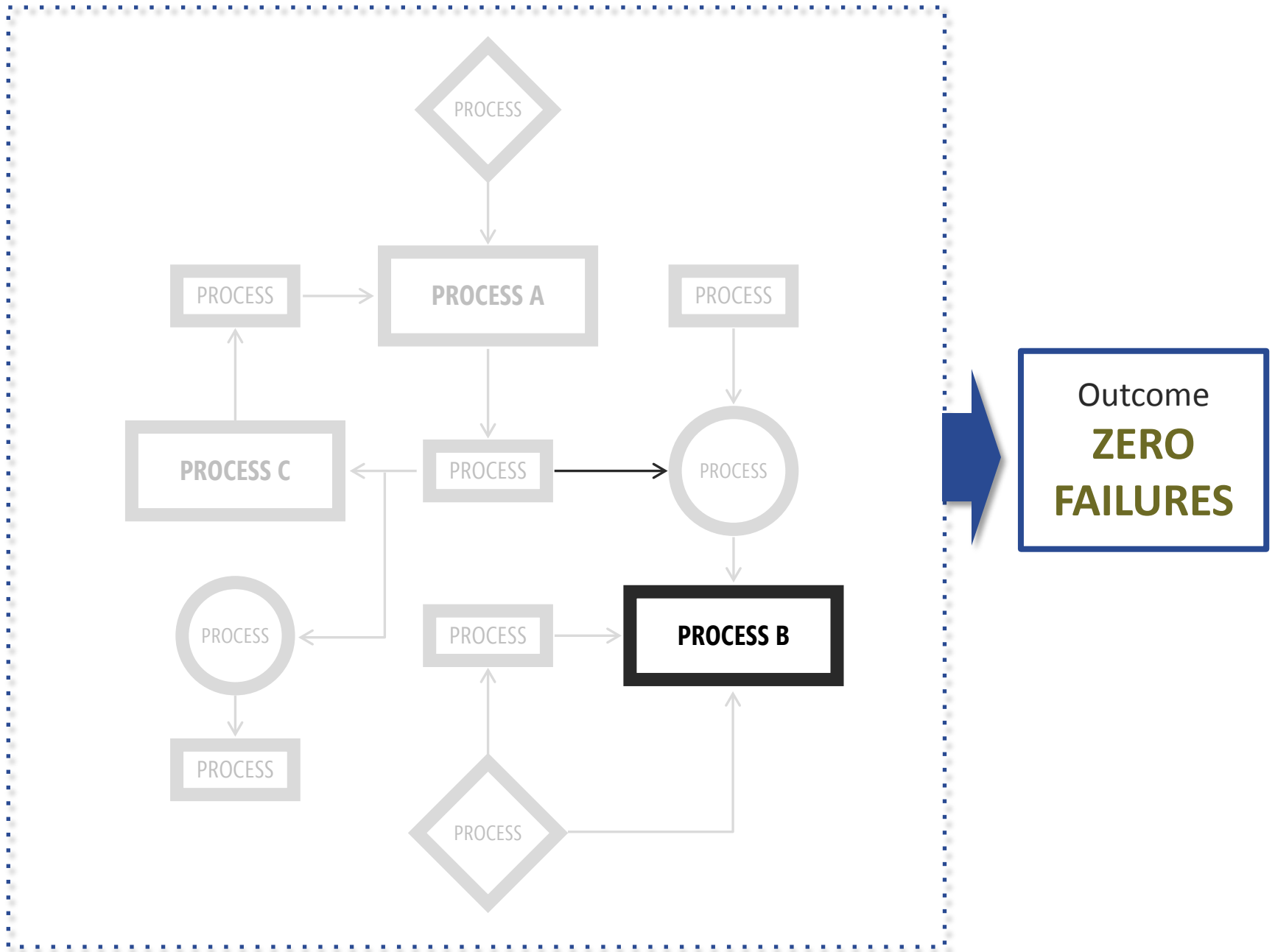
Outcome
**ZERO
FAILURES**



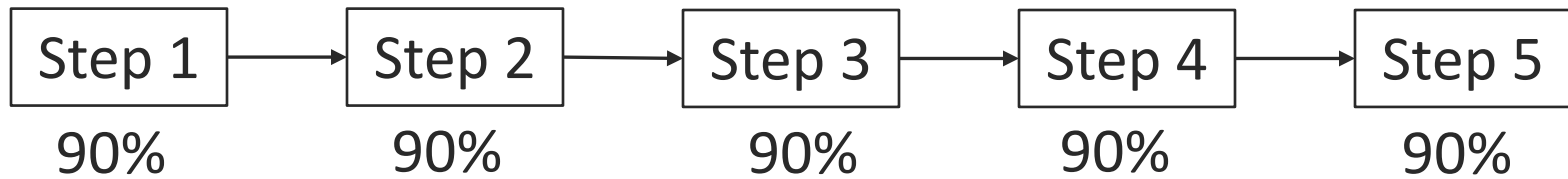


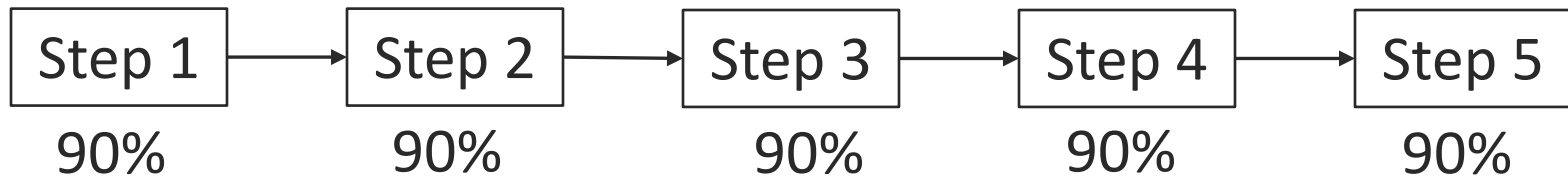
Moving Towards Reliability

- (1) Identify the key processes that impact your outcome
- (2) Measure the reliability of each of those processes
- (3) (Re)design the processes to make each process (and their combination) more reliable



PROCESS B





Why might this
matter?

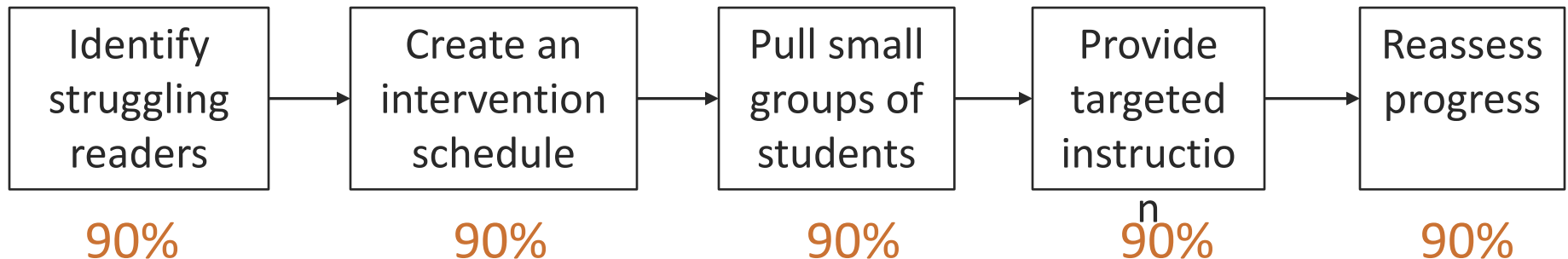
Step 1	.9
Step 2	x .9
Step 3	x .9
Step 4	x .9
Step 5	<u>x .9</u>

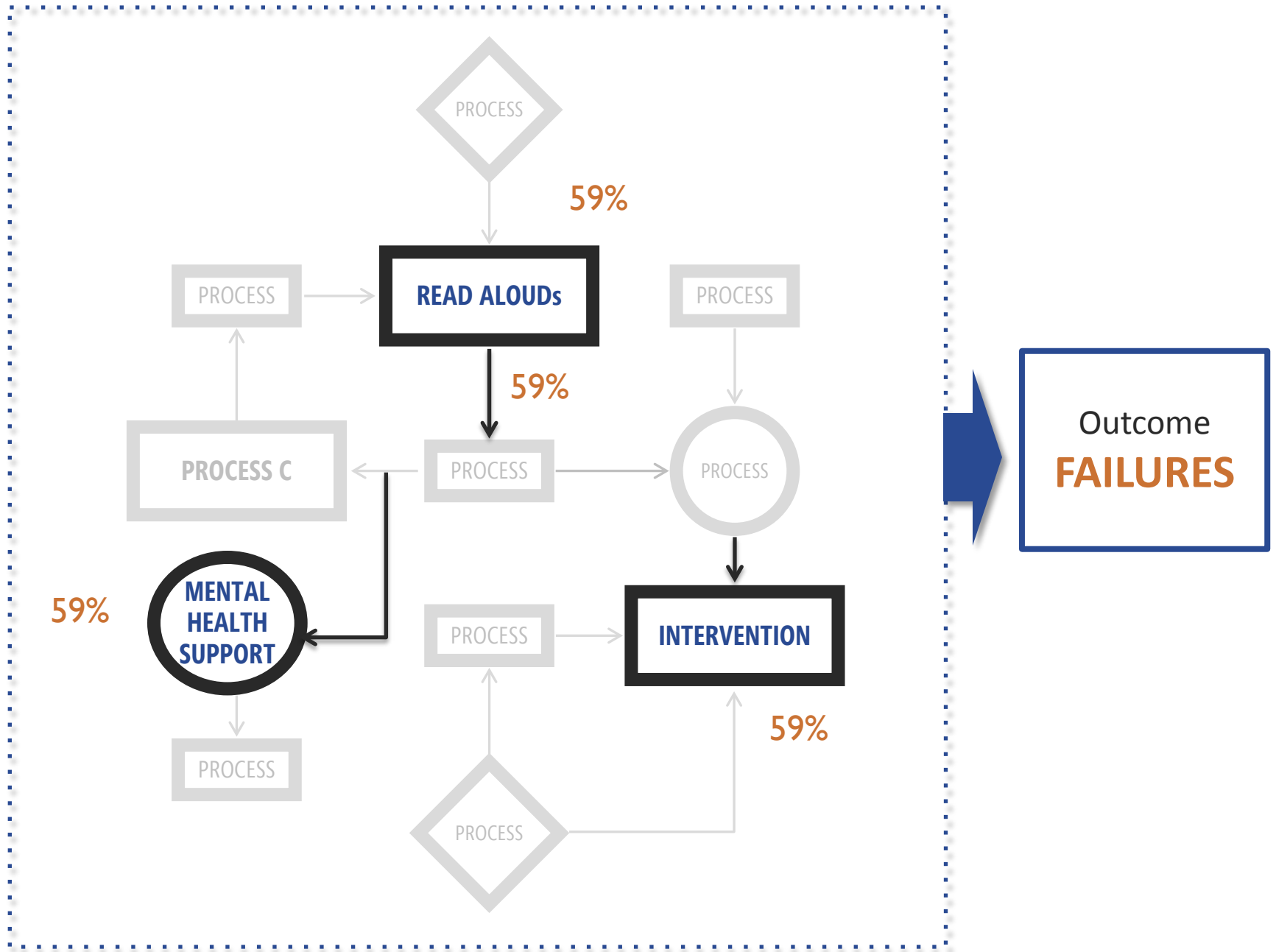
Only 59%
reliability!

59% of intended
dosage

**PROCESS: Intervention for
struggling readers in 1st grade**

**OUTCOME: Delivering the
right targeted instruction to the
right kids**





Moving Towards Reliability

- (1) Identify the key processes that impact your outcome
- (2) Measure the reliability of each of those processes
- (3) (Re)design the processes to make each process (and their combination) more reliable

Apply (in TRIADs)

- Choose one of the scenarios below (or your own!)
- Identify ONE key process related to your outcome (*quickly sketch it out if you can*)
- Estimate the reliability of the process (in a context you are familiar with)
- Identify other key processes related to your scenario. Repeat.

Your personal life

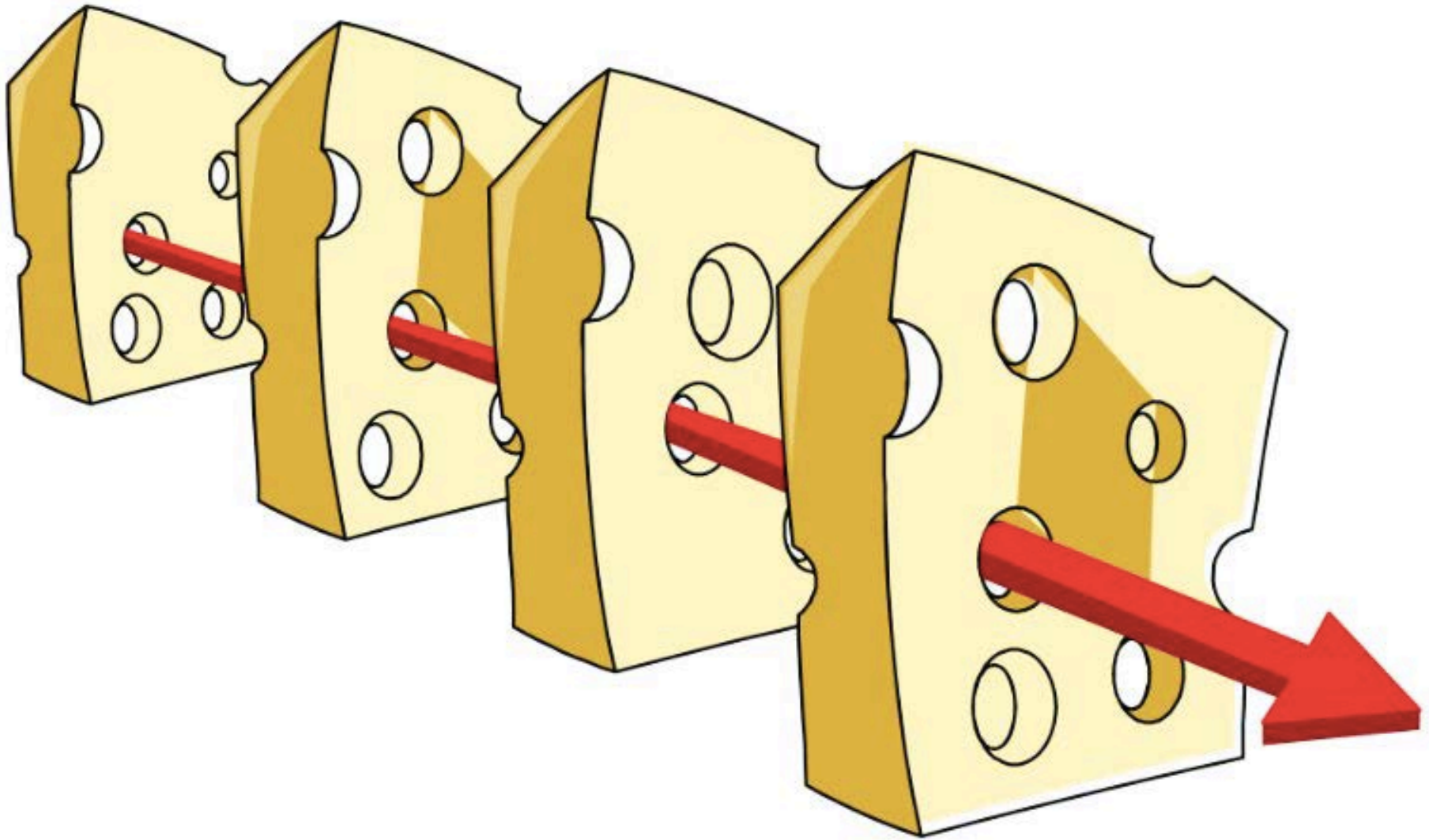
MORNING ROUTINE that gets you out of your house on time

In a classroom

Delivering the “right dosage” of **GUIDED READING** to all students in a 2nd grade classroom

In a school

Equitable **DISCIPLINE PROCEDURES** that maximize time for learning



The Journey to Zero

LEVEL 1 RELIABILITY

(1 or 2 failures out of 10 opportunities)

LEVEL 2 RELIABILITY

(<5 failures out of 100 opportunities)

LEVEL 3 RELIABILITY

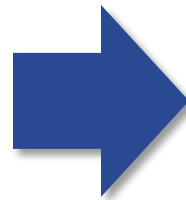
(<5 failures out of 1000 opportunities)

The Journey to Zero

To get to....

LEVEL 1 RELIABILITY

(1 or 2 failures out of 10 opportunities)



Focus on...

Identification and design of key processes

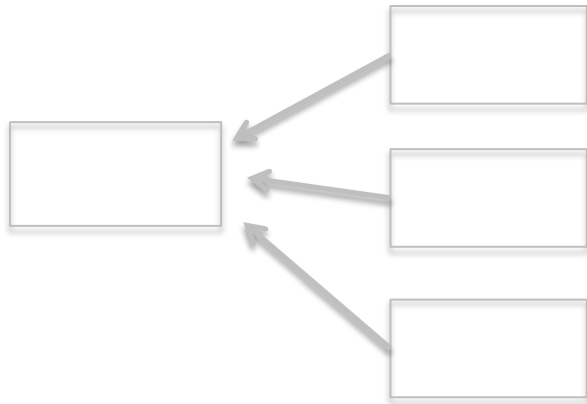
LEVEL 2 RELIABILITY

(<5 failures out of 100 opportunities)

LEVEL 3 RELIABILITY

(<5 failures out of 1000 opportunities)

(I) IDENTIFY KEY PROCESSES



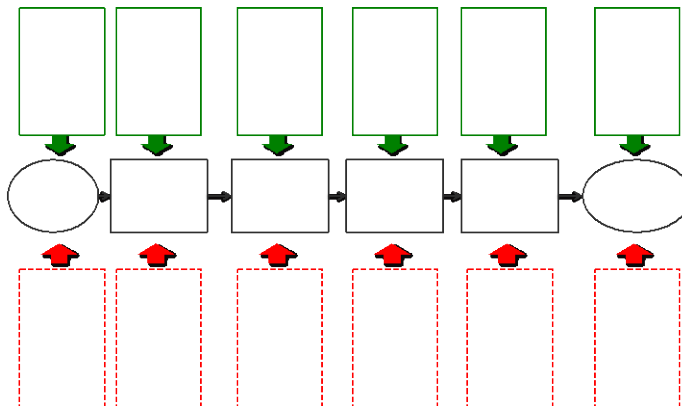
(Ib) COMMON PROCESS DESIGN



(2) MEASURE RELIABILITY



(3) IMPROVE RELIABILITY



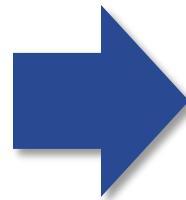
The Journey to Zero

To get to....

Focus on...

LEVEL 1 RELIABILITY

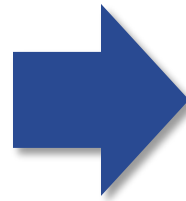
(1 or 2 failures out of 10 opportunities)



Identification and design of key processes

LEVEL 2 RELIABILITY

(<5 failures out of 100 opportunities)



Human factors and reliability science

LEVEL 3 RELIABILITY

(<5 failures out of 1000 opportunities)

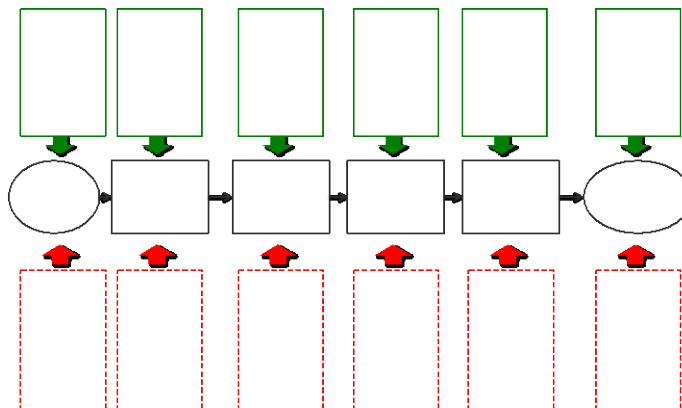
How do we make doing “the right thing” the default?

FROM LEVEL 1 to LEVEL 2 RELIABILITY



cpsl SURGICAL SAFETY CHECKLIST www.safesurgery.ca		
Sign In – Before induction of anesthesia Hand-off from Day room, ER, Nursing Unit or ICU <input type="checkbox"/> Team Assembly <input type="checkbox"/> Anesthesia equipment safety check completed <input type="checkbox"/> Patient information confirmed - Identity (1 identifier) - Consent(s) - Site and procedure and Anesthesia Technique - Site, side and level marked - Necessary Clinical documentation <input type="checkbox"/> Body weight (kg) <input type="checkbox"/> Allergies <input type="checkbox"/> Difficult Airway / Airway Risk - Confirm equipment and resources available <input type="checkbox"/> Monitoring - Pulse oximetry <input type="checkbox"/> Confirm essential imaging displayed After Induction <input type="checkbox"/> Review vital sign results <input type="checkbox"/> Medications - Anesthetic prophylaxis - Pain dose? - Anesthetic status	Time Out – After induction (continued) <input type="checkbox"/> All team members introduce themselves by name and role if not done already Team review <input type="checkbox"/> Patient positioning and support / Warming devices / Pressure protection <input type="checkbox"/> Special Instruments, implants <input type="checkbox"/> Confirmation of Specimen requirements <input type="checkbox"/> Postoperative destination Before Skin Incision <input type="checkbox"/> Surgeon, Anesthesiologist, and Nurse verbally confirm - Patient - Site, side, and level - Procedure - Anesthetic prophylaxis: request done? <input type="checkbox"/> "Does anyone have any other questions or concerns before proceeding?"	Sign Out – Before patient leaves the OR <input type="checkbox"/> Team review - Instrument/sponge/needle count - Pressure - Specimen documentation complete specimens labelled - Important intra-operative events - Fluid balance / management - Recovery plans, pain management, position <input type="checkbox"/> Written Operative Note Completed and signed <input type="checkbox"/> Instructions for transfer and expectations of planned care in PACU, Nursing Unit or ICU are complete? Could this event have been improved? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Handover to PACU, Nursing Unit or ICU

Figure 2. Checklist developed from the ST Children's Hospital



What changes might we introduce?

CHANGE CONCEPTS:

- Reminders
- Constraints
- Affordances
- Contingency Plans

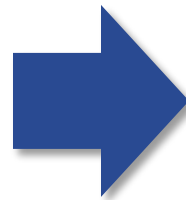
The Journey to Zero

To get to....

Focus on...

LEVEL 1 RELIABILITY

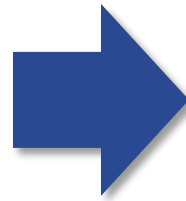
(1 or 2 failures out of 10 opportunities)



Identification and design of key processes

LEVEL 2 RELIABILITY

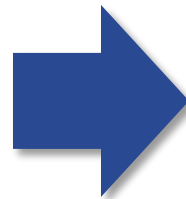
(<5 failures out of 100 opportunities)



Human Factors and Reliability Science

LEVEL 3 RELIABILITY

(<5 failures out of 1000 opportunities)



Create a high reliability culture

High Reliability Organizations

1. Preoccupation with failure
2. Sensitivity to operations
3. Reluctance to simplify

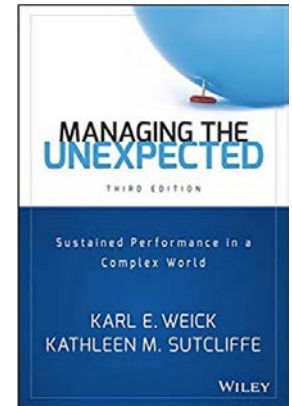


Identify

4. Commitment to resilience
5. Deference to expertise



Mitigate



THIRD GRADING READING IN A SCHOOL





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