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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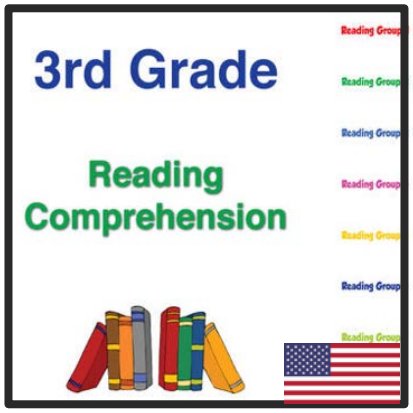

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Enrollment in Early Education

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Mt. Everest Summit
29,035' / 8850m
South Summit
28,900' / 8690m
Lhotse
27,940' / 8514m
C4 South Col
26,300'
8000m
C3
23,300'
7162m
Lhotse Face
C2
21,300'
6400m
Western Cwm
C1
19,500'
5944m
Khumbu Icefall
Base Camp
17,500'
5334m
© www.alanarnette.com

5

2

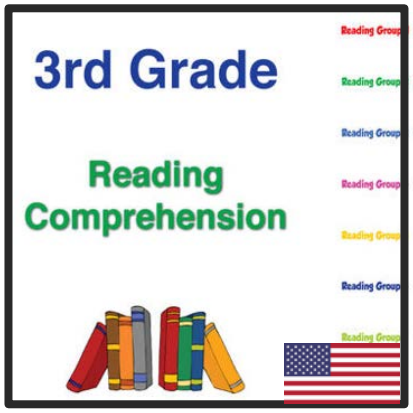
6


ROAD
SAFETY

4


Chemical Industry

3


3rd Grade
Reading
Comprehension
Reading Group
Reading Group
Reading Group
Reading Group
Reading Group
Reading Group

8


EXIT ONLY
CAUTION
SEVERE TIRE
DAMAGE
DO NOT ENTER

1


Enrollment in Early Education

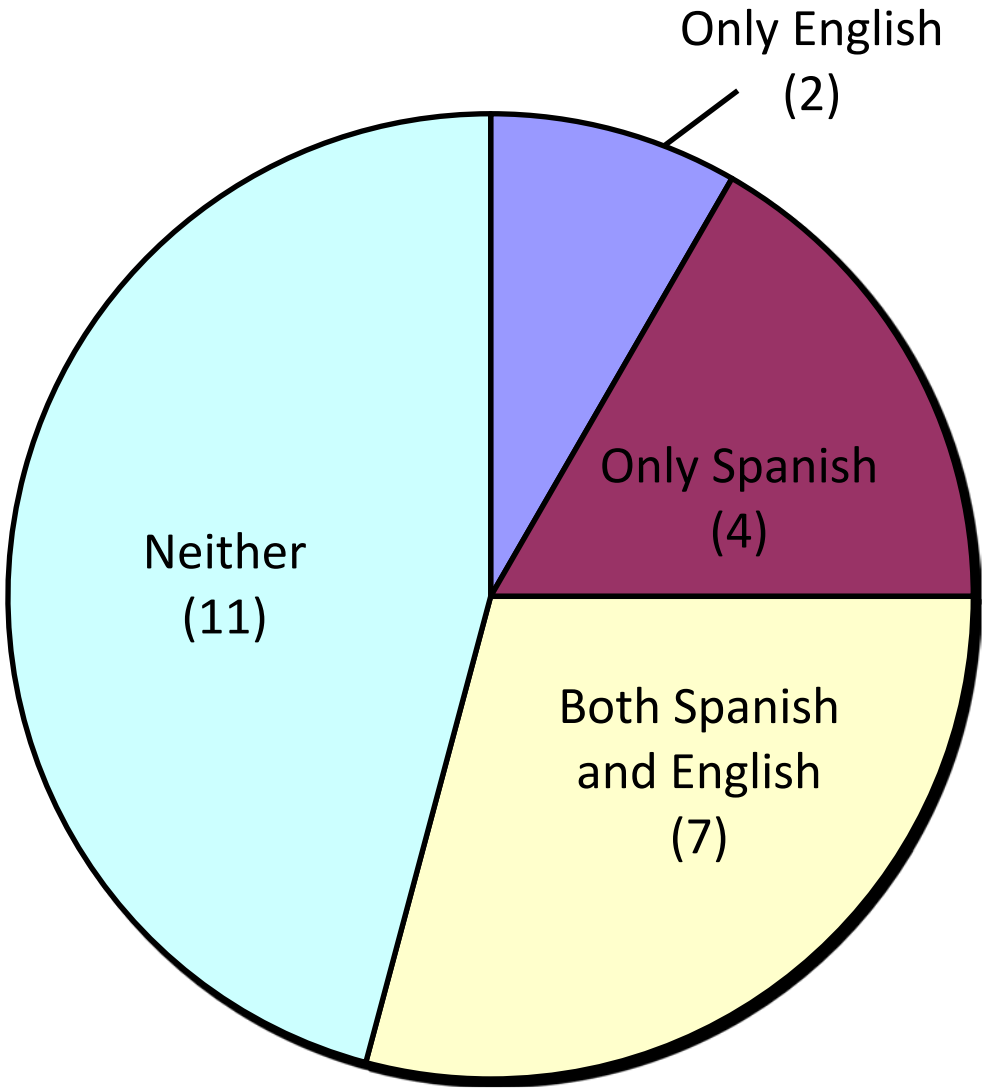
7

How did we get interested in reliability?

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

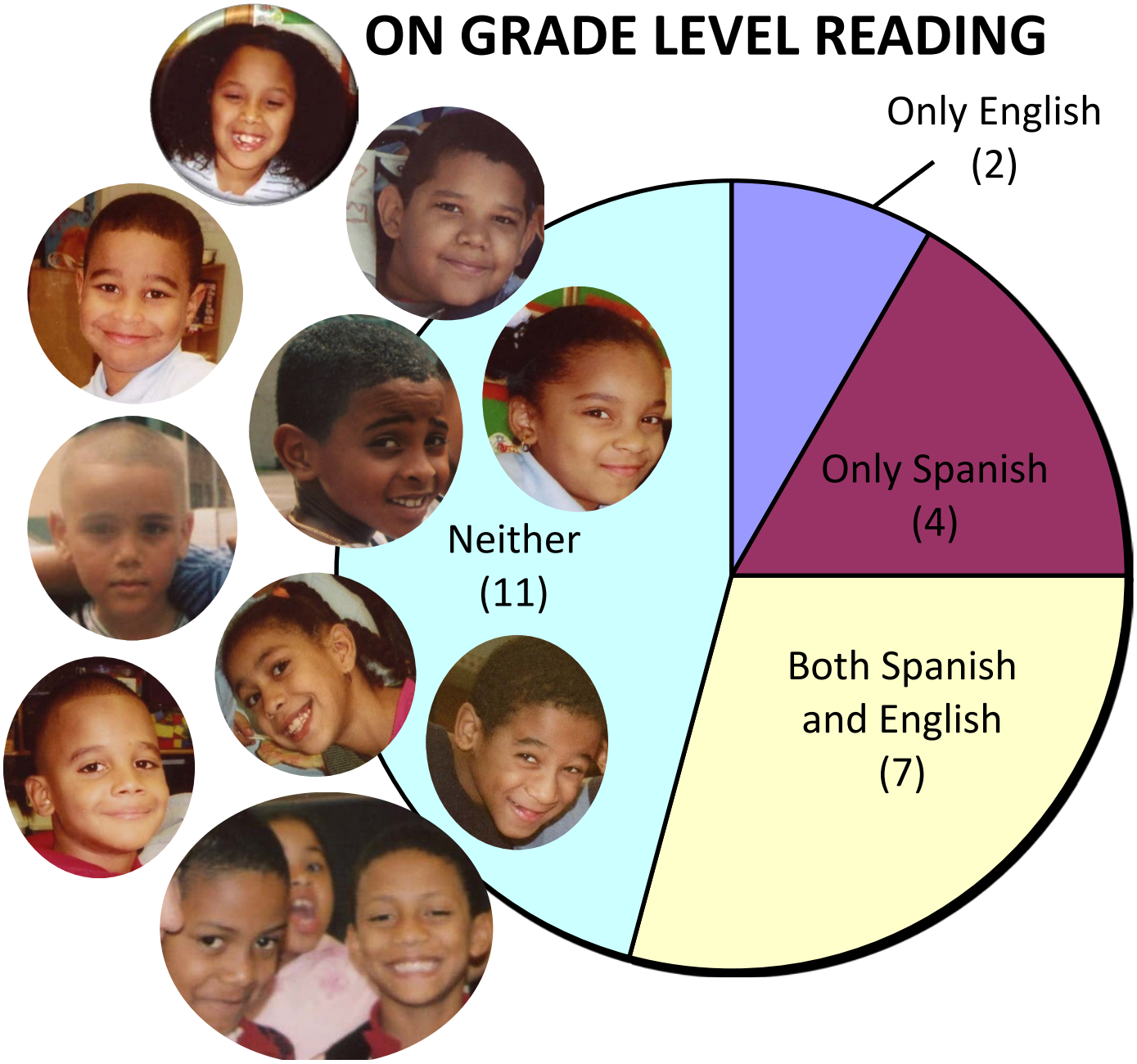
2005-2006

ON GRADE LEVEL READING



2005-2006

ON GRADE LEVEL READING



Fixated General Strategies

Focus matters to Address Disparity

Cincinnati Children's™

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

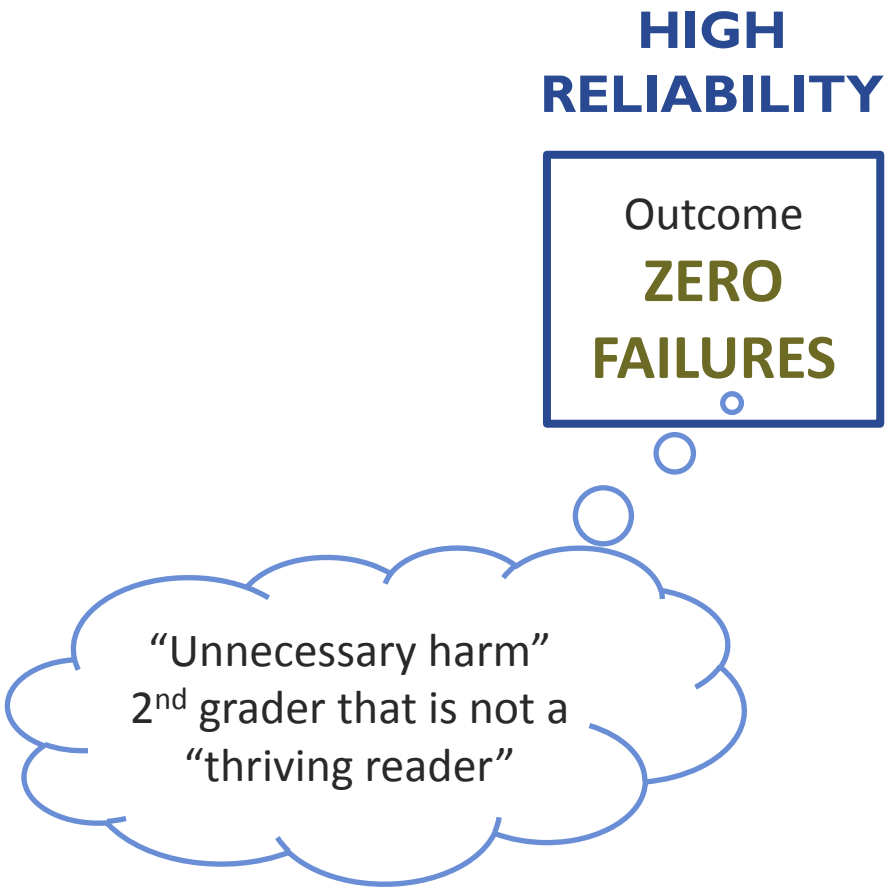
PART 1: Reliability 101

- Activity

PART 2: The journey to reliability

- Facilitated conversation

Q&A

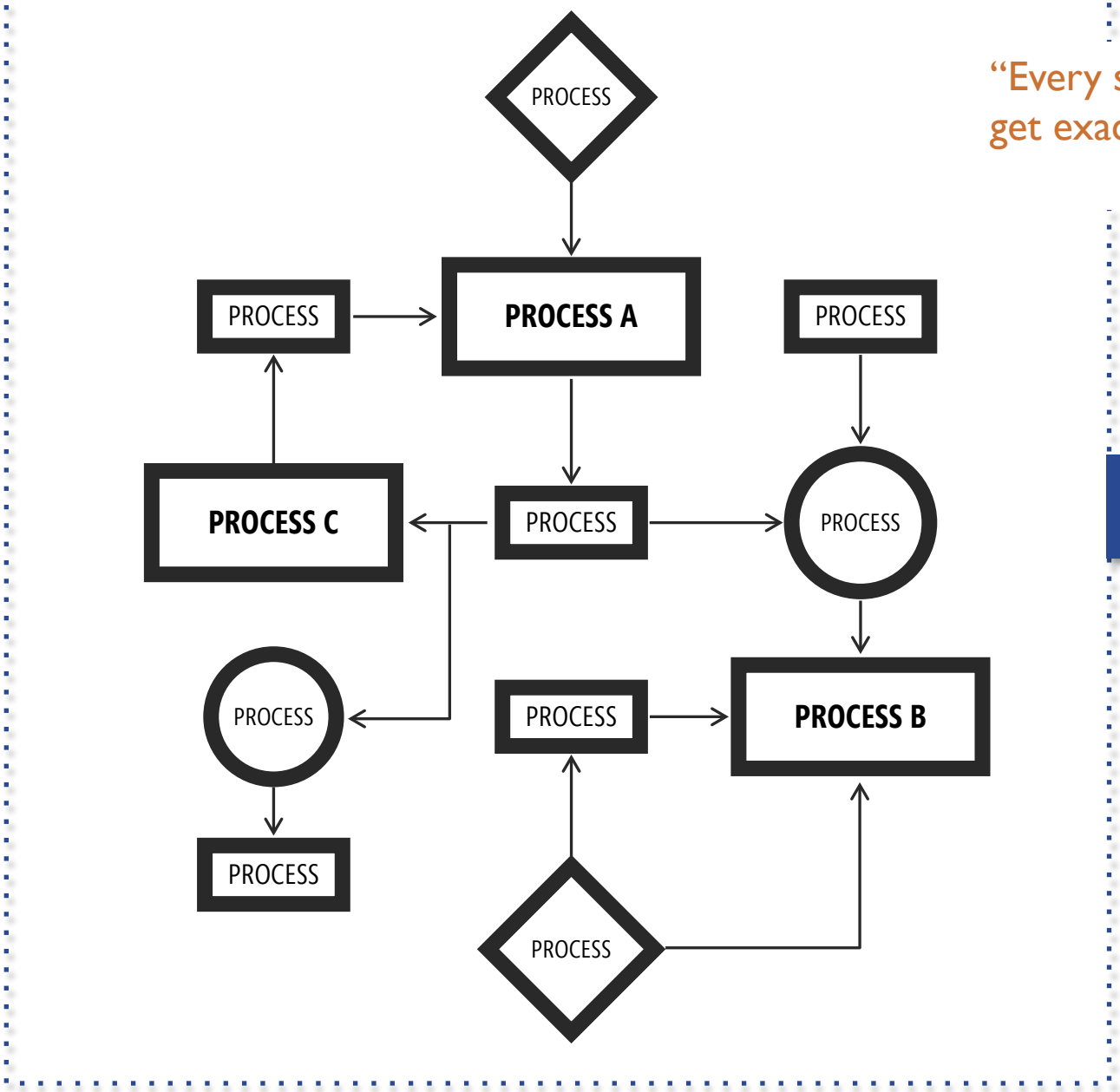

HIGH RELIABILITY
Outcome
ZERO FAILURES
"Unnecessary harm"
2nd grader that is not a
"thriving reader"

ESSENTIAL QUESTION:

How do you organize to move in this direction?

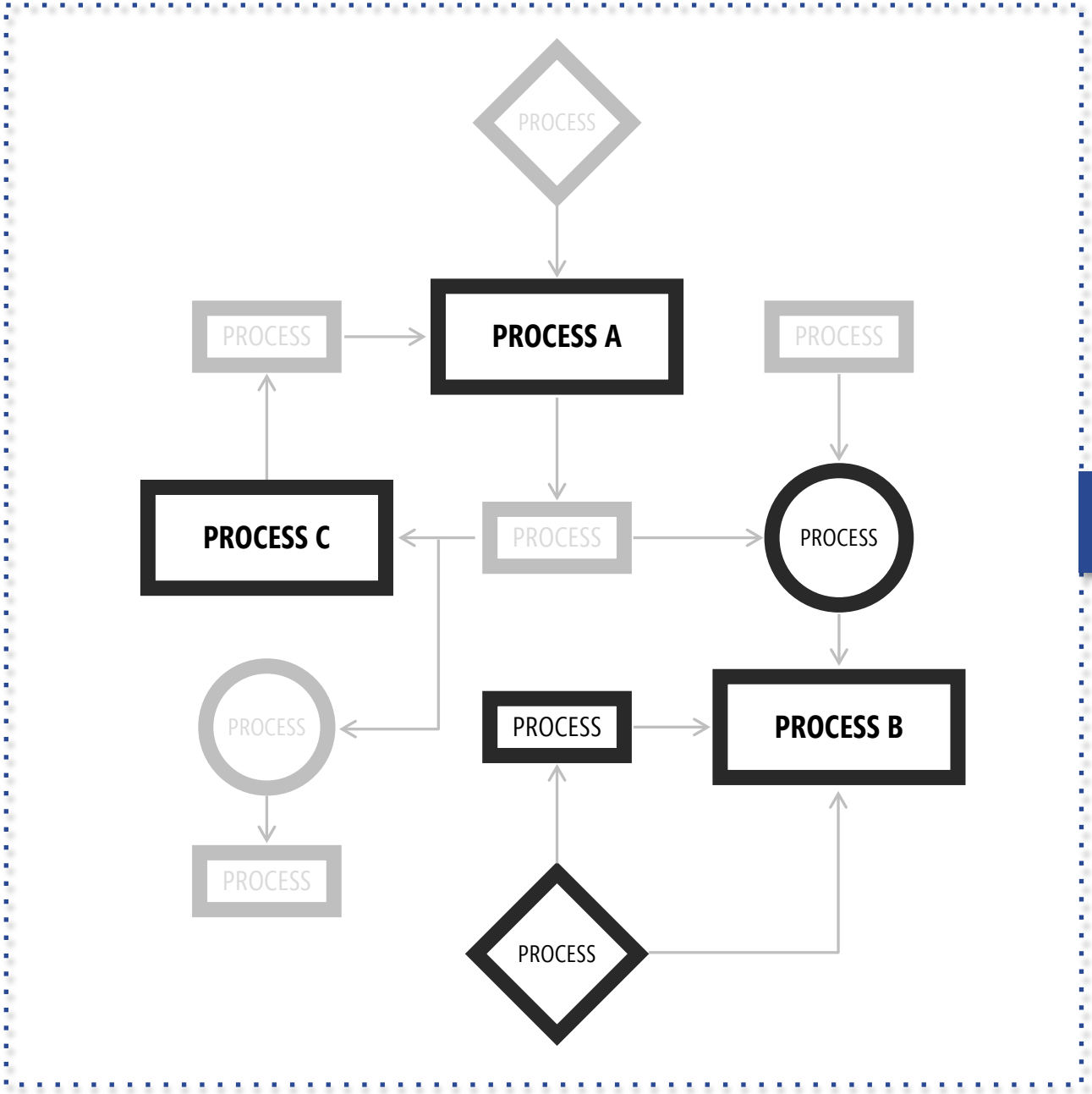
HIGH RELIABILITY

Outcome
ZERO FAILURES

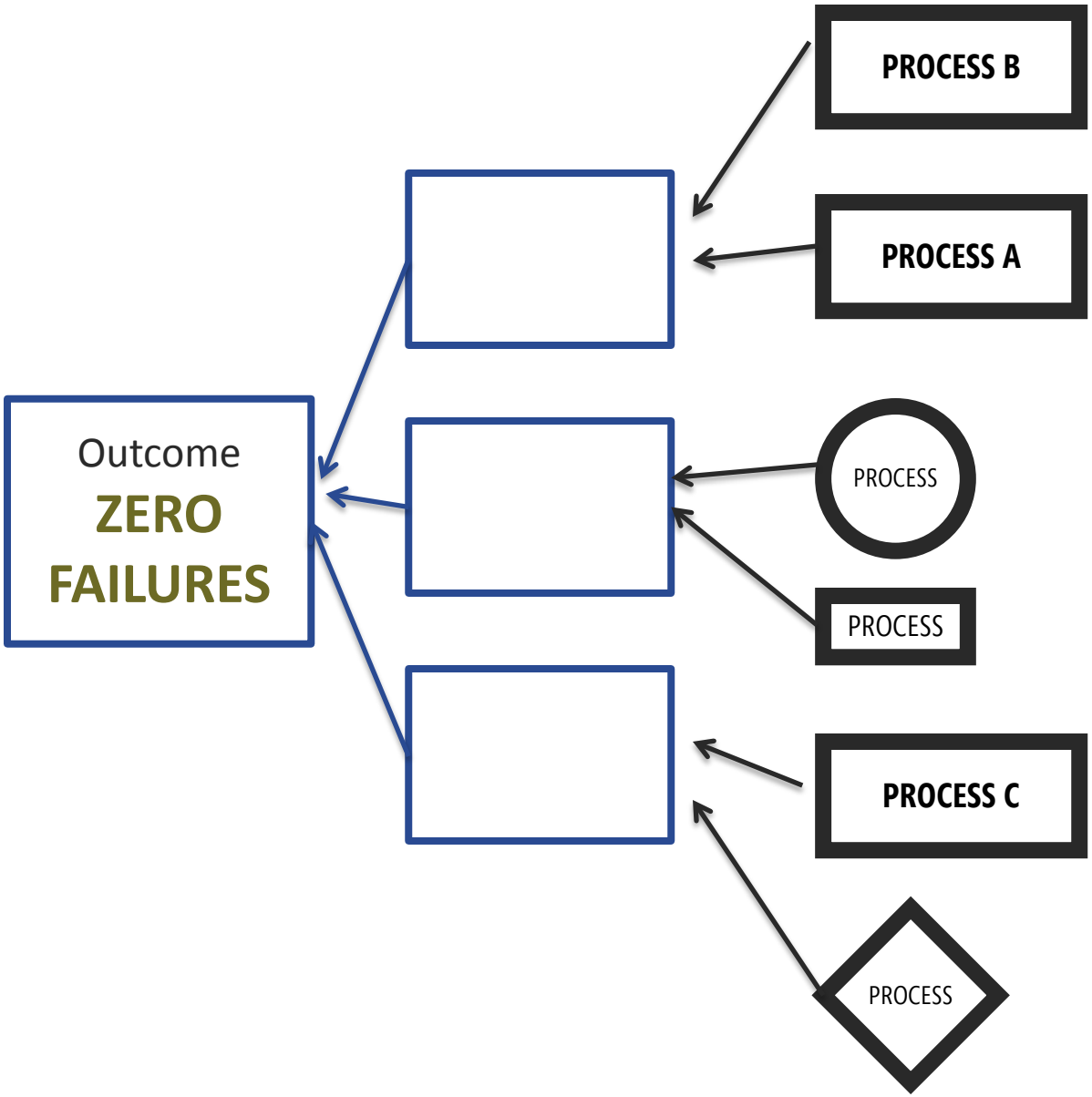


"Every system is designed to get exactly the results that it gets"

Outcome
ZERO FAILURES



Outcome
ZERO FAILURES

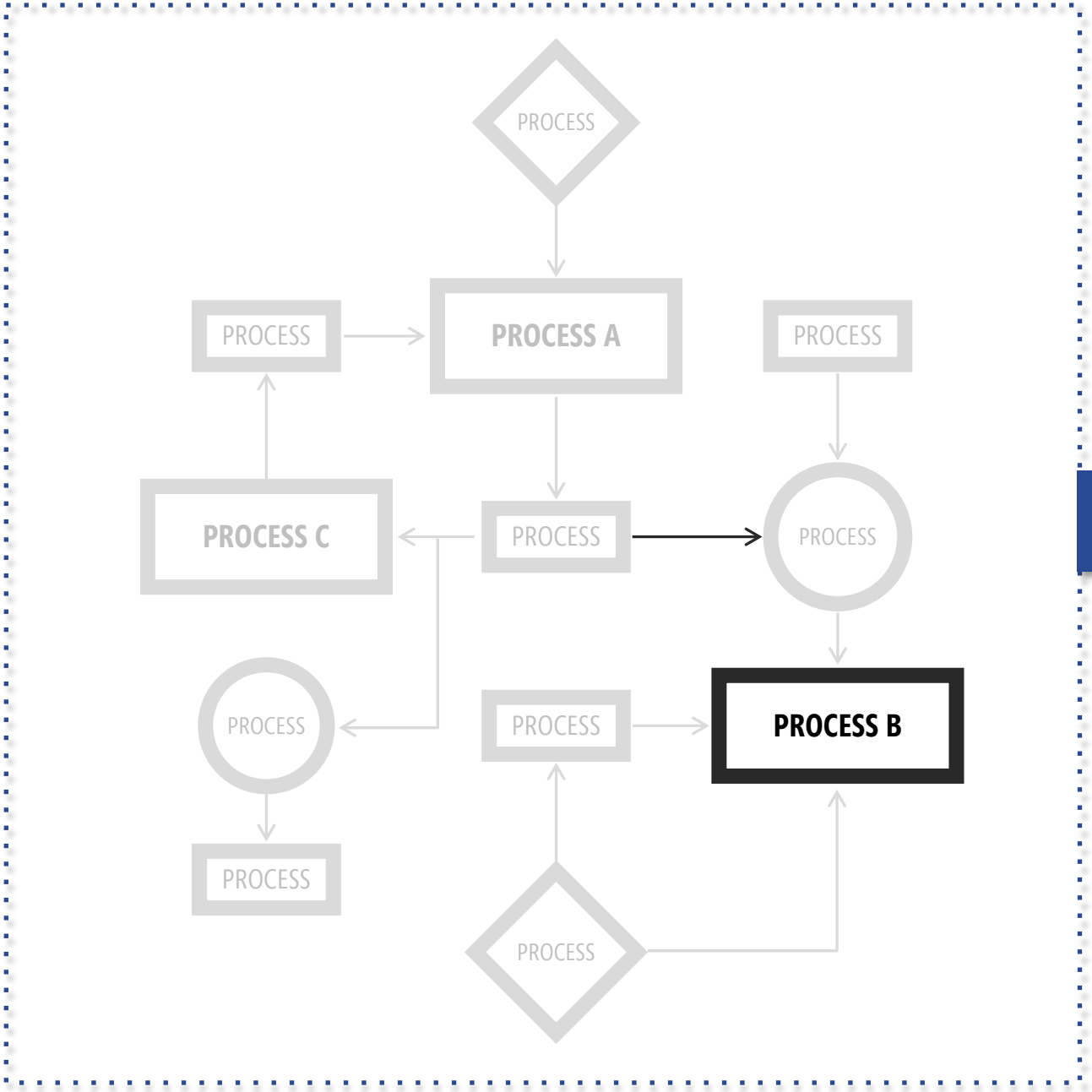

PROCESS B
PROCESS A
Outcome
ZERO
FAILURES
PROCESS
PROCESS
PROCESS C
PROCESS

Moving Towards Reliability

(1) Identify the key processes that impact your outcome

(2) Measure the reliability of each of those processes

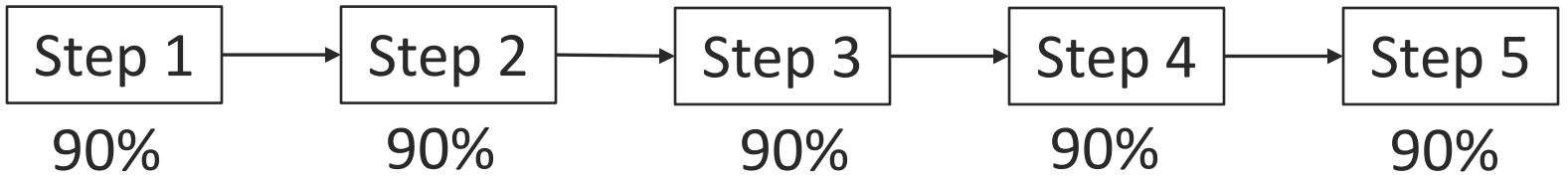
(3) (Re)design the processes to make each process (and their combination) more reliable

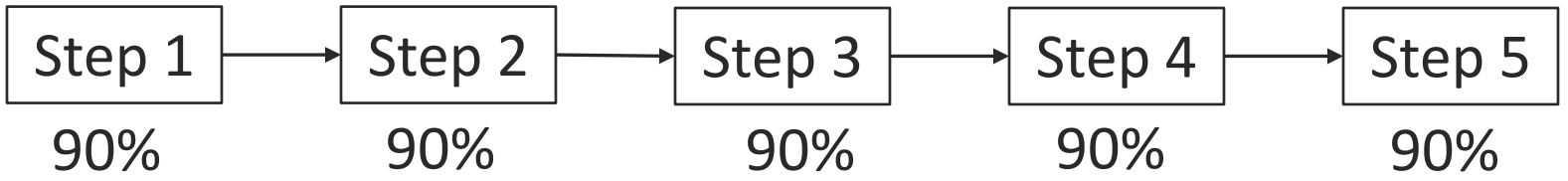


Outcome

ZERO FAILURES

PROCESS B





Why might this matter?

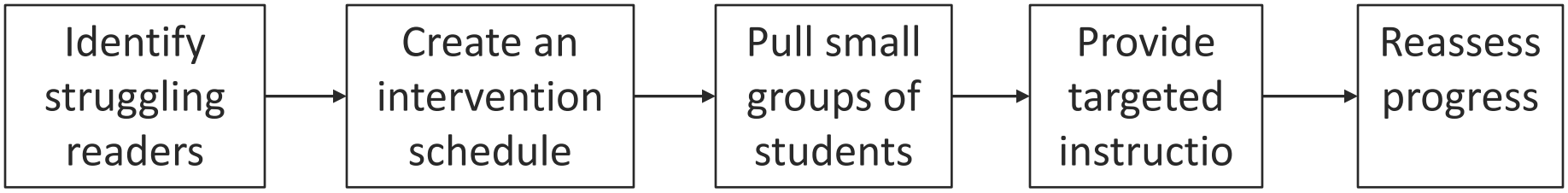
Step 1	.9
Step 2	x .9
Step 3	x .9
Step 4	x .9
Step 5	x .9

Only 59% reliability!

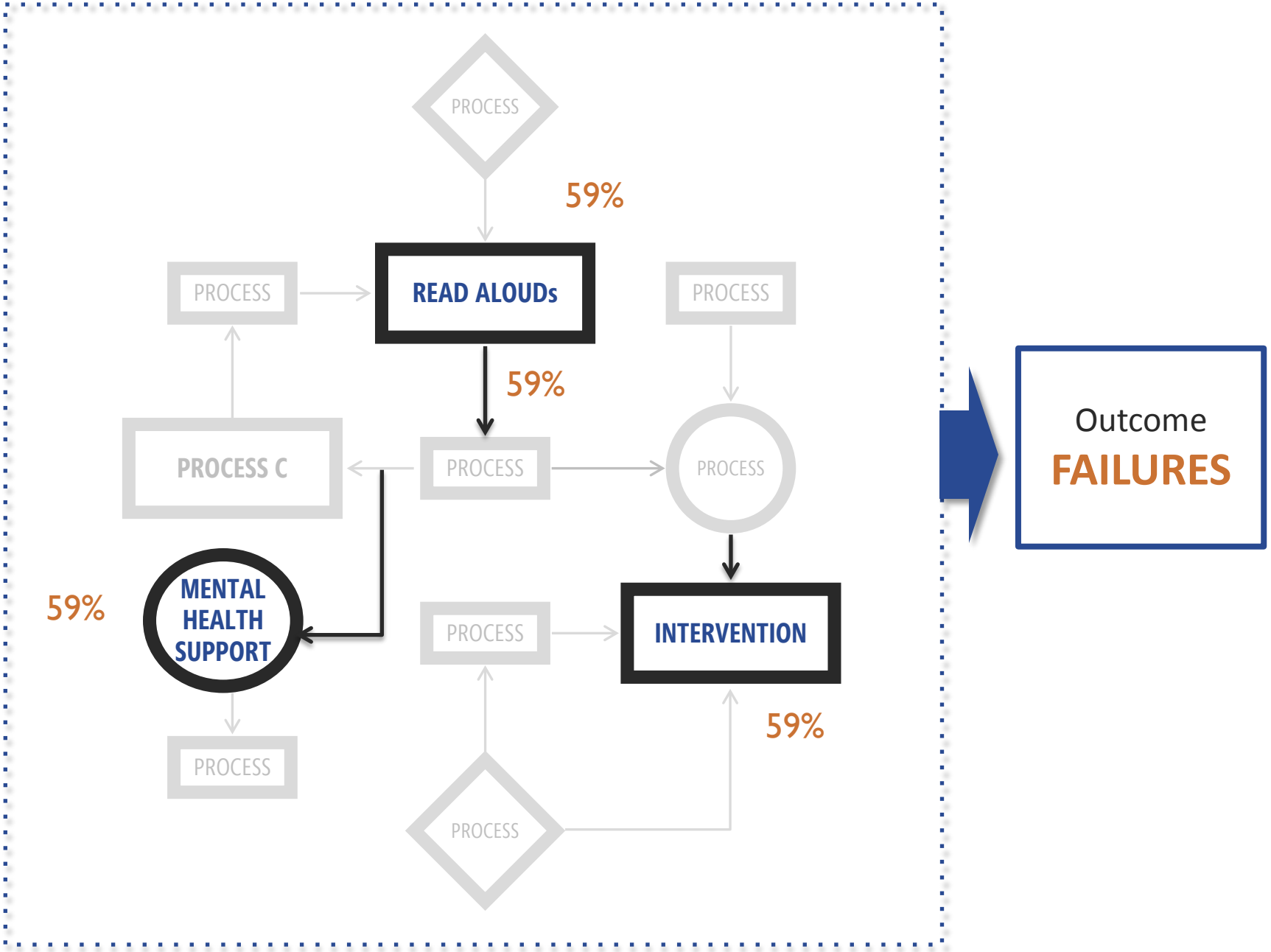
59% of intended dosage

PROCESS: Intervention for struggling readers in 1st grade

OUTCOME: Delivering the right targeted instruction to the right kids



90% 90% 90% 90% 90%


PROCESS
59%
READ ALOUDs
PROCESS
PROCESS
59%
PROCESS C
PROCESS
PROCESS
59%
MENTAL HEALTH SUPPORT
PROCESS
INTERVENTION
59%
PROCESS
PROCESS
Outcome
FAILURES

Moving Towards Reliability

(1) Identify the key processes that impact your outcome

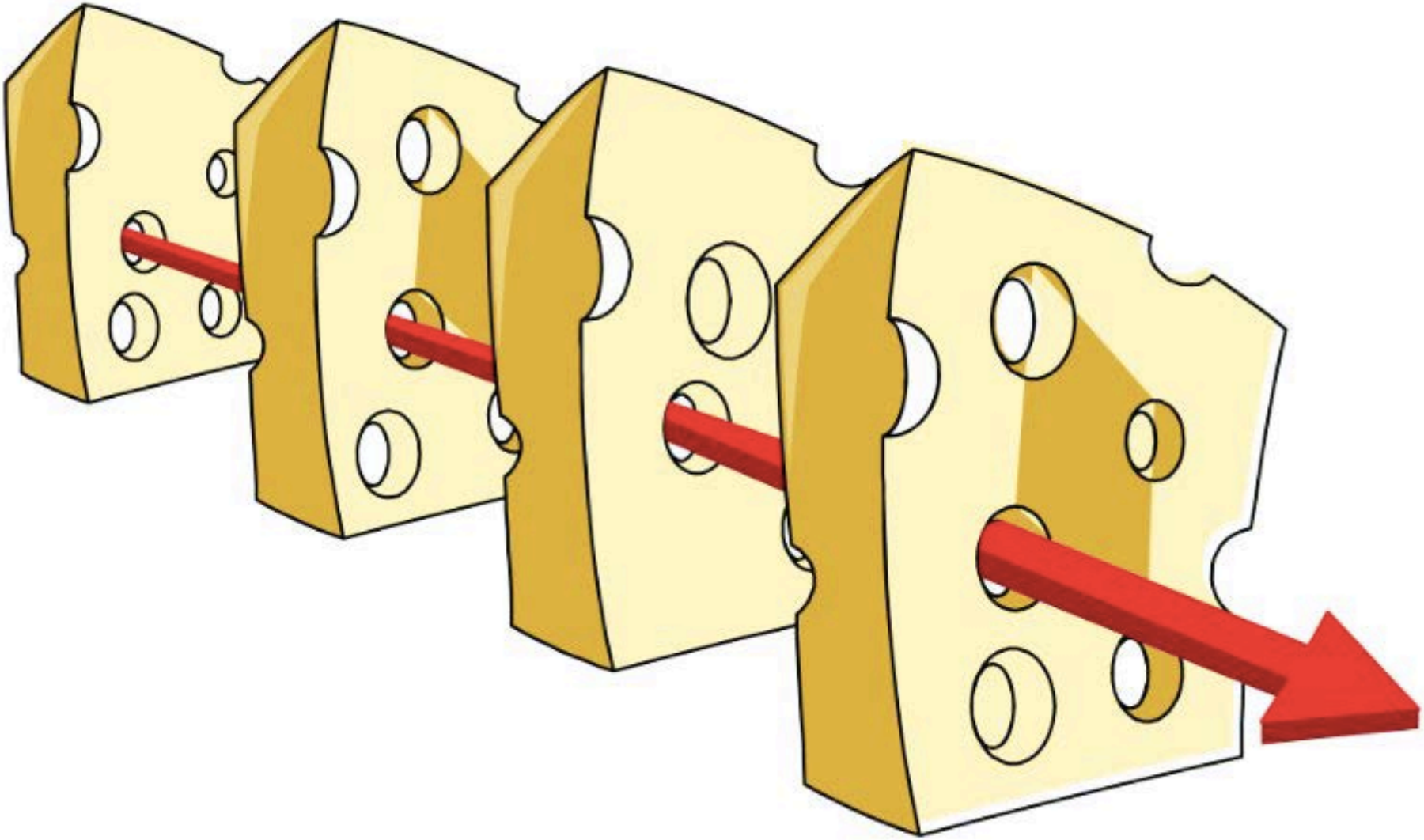
(2) Measure the reliability of each of those processes

(3) (Re)design the processes to make each process (and their combination) more reliable

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	*In a classroom*	*In a school*
MORNING ROUTINE that gets you out of your house on time	Delivering the "right dosage" of **GUIDED READING** to all students in a 2nd grade classroom	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)

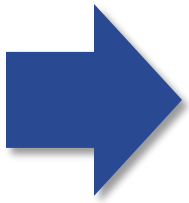
The Journey to Zero

To get to….

LEVEL 1 RELIABILITY
(1 or 2 failures out of 10 opportunities)

LEVEL 2 RELIABILITY
(<5 failures out of 100 opportunities)

LEVEL 3 RELIABILITY
(<5 failures out of 1000 opportunities)

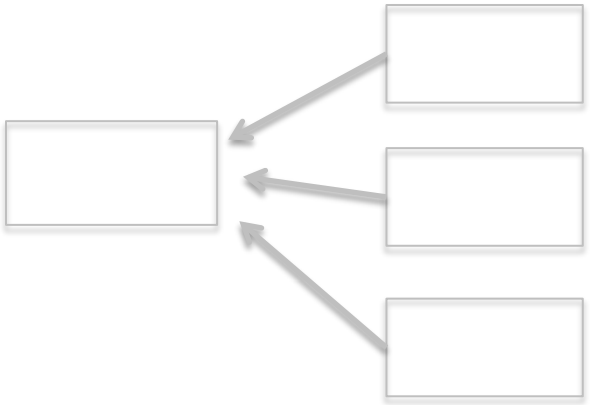


Focus on…

Identification and design of key processes

FROM CHAOS to LEVEL I RELIABILITY

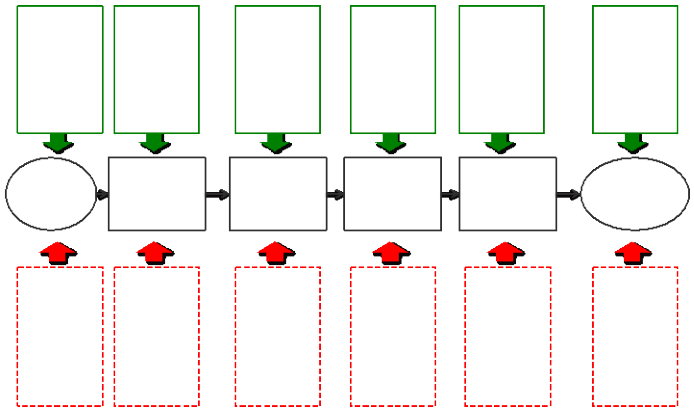
(1) IDENTIFY KEY PROCESSES

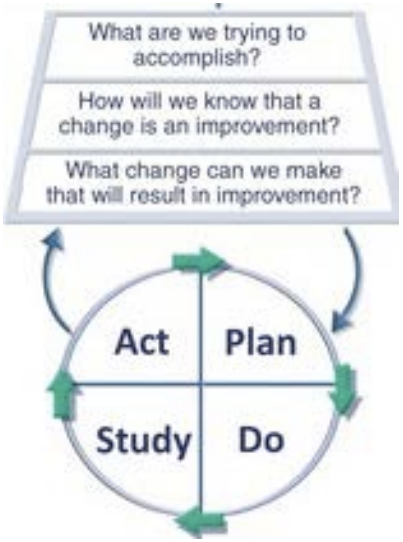


(1b) COMMON PROCESS DESIGN

(2) MEASURE RELIABILITY

(3) IMPROVE RELIABILITY

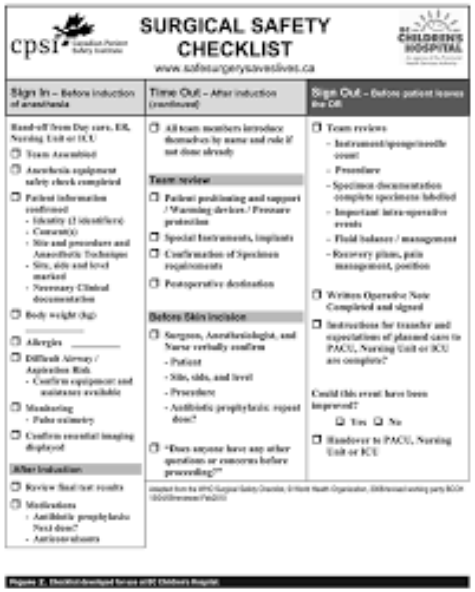


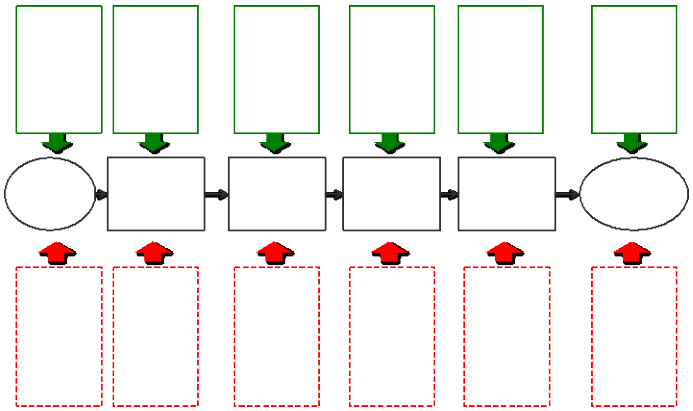


The Journey to Zero

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?





What changes might we introduce?

CHANGE CONCEPTS:

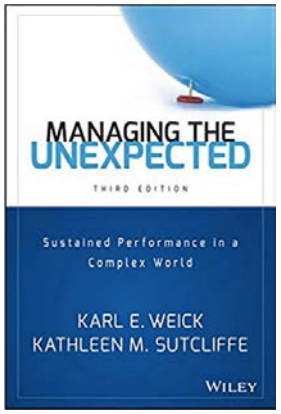
- Reminders
- Constraints
- Affordances
- Contingency Plans

FROM LEVEL 1 to LEVEL 2 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)	→	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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