

Synchronous Solutions



Springfield Hospital

Synchronous Flow

Flow – Behavior – Change Leadership

Today's Agenda



- Overview
- Synchronous Flow education
 - Variation and Waste
 - Interdependencies
 - Capacity (Productive and Protective)
 - Inventory
- Mapping
- Kaizen
- Review

Overview



- Why are we doing Synchronous Flow?
- What, exactly, is SF and how will SF be applied at Springfield Hospital?
- What are our goals?

Overview



So, exactly why are we together here today?

“Medical treatment has made **astonishing advances** over the years. But the **packaging and delivery** of the treatment are often **inefficient, ineffective and customer unfriendly.**”

Harvard Business Review 2005

Why we're doing this together...



We are here to focus on the packaging and delivery of the astonishing things that you do.

Synchronous Flow

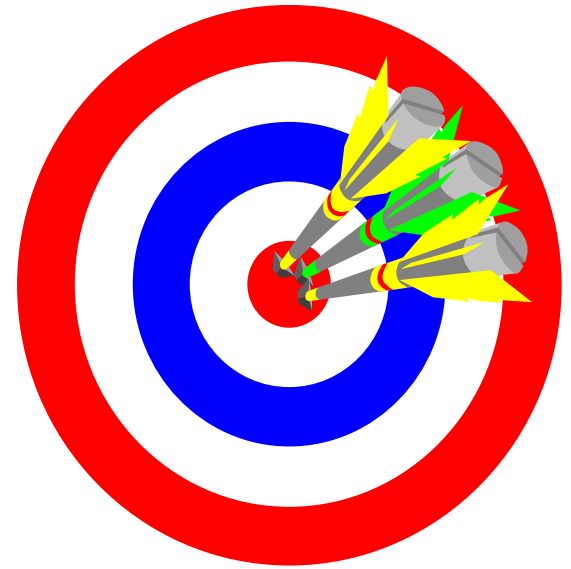


- What is it?
 - Constraint Management (TOC)
 - Lean (TPS)
 - 6 Sigma (TQM)
- Where is it applied?
 - Profit
 - Not for profit
 - Service
 - Manufacturing
- Single most positive virtue: Focus

SF: 5 Focusing Steps

Three Necessary Conditions

- Define the system.
- State the system's **purpose**.
- Decide how to **measure** the system.



Five Focusing Steps

1. **Select** the system's constraint(s).
2. Decide how to **exploit** the system's constraint(s).
3. **Subordinate** everything else to the above decisions.
4. **Elevate** the system's constraint.
5. Do not allow **inertia** to become the system's constraint. When a constraint is broken, **return** to step one.

A Constraint is...



Anything that limits an organization's higher performance relative to its goals

- Can be internal or external
- Can be a process, a policy or a paradigm.

The Control Point is...

- The location within the scope of the system on which we *choose* to focus
- The point upon which operational measures are based
- Ideally, the only point in the system that is scheduled.

A Bottleneck is...



- A temporary limitation caused by Murphy
- The effect is an intolerable situation
- Something that we want to defeat quickly
- Something we respond to with urgency
 - **Prioritized** according to the relative threat to the Control Point.

Essence of SF

Status: Non-Constraint **Constraint** Non-Constraint

Capacity:



I determine how many patients you can treat



Behaviors:

Subordinate

- Maximize the Constraint
- Work effectively
- Don't starve
- Don't slow
- Don't reduce
- Protective capacity
- Minimize expense

Maximize

- Work effectively
- Available
- Key skills
- Productivity
- Offload
- Contain

Subordinate

If you want to treat more patients in less time, focus your activities here.

Springfield Hospital's Goals



The Goals are:

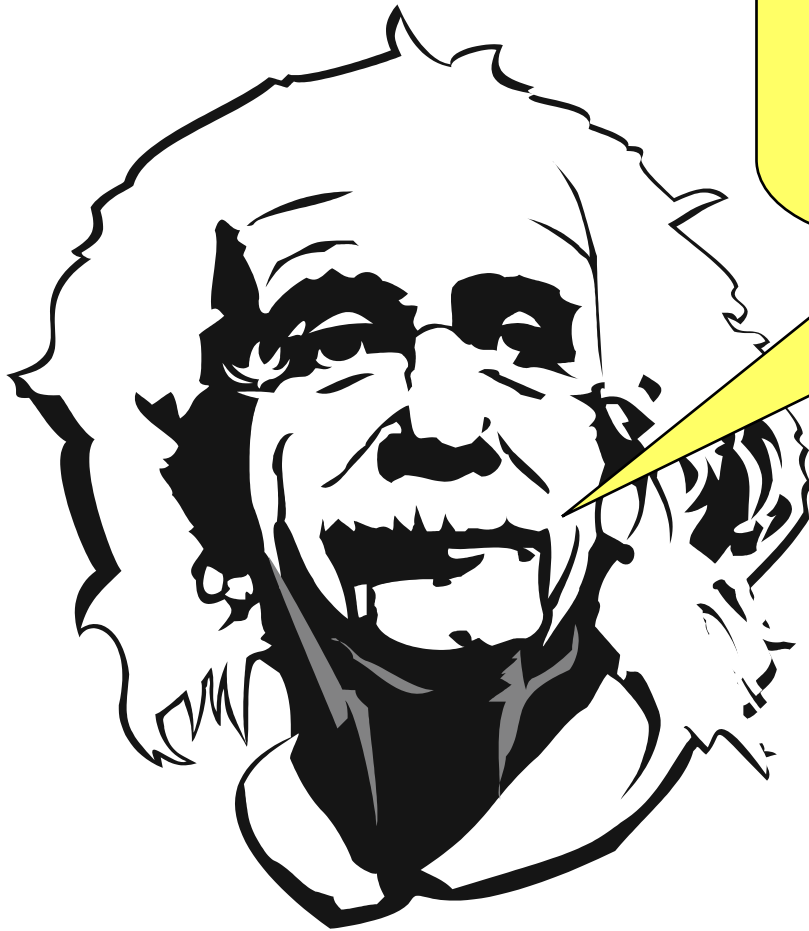
- Provide safe and quality medical care
- Ensure that we operate in a fiscally responsible manner

Basic Metrics are:

- Patient volume
- Patient velocity

Goal Visualization





**A problem cannot be
solved by the
consciousness that
created it.**

The Eureka Hospital



Our Goal...

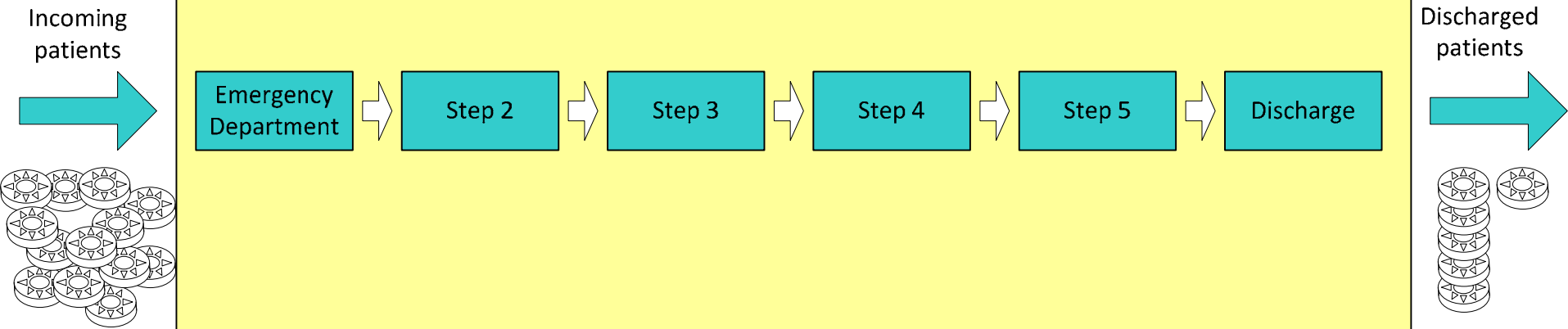
To provide the finest medical care possible.

We will focus on:

- Efficiency**
- Effectiveness**
- Friendly patient service**

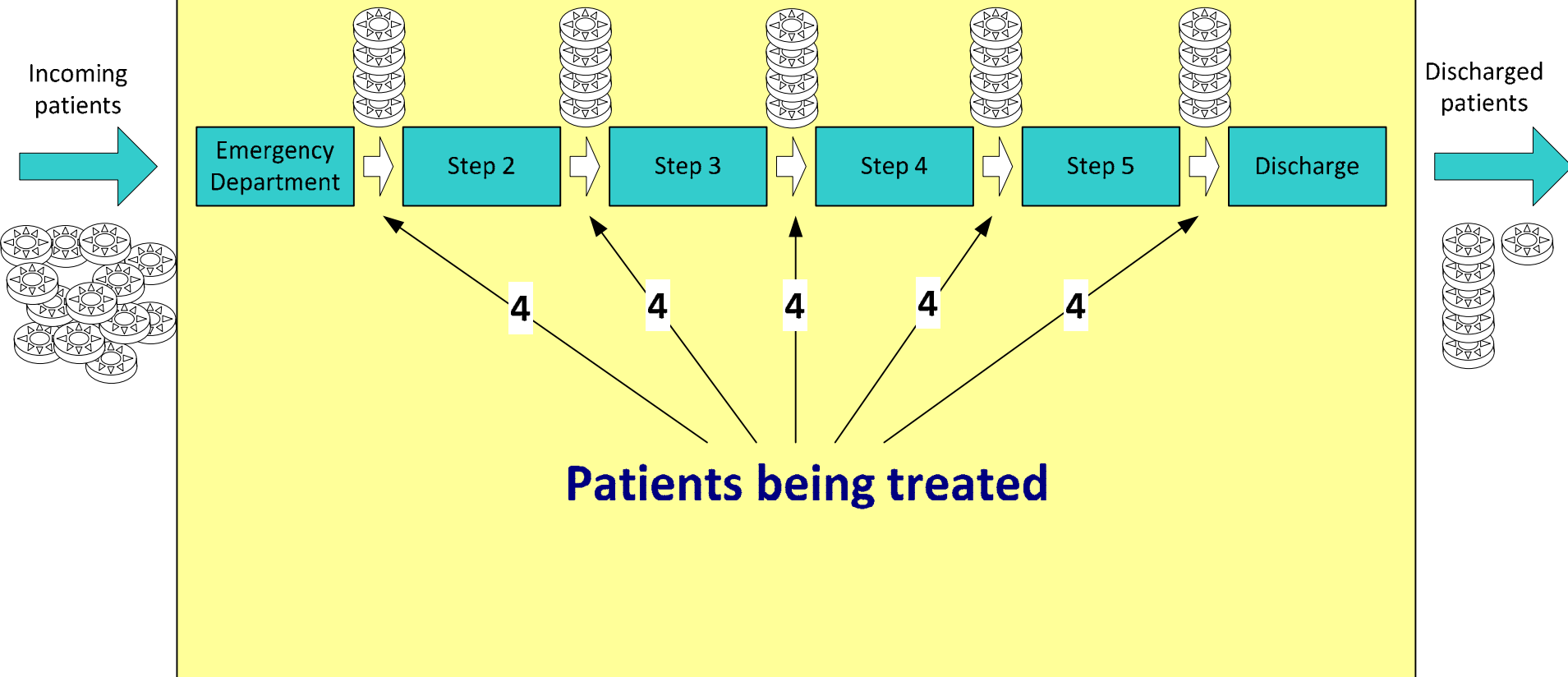
Setup 1

The Eureka System



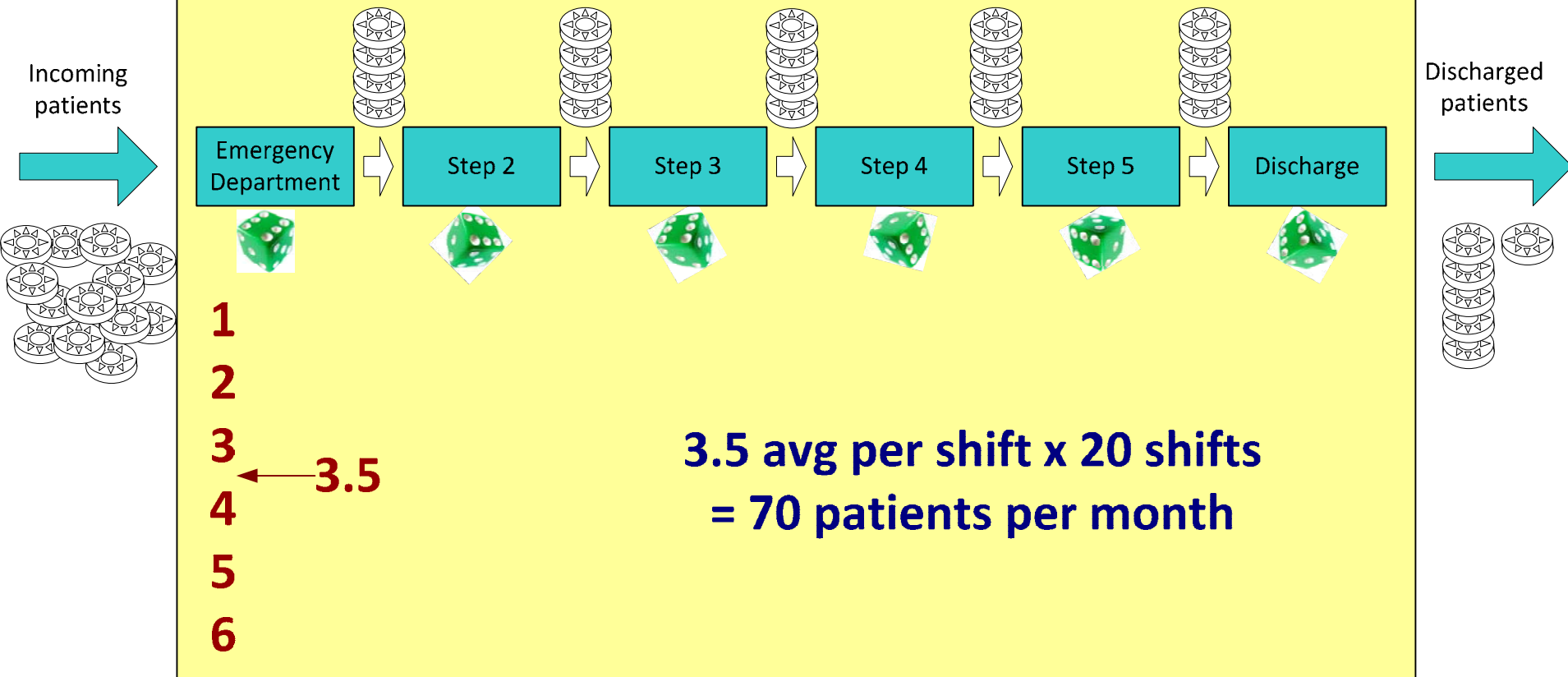
Setup 2

The Eureka System



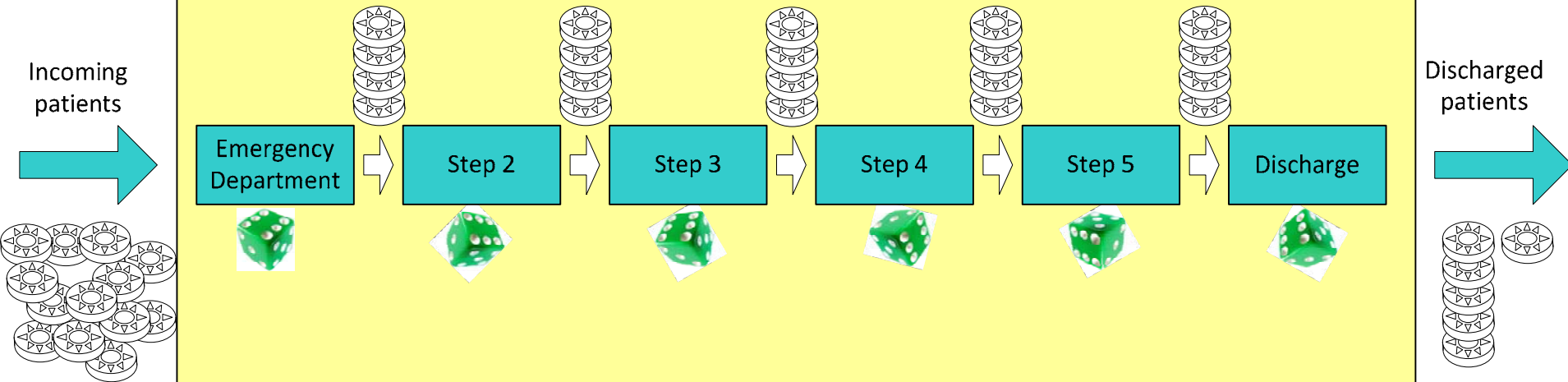
Setup 3

The Eureka System



Setup 4

The Eureka System



You may not begin the next treatment until the previous treatment is completed.

Data: Patients Treated



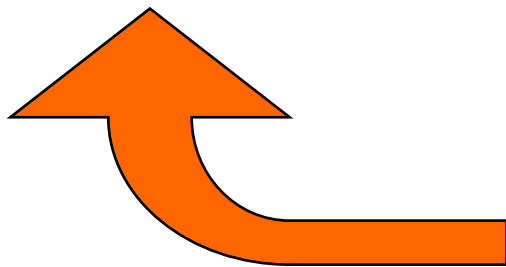
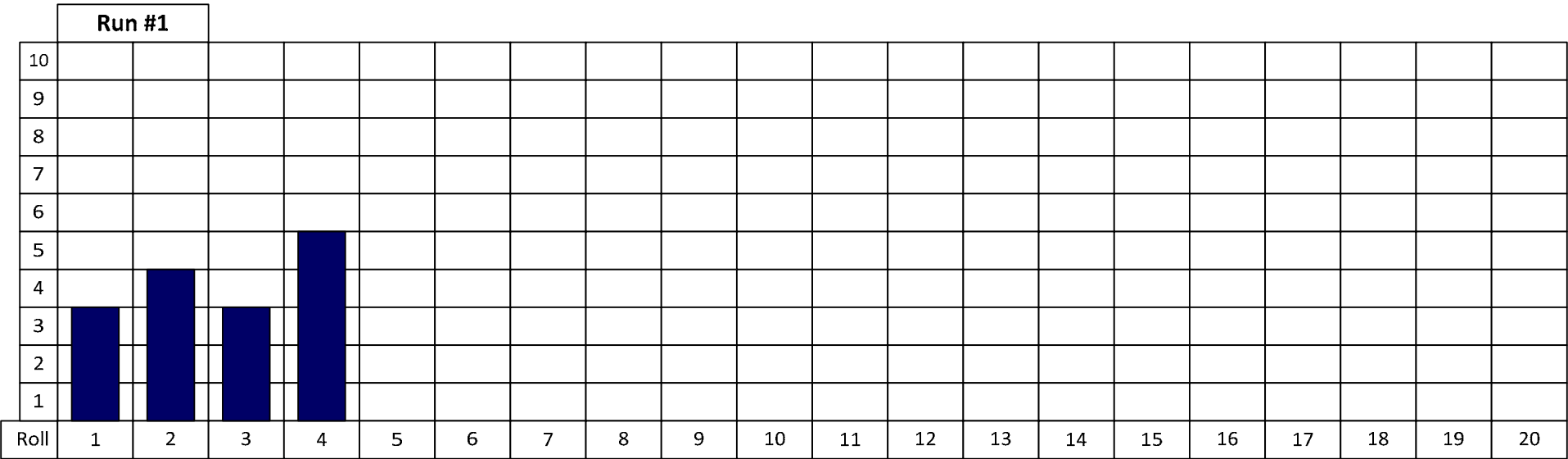
Data

What you actually move

What you roll

Run #1	Run #2	Run #3	Run #4	Run #5
Roll 1	Roll 1	Roll 1	Roll 1	Roll 1
Roll 2	Roll 2	Roll 2	Roll 2	Roll 2
Roll 3	Roll 3	Roll 3	Roll 3	Roll 3
Roll 4	Roll 4	Roll 4	Roll 4	Roll 4
Roll 5	Roll 5	Roll 5	Roll 5	Roll 5
Roll 6	Roll 6	Roll 6	Roll 6	Roll 6
Roll 7	Roll 7	Roll 7	Roll 7	Roll 7
Roll 8	Roll 8	Roll 8	Roll 8	Roll 8
Roll 9	Roll 9	Roll 9	Roll 9	Roll 9
Roll 10	Roll 10	Roll 10	Roll 10	Roll 10
Roll 11	Roll 11	Roll 11	Roll 11	Roll 11
Roll 12	Roll 12	Roll 12	Roll 12	Roll 12
Roll 13	Roll 13	Roll 13	Roll 13	Roll 13
Roll 14	Roll 14	Roll 14	Roll 14	Roll 14
Roll 15	Roll 15	Roll 15	Roll 15	Roll 15
Roll 16	Roll 16	Roll 16	Roll 16	Roll 16
Roll 17	Roll 17	Roll 17	Roll 17	Roll 17
Roll 18	Roll 18	Roll 18	Roll 18	Roll 18
Roll 19	Roll 19	Roll 19	Roll 19	Roll 19
Roll 20	Roll 20	Roll 20	Roll 20	Roll 20
Total	Total	Total	Total	Total
Avg.	Avg.	Avg.	Avg.	Avg.

Data: Patients Discharged



Patients discharged on each day

Run 1



We'll discover the effects of:

- Variation (we need to talk...later)
- Interdependent resources
- System inventory (exactly what is yours?)
- Capacity (what are the types of capacity and what can we **realistically** do?)



Run

1

Run 2



**Variation and Dependency interact
and**

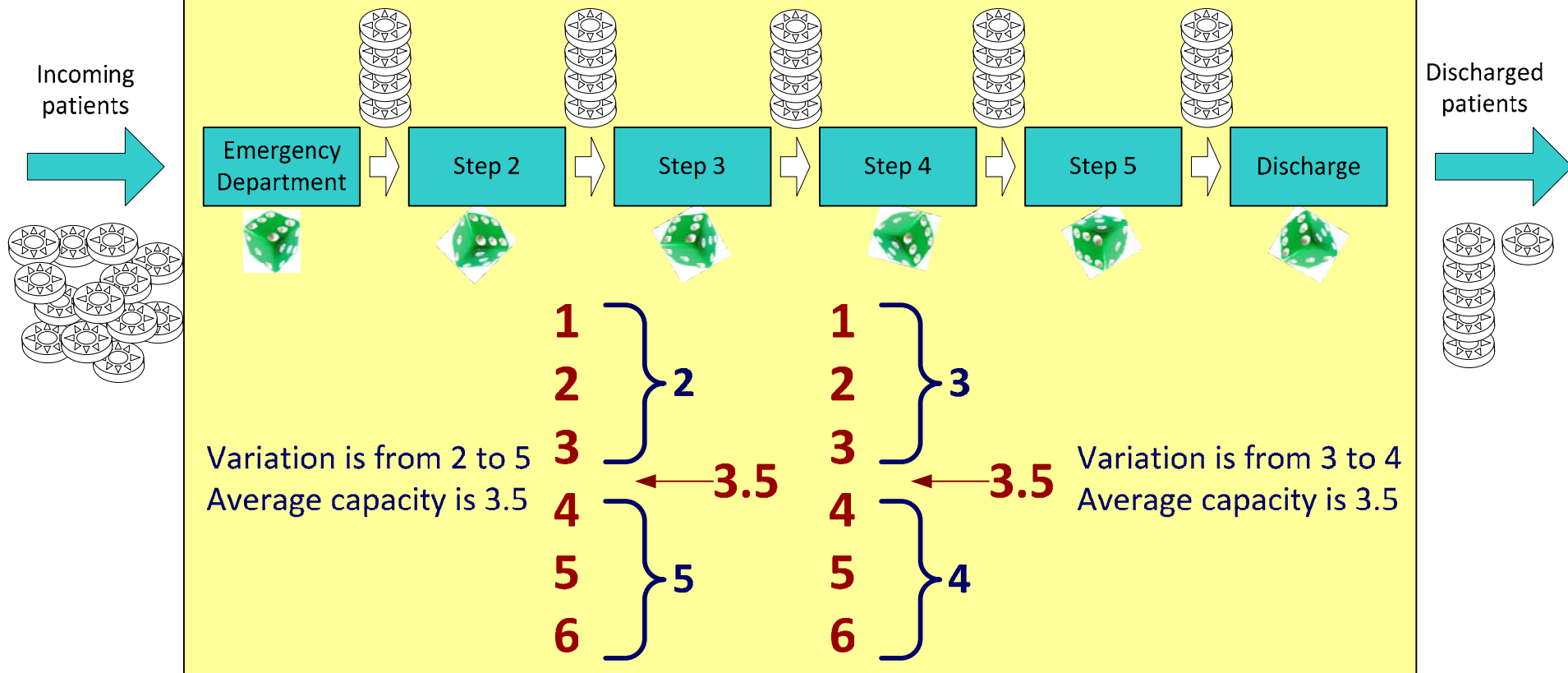
Variation effectively diminishes Throughput

We can improve hospital throughput (the number of patients discharged) by:

- Reducing **variation** through the systematic elimination of its causes
- Reducing **dependency** through the use of **Protective Capacity** and **offloading** the constrained resource

Variation

The Eureka System





Run

2

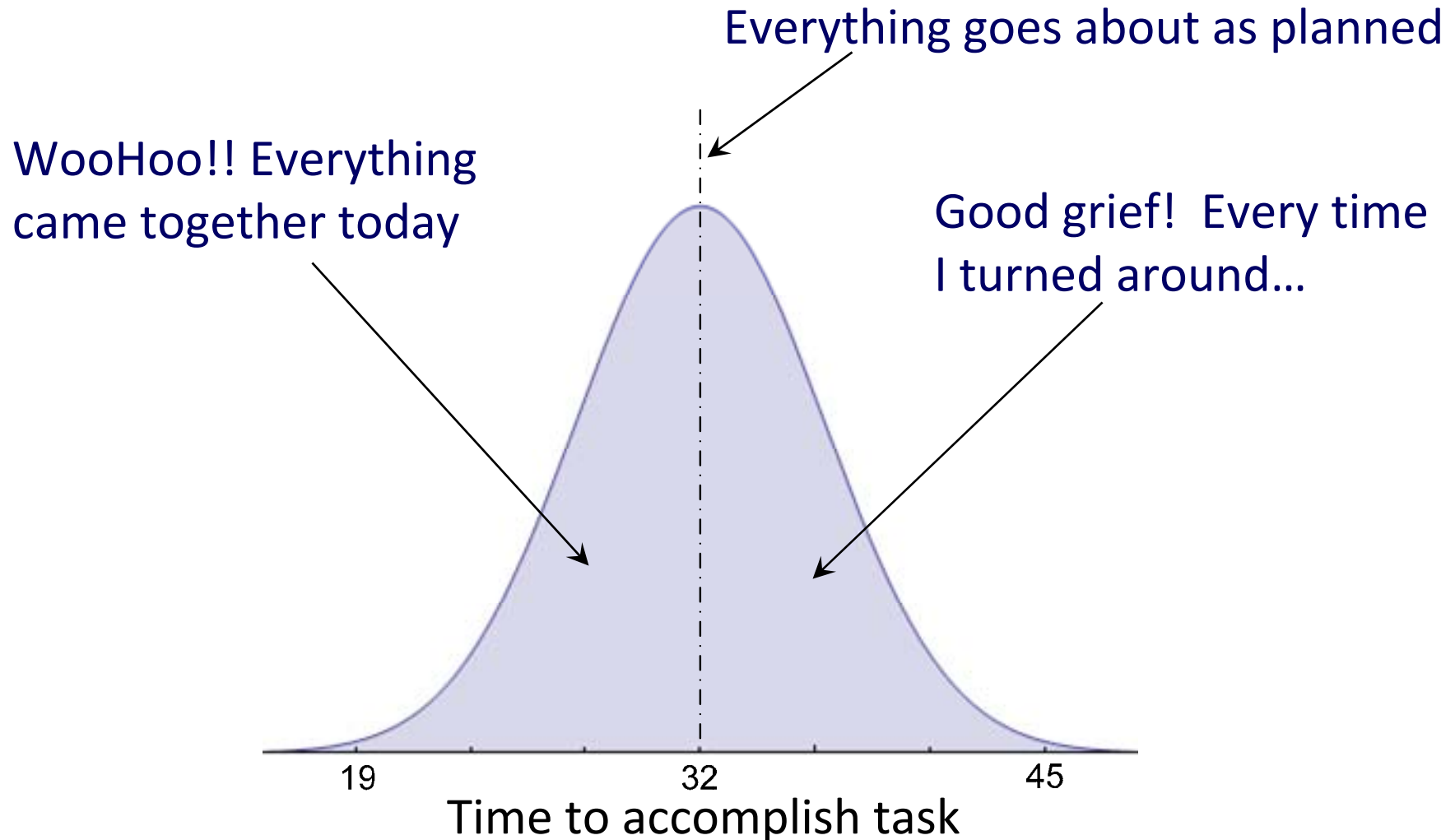
Regarding Variation...



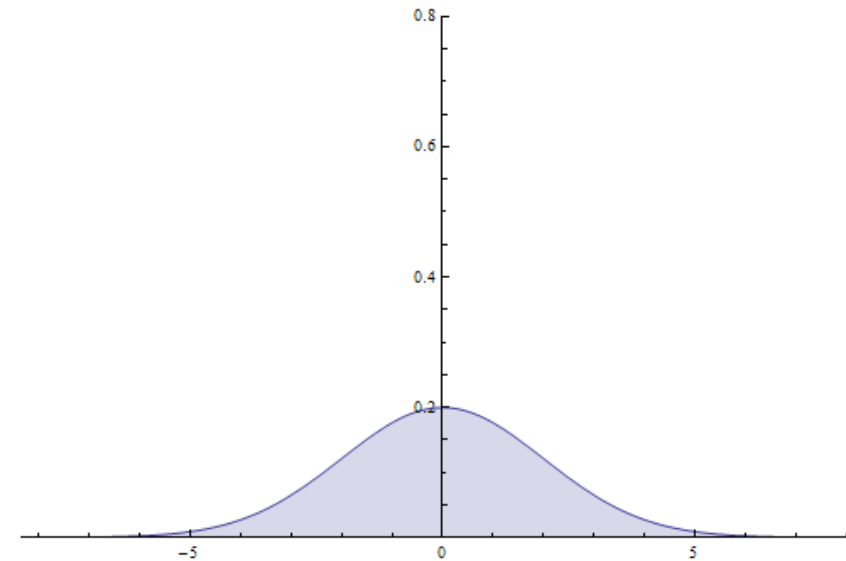
We live and die by averages.

Tom Crawford

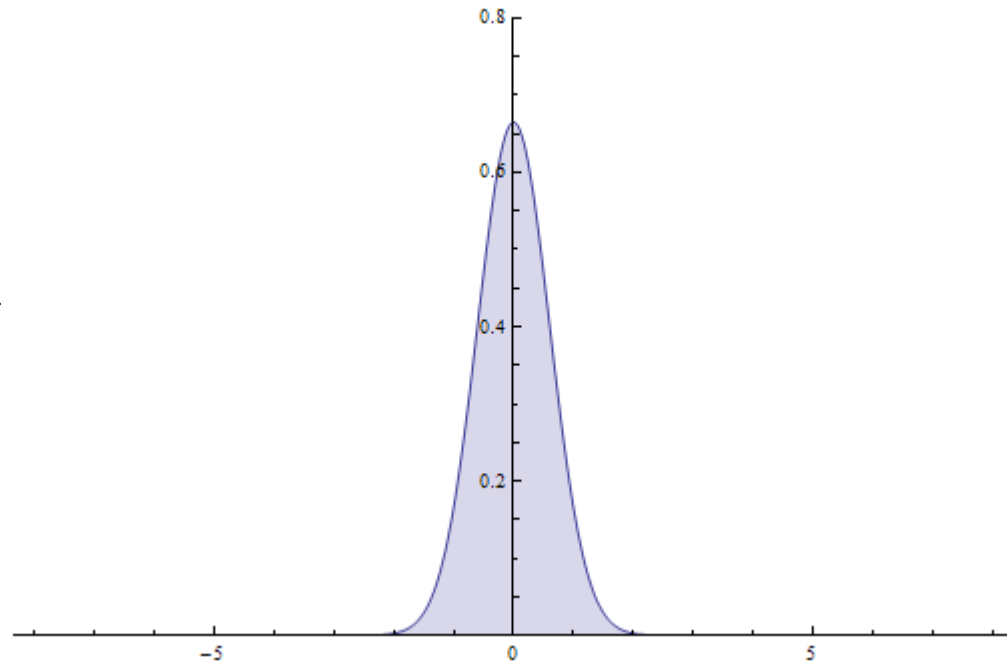
Variation...what is it?



Variation...how much do we have?



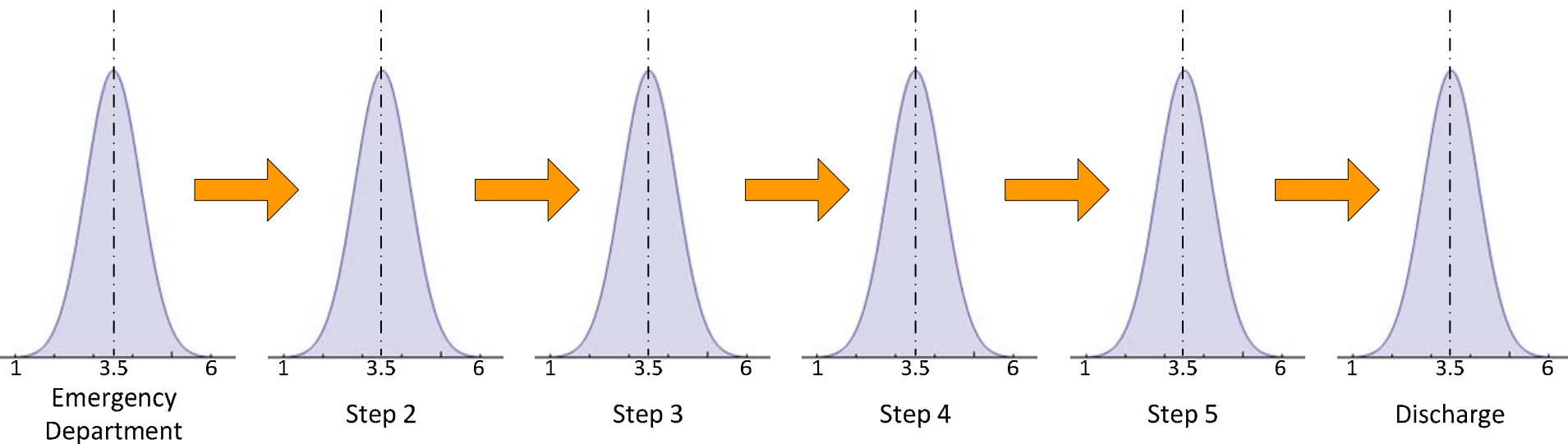
Large deviation from average



Small deviation from average

Variation...how it affects you

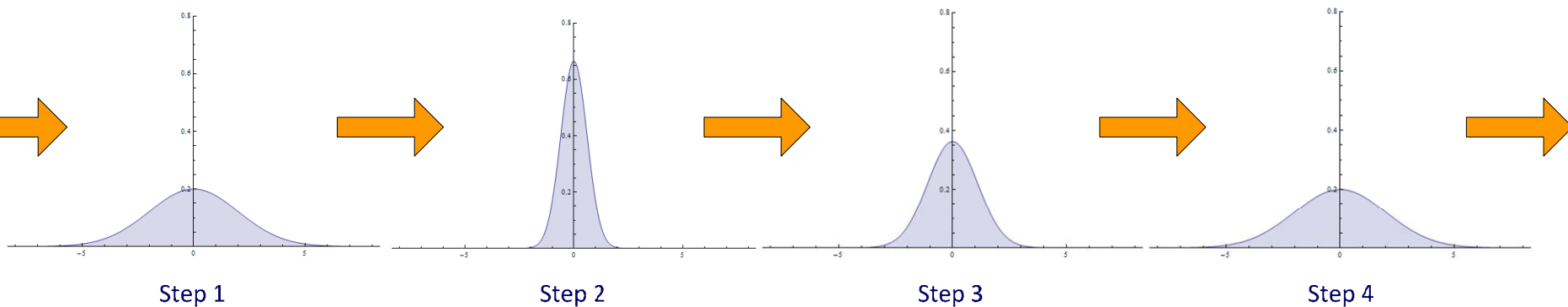
In the dice game...



Each step has a known, and similar, deviation from average.
It's significant, but it's known.

Variation...how it affects you

In your real world...



Each step has an unknown, probably dissimilar, deviation from average. It may be significant – maybe not. We might not even know what “average” is.

Variation...its origins



- Waste
 - Release more than we need
 - Time
 - Skill
 - Transportation and handling
 - Excess inventory
 - In the process itself
 - Useless motions (ergonomics)
 - Scrap and defects
- Non-Standard Work
 - Everyone does “it” differently
 - There is no standard (“it” isn’t even defined”)
 - There’s a standard but no one really follows it
 - There’s no way to determine if a “waste” was caused by an action
 - There are no feedback loops

Variation...what to do about it?

Synchronous Flow

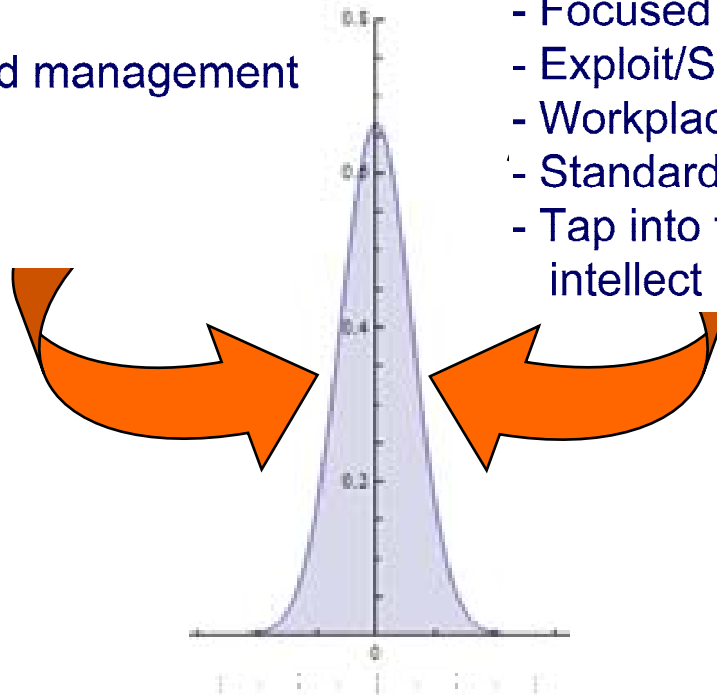
Address the process:

- The altered consciousness
- System understanding
- Daily process review and management
- The “Huddle” meeting
- Feedback mechanisms
- Control loops

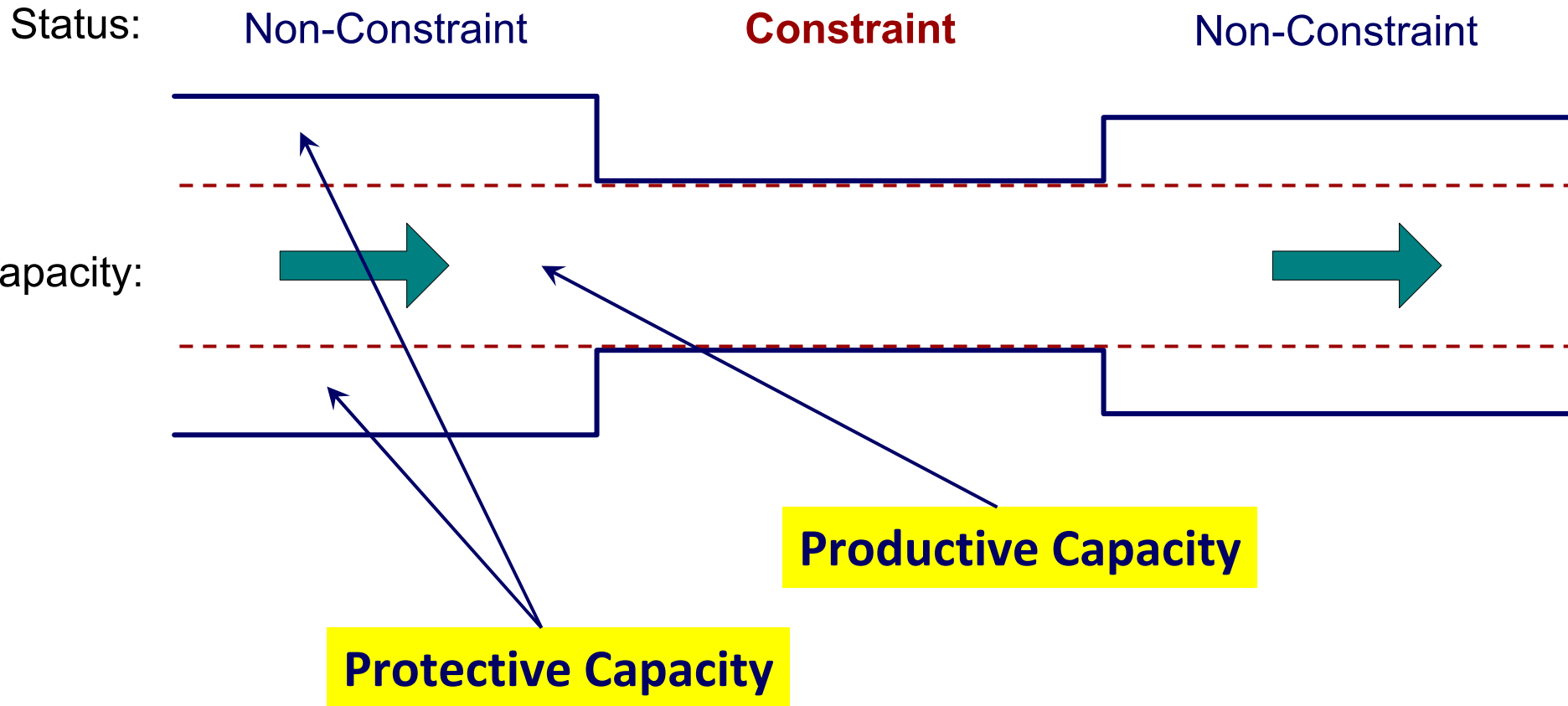
Kaizen Events

Address specific problems systematically:

- Systems perspective
- Focused activity
- Exploit/Subordinate/Elevate events
- Workplace design
- Standard work
- Tap into the system’s distributed intellect

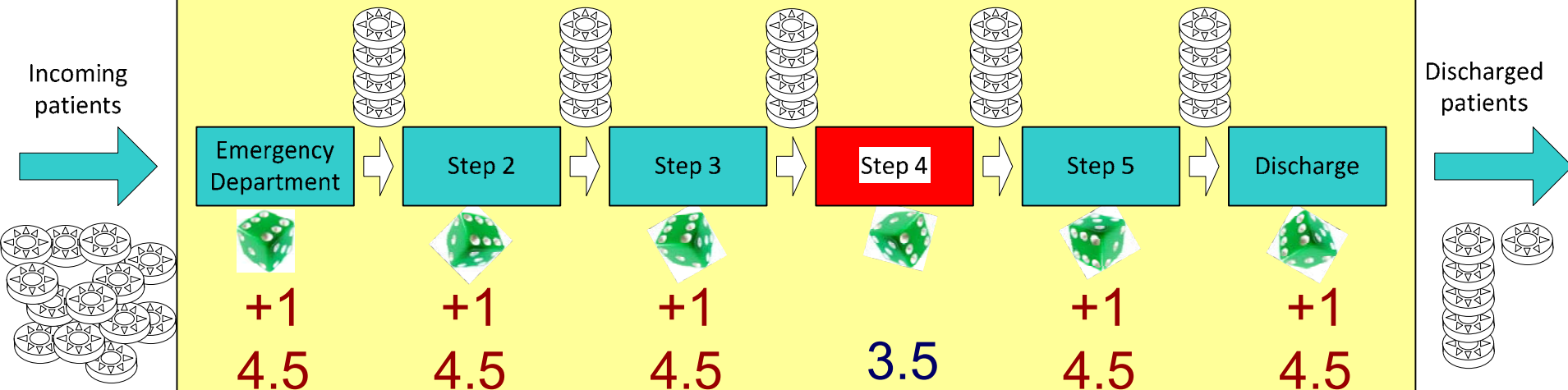


Protective Capacity



Decoupling Dependency

The Eureka System



- Select a constraint resource
- Assign protective capacity to the other resources



Run

3

Protective Capacity...where is yours?



- What do we have to know first?
- Our experience has proven to us that the constrained resource, no matter what type of system we find it in, spends a **whole lot** of time doing things it isn't intended to do.

Do not allow your most precious resource to spend its time doing non-precious work.

Protective Capacity...



...HAS to exist in all non-constrained resources. If that isn't the case, you have a balanced system. And, a very difficult professional life.

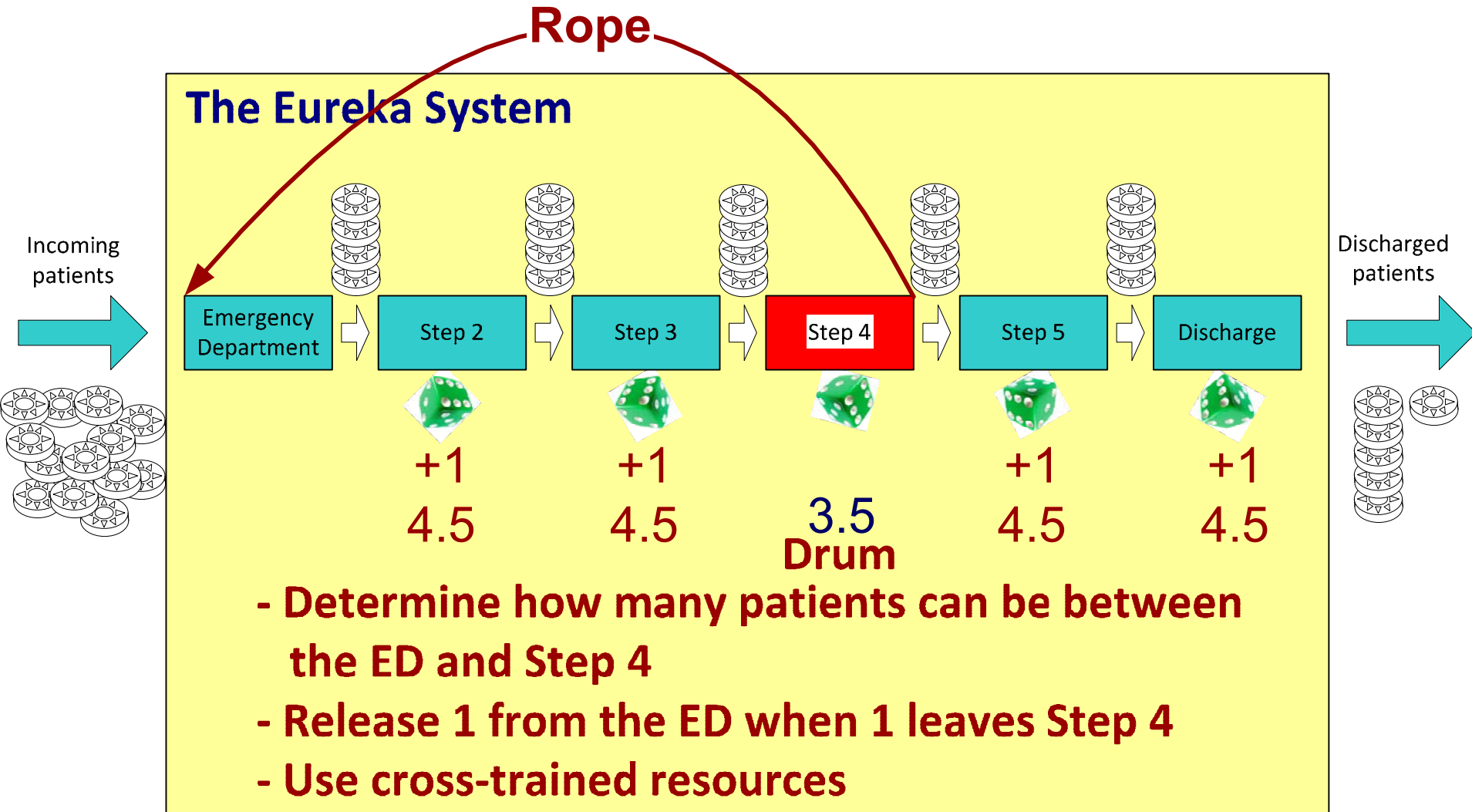
If it isn't abundantly clear that you have some, we have to apply the SF and Kaizen principles to your system and get some.

What about Inventory?



The washbasin

Synchronous Flow





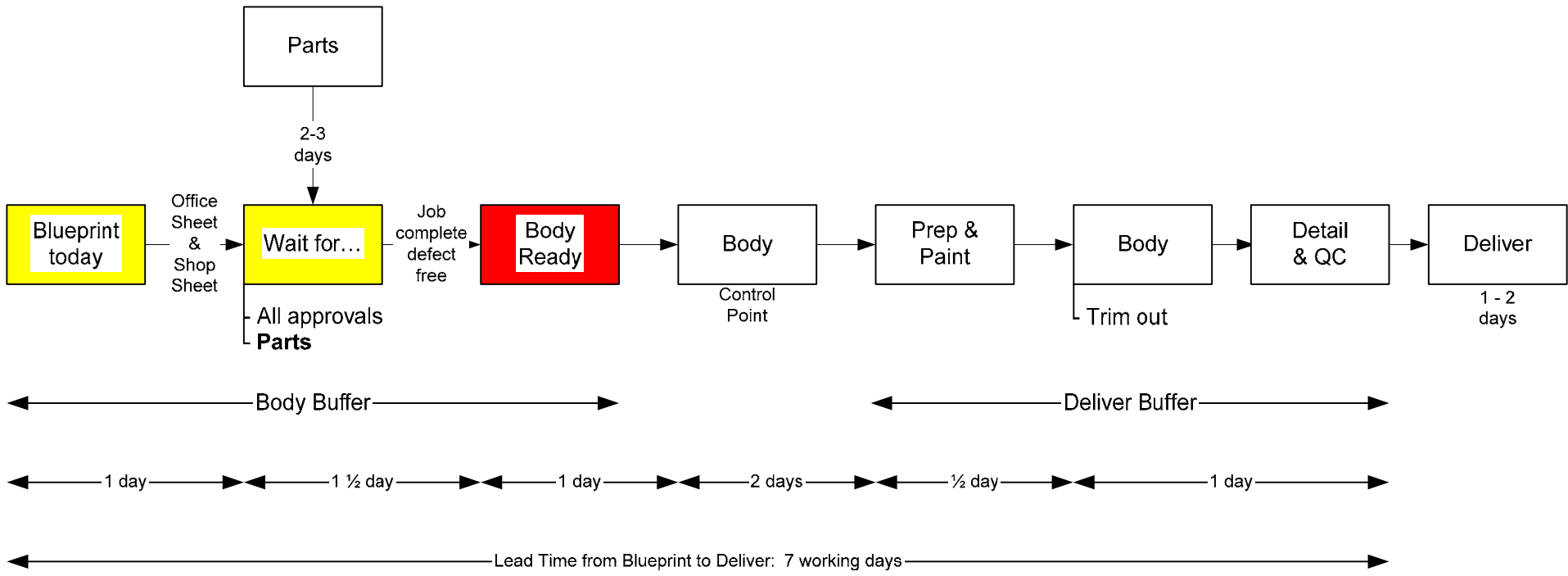
Run

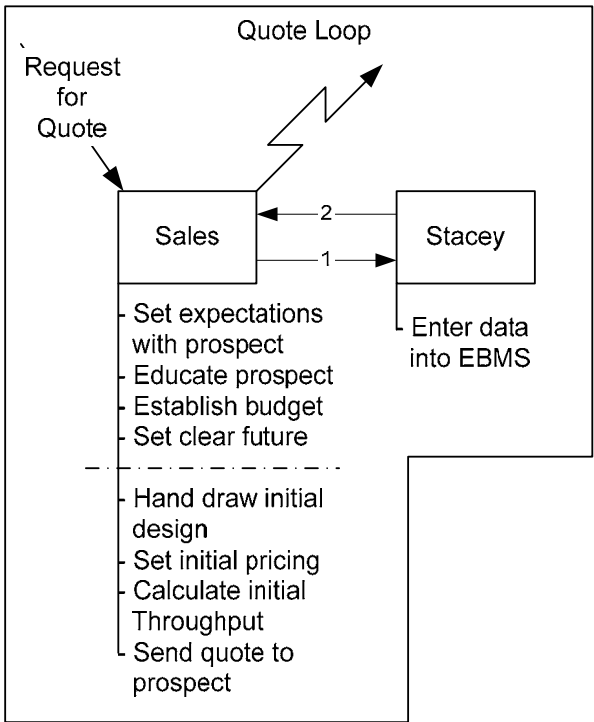
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System mapping

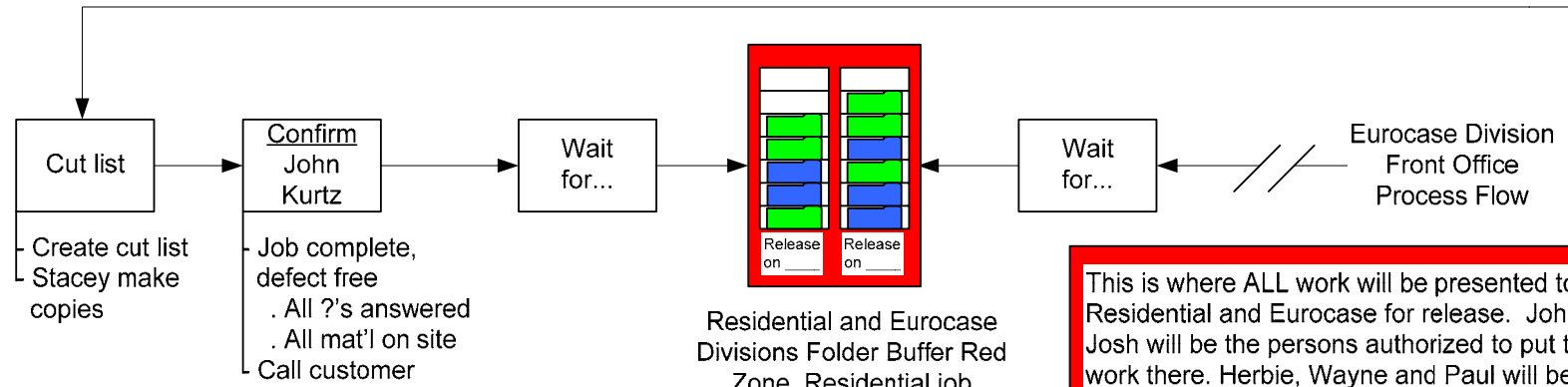
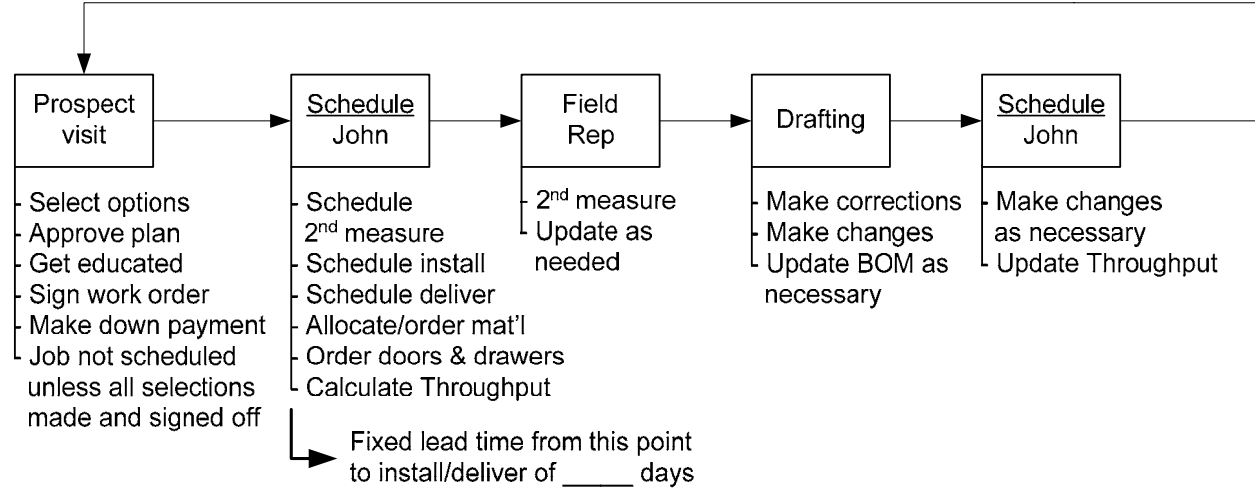
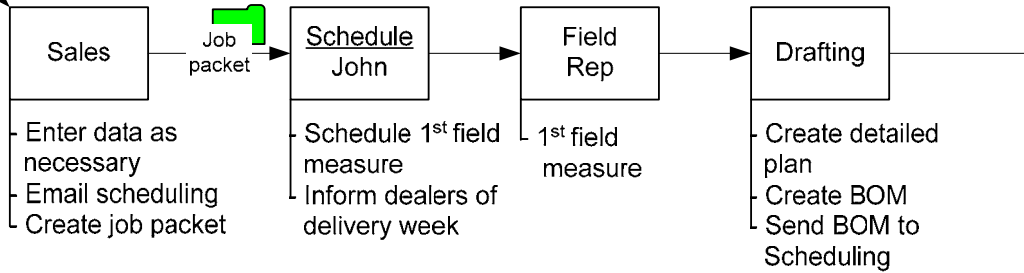


- Mapping is the laying out of a system's **processes** in a structured, visual context
- Detail? Just enough to answer the question(s) you're asking
- Two examples...





ALL Residential orders



This is where ALL work will be presented to Residential and Eurocase for release. John and Josh will be the persons authorized to put the work there. Herbie, Wayne and Paul will be the persons authorized to take it out and release it into fabrication. This includes doors, drawers, countertops and any other specialty item.

Kaizen 1



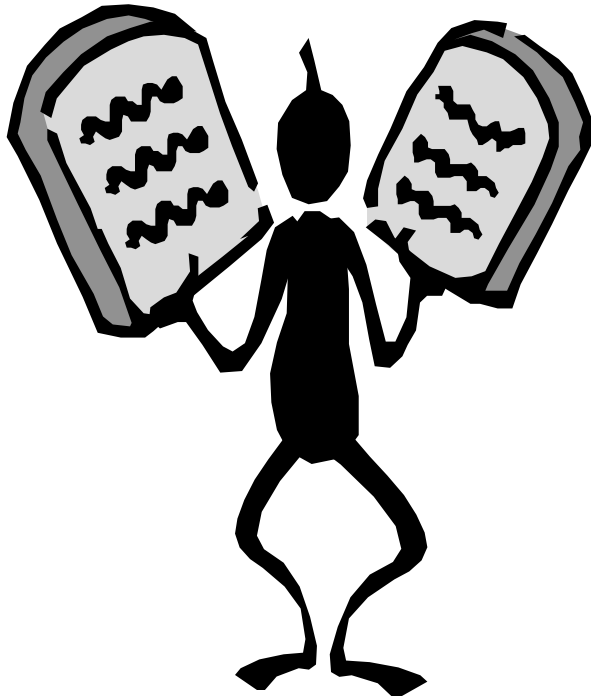
- What is it?
 - Relatively short term **event** (not long-term projects)
 - *Ad hoc* team(s)
 - Specific start and stop times
 - Specific deliverable(s)
 - Unique
 - Usually local
 - If done correctly,
 - Highly effective
 - Fun
- Several can be engaged in parallel
 - May or may not be mutually supporting
 - May or may not have intertwined resources

Kaizen 2



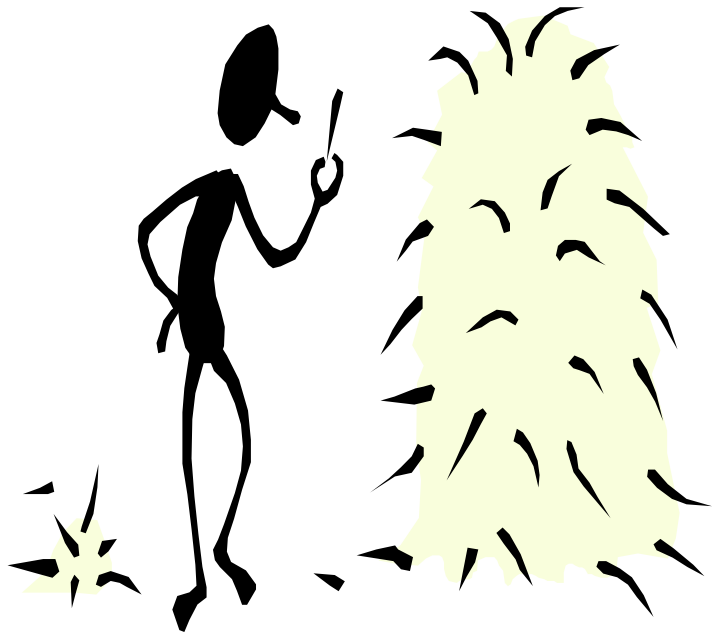
- The PCSAM model
 - Problem/opportunity identified
 - **Core** causes confirmed and documented
 - Solution and plan of action developed
 - Aggressive action applied (3 to 5 days, typically)
 - Measurements tracked to assure success
- This keeps us from jumping to solution from problem – a guaranteed recipe for failure

Remember!



- Common practices lead to balanced capacity.
- Balanced capacity systems are unstable and under-productive.
- Unbalanced capacity systems are stable, with increased velocity and predictability.
- Constraints hold the key to focusing improvement activities.

Remember!



- Protective capacity
- Buffering
- Metered material release

...all share in creating and maintaining synchronous flow



Review