1. Foundational requirement

an organized system of care delivery

Two principles *related to complexity*

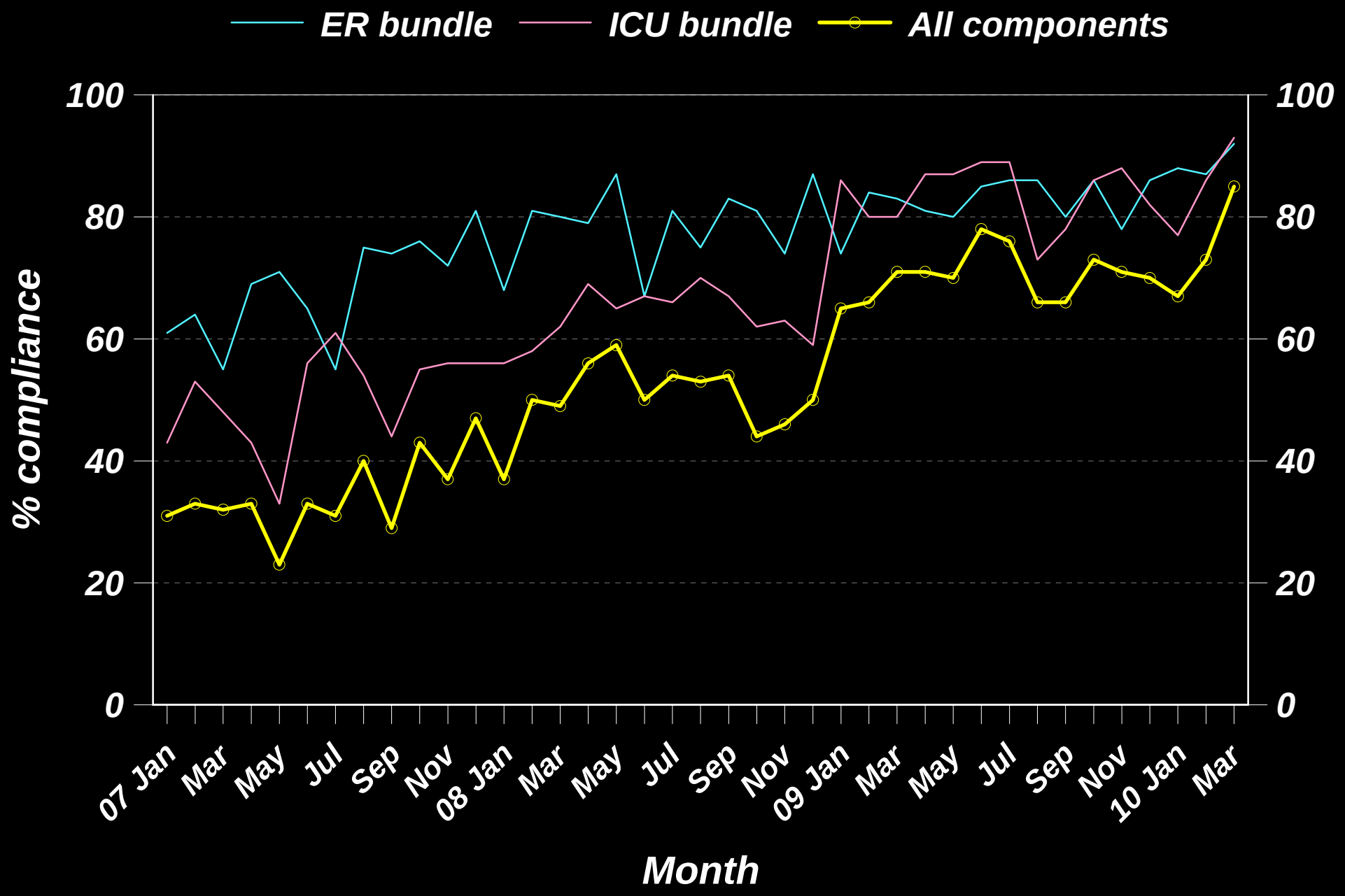
1. ***Context matters***
   - *clinical trial results not generally replicable in daily practice*
   - *different results in different settings*
   - *see Pawson & Tilley:* Realistic Evaluation *(CMO study design)*

2. ***No guideline perfectly fits any patient***

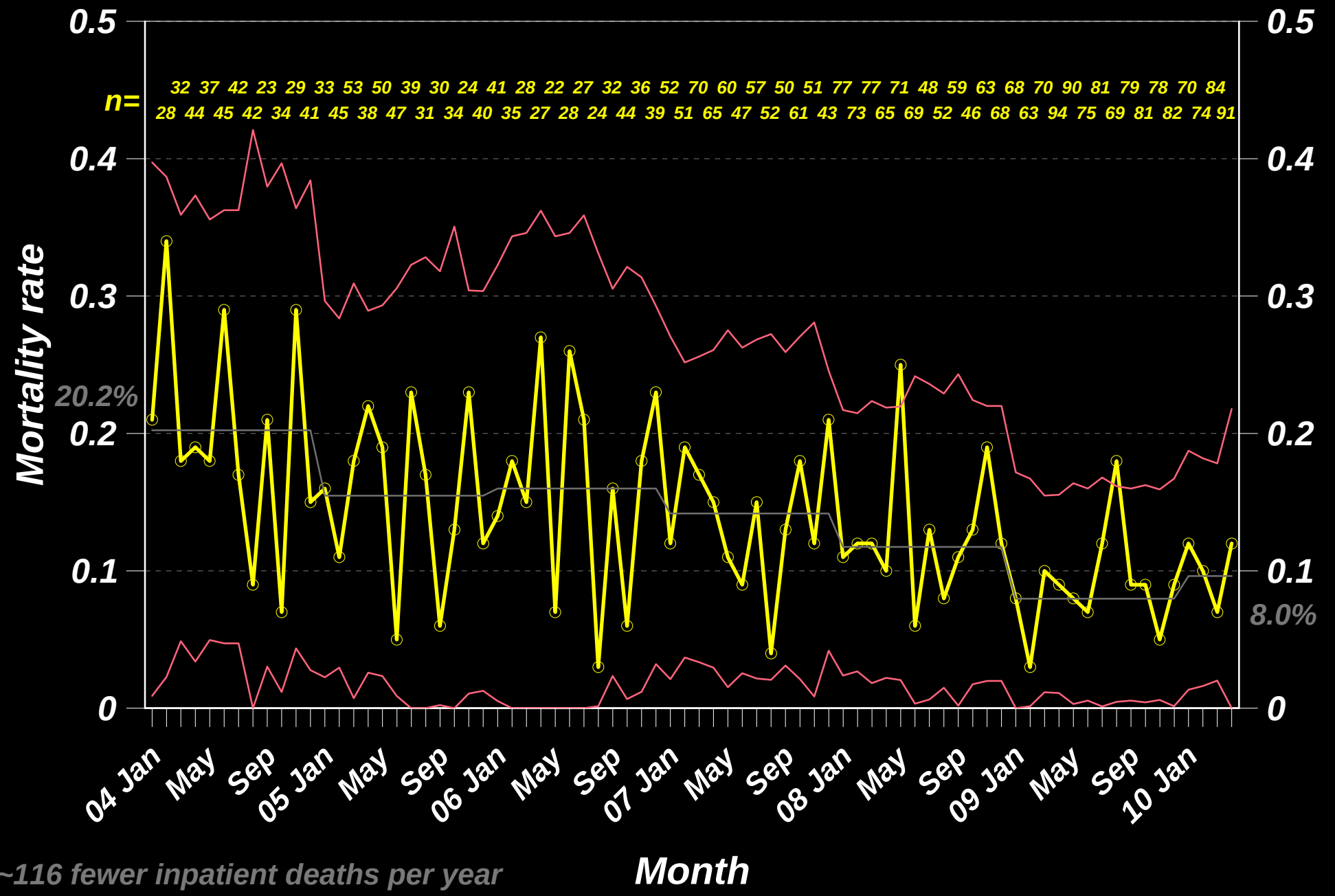
The Learning System, Part 1 *(bundles)*

1. ***Identify a high-priority clinical process*** *(key process analysis)*
2. ***Build an evidence-based best practice protocol*** *(always imperfect: poor evidence, unreliable consensus)*
3. ***Blend it into clinical workflow*** *(don't rely on human memory; make it the lowest energy state, default choice that happens automatically unless someone intervenes)*
4. ***Embed data systems to track*** *(1)* ***protocol variations*** ***and*** *(2)* ***short and long term patient results*** *(intermediate and final clinical, cost, and satisfaction outcomes)*
5. ***Demand that clinicians vary based on patient need***
6. ***Feed data back*** *(variations, outcomes)* ***in a learning loop*** *- continuously update and improve the protocol (including gauge theory)*

Sepsis bundle compliance



Sepsis mortality - ER-ICU transfers



~116 fewer inpatient deaths per year

Lesson 1

We count our successes in lives ...

Lesson 2

Almost always,

better care is cheaper care ...

(through waste elimination)

2. The Learning System, Part 2

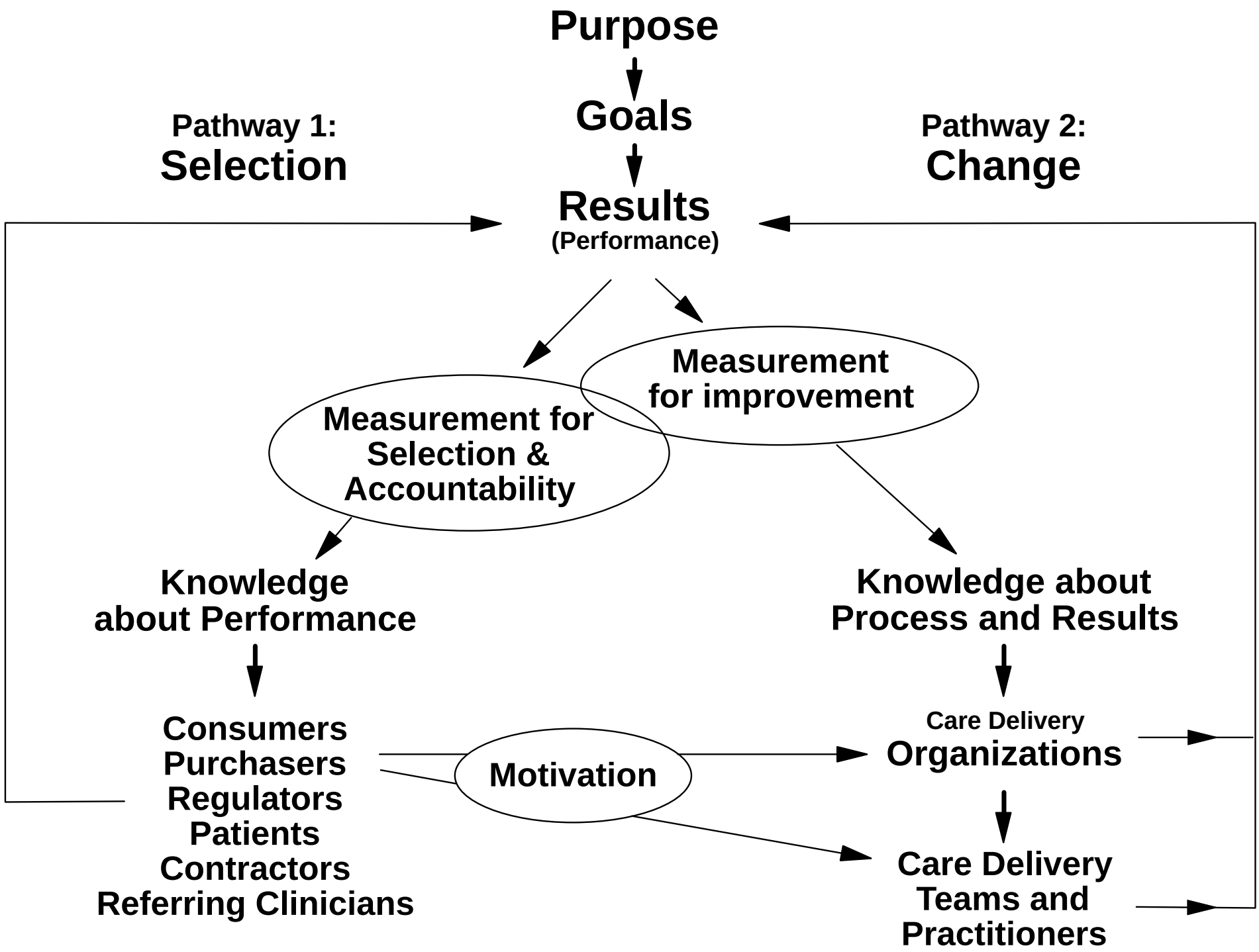
1. ***Build a system to manage care*** *(Part 1)*

2. ***Justify the required required major financail investment on the basis of care delivery performance*** *-- "the best clinical result at the lowest necessary cost"*

3. ***Use the resulting clinical management data system to:***

   (a) Generate true transparency at the clinician-patient level, rolling up to the national level

   (b) "Learn from every patient" - integrate clinical effectiveness research into front-line care



Ref: Berwick, D.M., James, B.C., and Coye, M. The connections between quality measurement and improvement. *Medical Care* 2003; 41(1):I30-39 (Jan).

Measurement for Selection assumes

1. ***Accurate ranking***
   - *sufficient science (identify all the right factors)*
   - *accurate and complete assessment and extraction, often across disperse settings*
   - *high statistical resolution (mathematical problems w ranking)*
   - *appropriate attribution*
   - *defensible methods to combine across individual scores*

2. ***Consumers will respond to the rankings***

3. ***Sufficient "good" system capacity***
   within geographic reach, to handle resulting concentrated volume

4. ***Poor performers will respond with real improvement****, not just "better documentation," risk selection, or resource concentration*

Measurement for Change / Learning

1. ***Generates very different data sets*** *than selection*
   - *strong, evidence-based method derived from RCT data design*
   - *intermediate and final clinical, cost, and satisfaction outcomes*
   - *optimized for process management and improvement*
   - *more extensive, clinically focused than typical Selection Measures*

2. ***Parsimonious*** *(no "recreational data collection"); but* ***avoids availability bias***

3. ***Minimizes burden*** *- integrates into clinical workflow, tends to be what clinical teams must generate to deliver care*

4. ***"Contains" selection measures*** *- includes robust patient outcomes measures suitable for public accountability*

The clinician as a "trusted advisor"

True transparency:

a situation in which those involved in health care choices *(patients, health professionals, payers)* ***have sufficiently accurate, complete, and understandable information about expected clinical results to make wise decisions.***

Such choices involve not just the selection of a health plan, a hospital, or a physician, but also the series of testing and treatment decisions that patients routinely face as they work their way through diagnosis and treatment.

Most clinicians don't know (don't measure, or have easy access to) their own short- and long-term clinical outcome results.
As a result, they cannot accurately advise patients regarding treatment choices.

Organized care *(a.k.a. knowledge management = data)*

How could we create a system that

1. ***Consistently documents "the best medical outcome at the lowest necessary cost"*** *for each patient, under each patient's full, personal, control (eliminates variation, except that arising from patients)*

2. ***Learns from every case***
   - *generates scientifically reliable knowledge from routine practice, quickly filling the 80-90% evidence gap regarding best practice; while empirically validating every new treatment.*

3. ***Creates a life-long "residency training while in practice"***
   - *organization-level capacity to (1) identify critical new knowledge, (2) blend it into daily workflows, (3) package it for rapid learning, and (4) push it out to all who need it - reduce the time for widespread adoption of major new scientific findings from ~17 years to less than 6 months.*

4. ***Generates true transparency***
   - *anytime any clinician says "in my experience" they mean "in my measured experience." Eliminate reliance on subjective recall; make physicians and nurses better counselors as they advise and support patients faced with treatment decisions.*

5. ***Addresses innate clinical complexity***
   - *provide support around critical clinical decisions (Shared Baselines)*

3. Align financial incentives *(eliminate FFS)*

- ***Neonates > 33 weeks gestational age who develop respiratory distress syndrome***
- ***Treat at birth hospital with nasal CPAP** (prevents alveolar collapse), oxygen, +/- surfactant*
- ***Transport to NICU declines from 78% to 18%.***
- ***Financial impact** (NOI; ~110 patients per year; raw $):*

	Before	After	Net
Birth hospital	84,244	553,479	469,235
Transport (staff only)	22,199	- 27,222	- 49,421
Tertiary (NICU) hospital	958,467	209,829	-748,638
Delivery system total	1,064,910	736,086	-328,824
Integrated health plan	900,599	512,120	388,479
Medicaid	652,103	373,735	278,368
Other commerical payers	429,101	223,215	205,886
Payer total	1,981,803	1,109,070	872,733

Current payment mechanisms

- ***Actively incent overutilization:*** *do more, get paid more - even when there is no health benefit*
- ***I am paid to harm my patients*** *(paid more for complications)*
- ***Actively disincents innovation that reduces costs through better quality*** *(a key success factor for the rest of the U.S. economy)*
- ***Very strong, deep, wide evidence showing exactly this effect throughout U.S. healthcare***