

MANAGING COMPLEX SYSTEMS

The Health and Social Care Environment

**Achieving a sustainable breakthrough in
performance across health and social care systems**



THE THEORY OF CONSTRAINTS

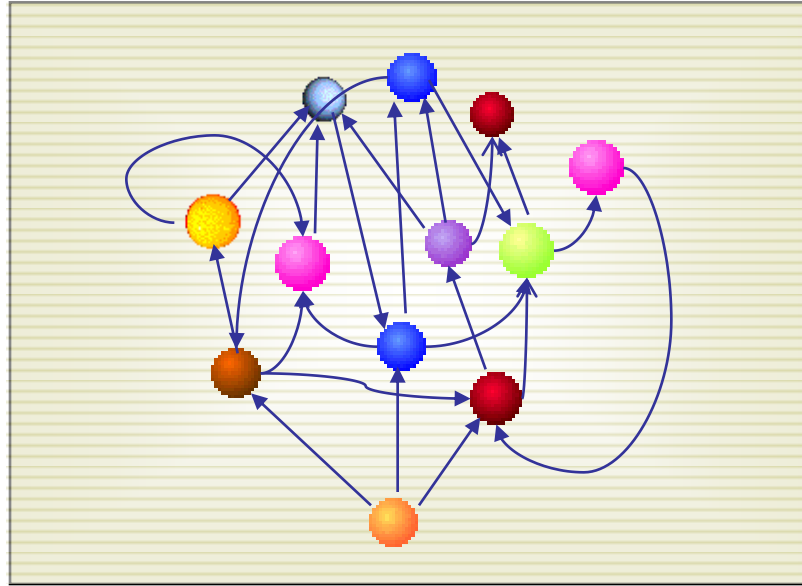
THE STARTING POINT

**Any complex system is
based on inherent simplicity**



What is meant by inherent simplicity?

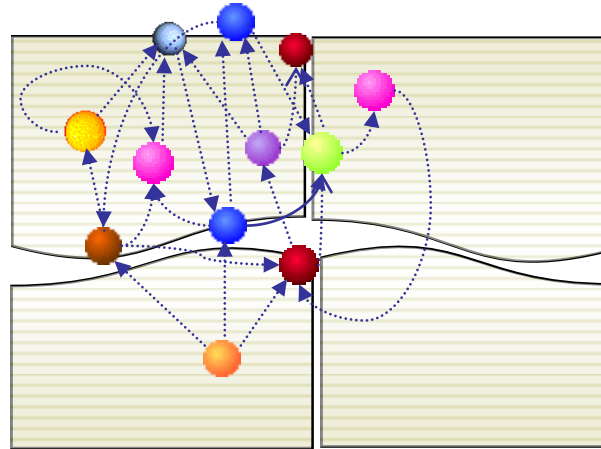
INHERENT SIMPLICITY



This system seems quite complex.

How much does it resemble the system you work in?

The common way to deal with complex system is to dissect it into sub-systems: trying to manage each function in isolation.

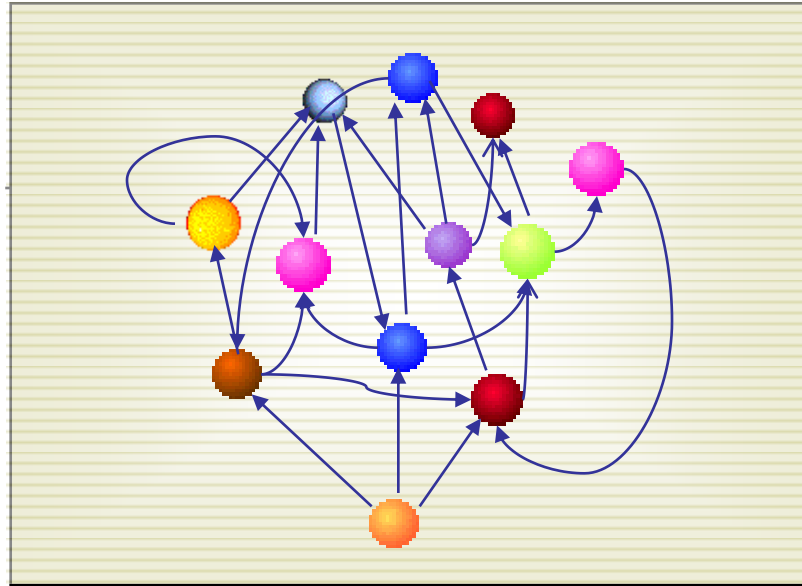


What are the drawbacks?

Miss-synchronization, silo mentality, local optima conflicts to name a few.

LOCAL OPTIMUM DOES NOT ADD UP TO GLOBAL OPTIMA

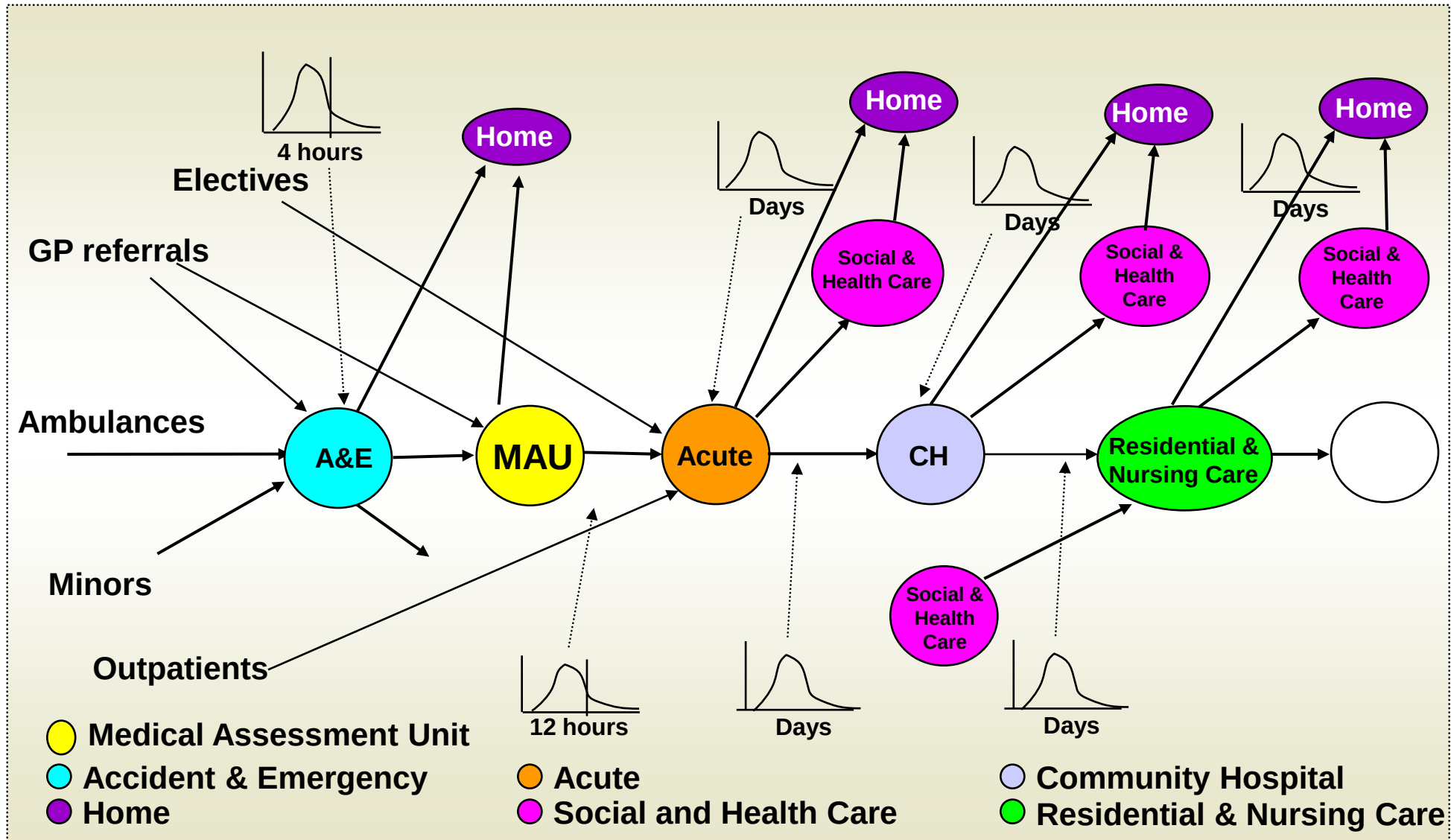
INHERENT SIMPLICITY



**Very Few Factors Govern The
Performance Of The System!**

Theory Of Constraints recognizes this as
the inherent simplicity of the system.

HEALTH AND SOCIAL CARE SYSTEM – A Complex System



Very Few Factors Govern the Performance of The System!

GOVERNING ELEMENT = CONSTRAINT = LEVERAGE POINT

If this is true then what is the process that will enable us to turn the few leverage points into a quantum improvement for the system as a whole?



THE THEORY OF CONSTRAINTS

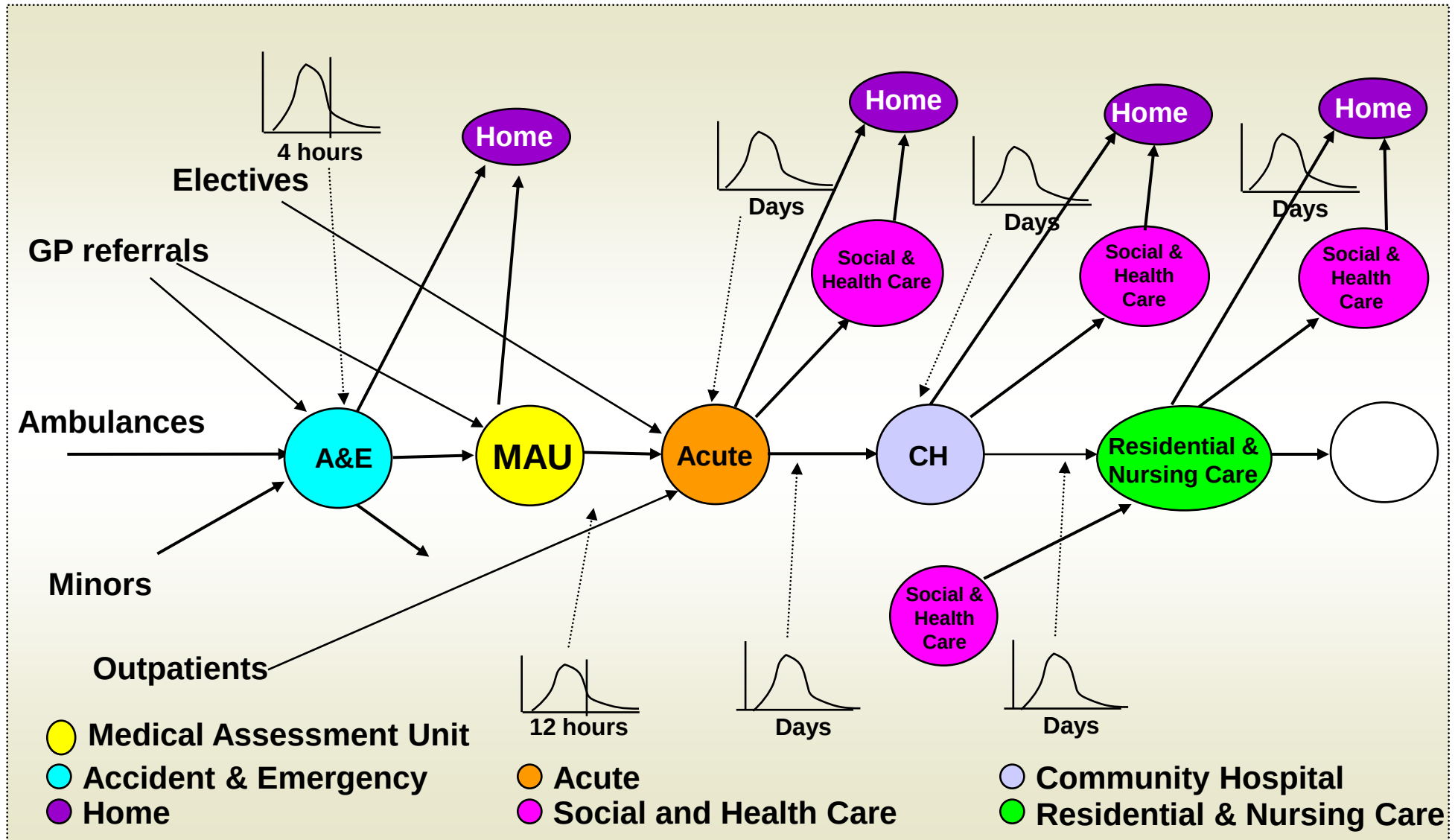
Capitalizing on the Inherent simplicity of the system:

THE FIVE FOCUSING STEPS

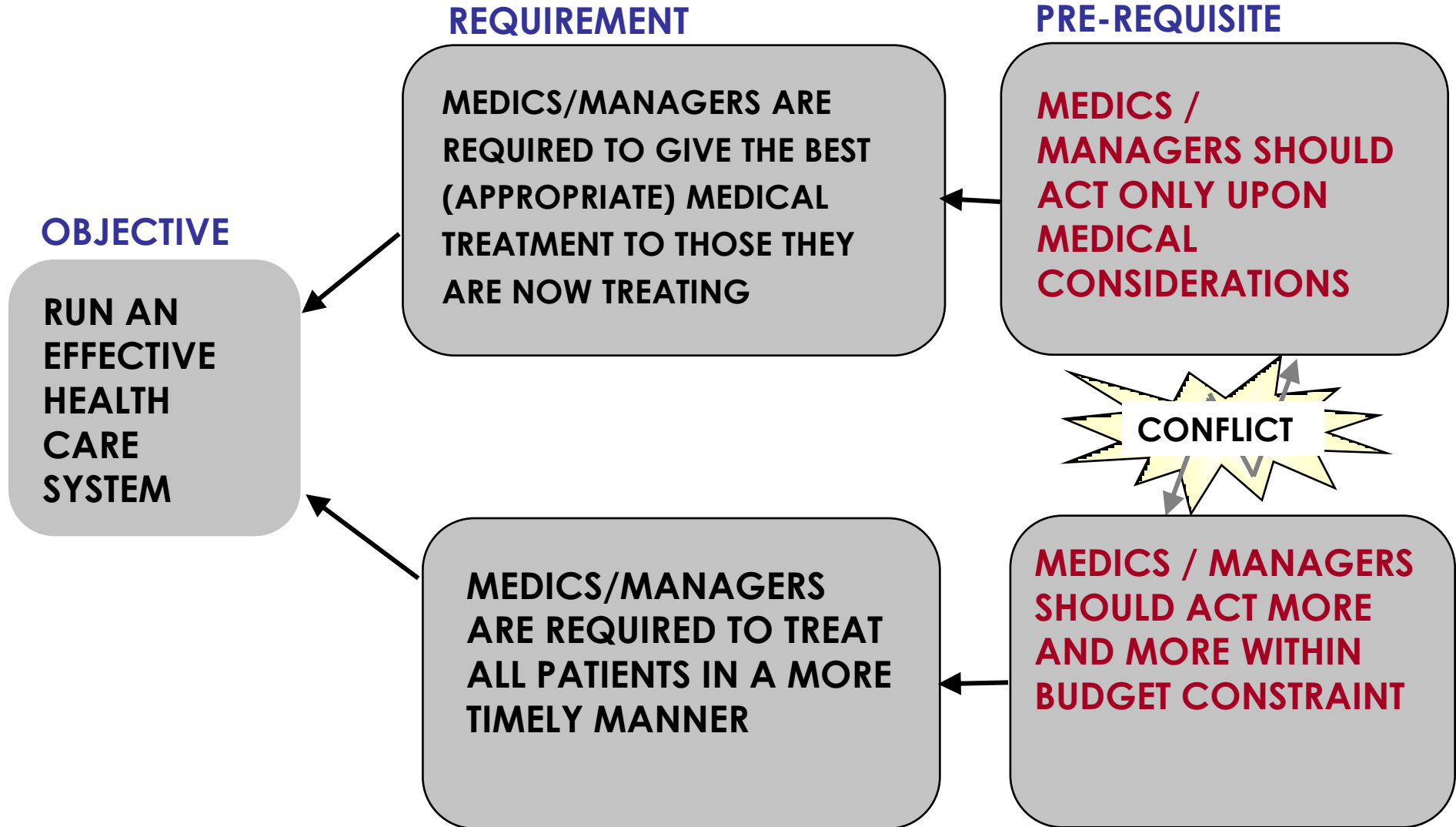


- Step 1:** Identify the system's constraint(s)
- Step 2:** Decide how to exploit the system's constraint(s)
- Step 3:** Subordinate everything else to the above decision
- Step 4:** Elevate the system's constraint(s)
- Step 5:** If in the previous steps a constraint has been broken go back to step 1. Warning: Don't allow inertia to cause a system constraint(s)

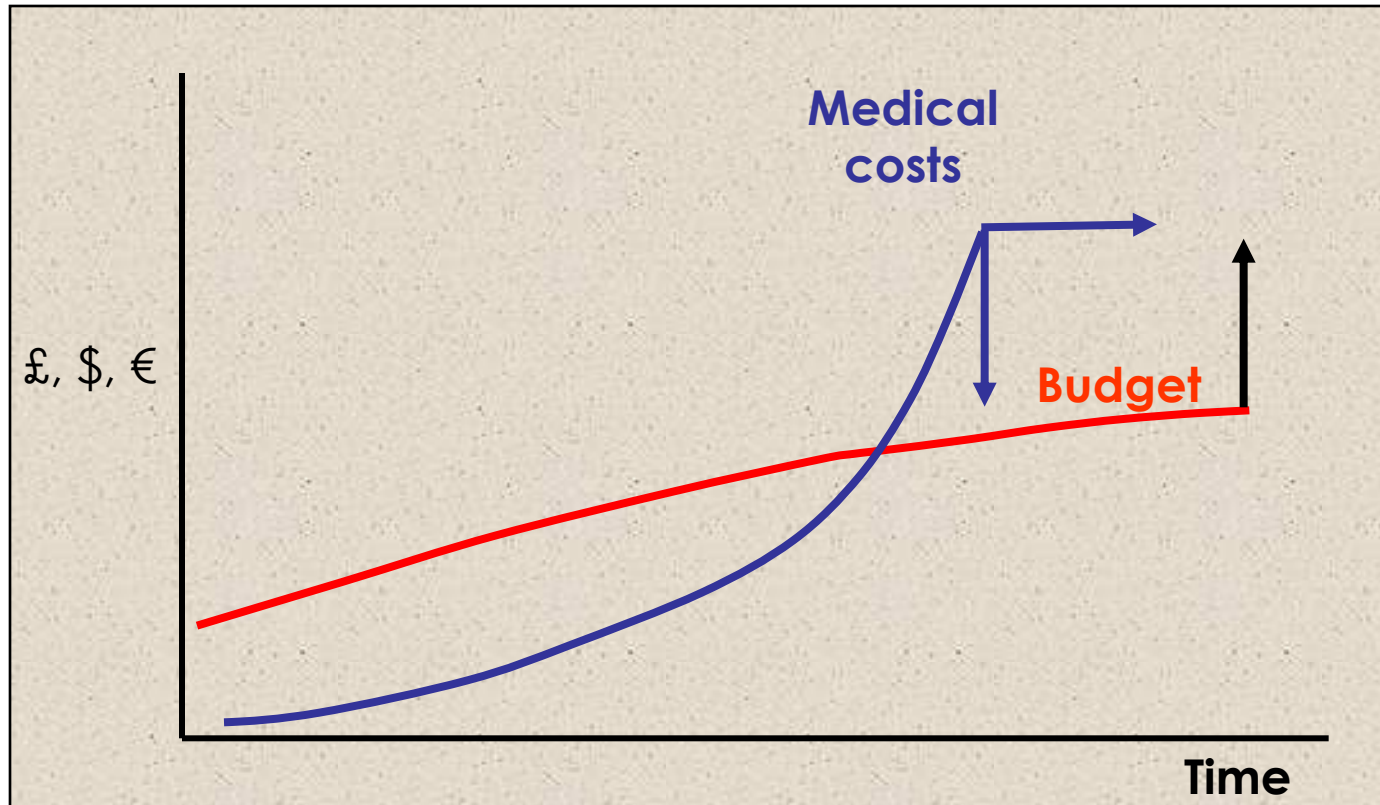
HEALTH AND SOCIAL CARE SYSTEM – Is there a constraint?



AN EVER PRESSING CORE PROBLEM...

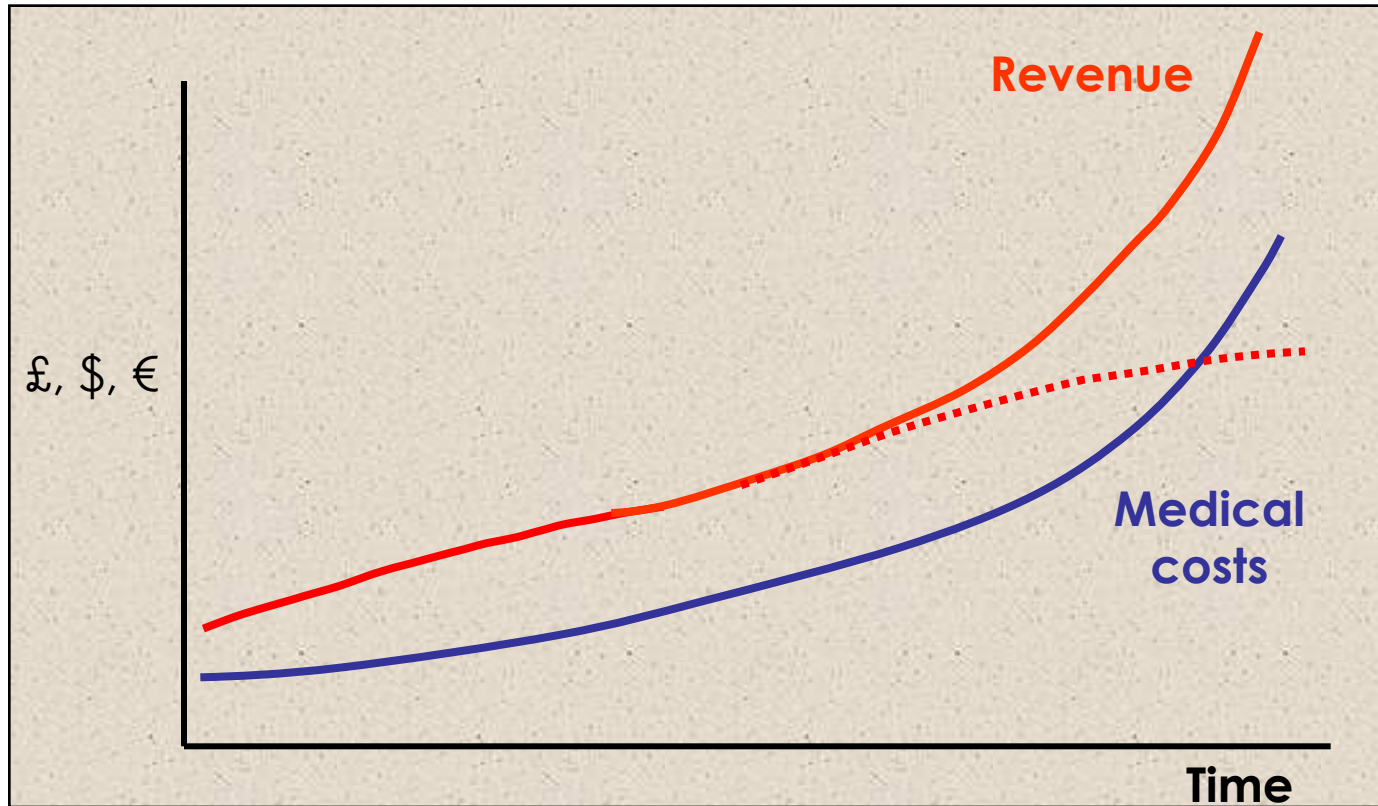


WHY DO WE FEEL THAT THE PROBLEM IS INTENSIFYING?



The cost of medical treatment increases rapidly in comparison to growth of the available budget

WHAT IS A TRUE BREAKTHROUGH?



**The REVENUE increases FASTER than
the growth in MEDICAL COSTS**

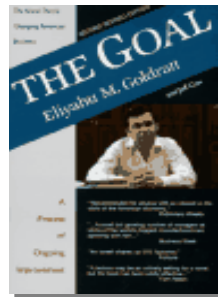
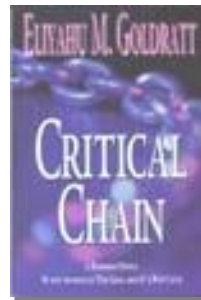
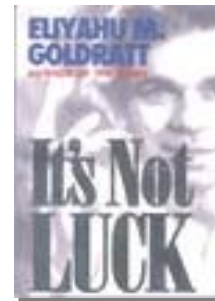
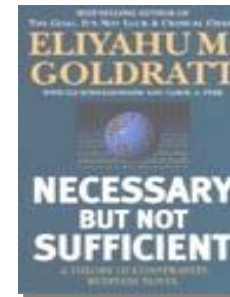
ADDITIONAL CRITERIA FOR JUDGING ANY PROPOSAL

Any solution must immediately:

- ✓ Improve the quality and timeliness of patient care.
- ✓ Be focused on achieving a true breakthrough in performance without demanding additional resources before an increase in revenue.
- ✓ Gain the commitment of people who have already been trying to solve the problem.
- ✓ Not put excessive demands on a number of already stretched resources.
- ✓ Achieve sustained and ongoing operational and financial improvement.



The Theory of Constraints, developed by Dr Eli Goldratt and described in his famous novels, focuses on achieving breakthroughs in performance in large, complex environments, dominated by high uncertainty.



1 Achieving a breakthrough in Healthcare

Achieve Consensus

2:1

A logic and Evidence Based Approach to Achieving Consensus

Operational Breakthroughs

2:2

Unprecedented Improvement in Quality and Timeliness of Care

Market Breakthroughs

2:3

Revenue Grows Faster than any Increase in Medical Costs

Sustainable Leadership

2:4

Leading Through Changes in Paradigm

MANAGING COMPLEX SYSTEMS

The Health and Social Care Environment

APPLYING THE THEORY OF CONSTRAINTS
TO HEALTH AND SOCIAL CARE SYSTEMS



PRESENTATION OUTLINE

Section 1: Application for Accident and Emergency arena

Section 2: Application for discharge process from both the acute and community sectors



Section 1: Application for Accident and Emergency arena

1.1 Summary of results

1.2 The Application:

Dynamic Buffer Management



Section 1: Application for Accident and
Emergency arena



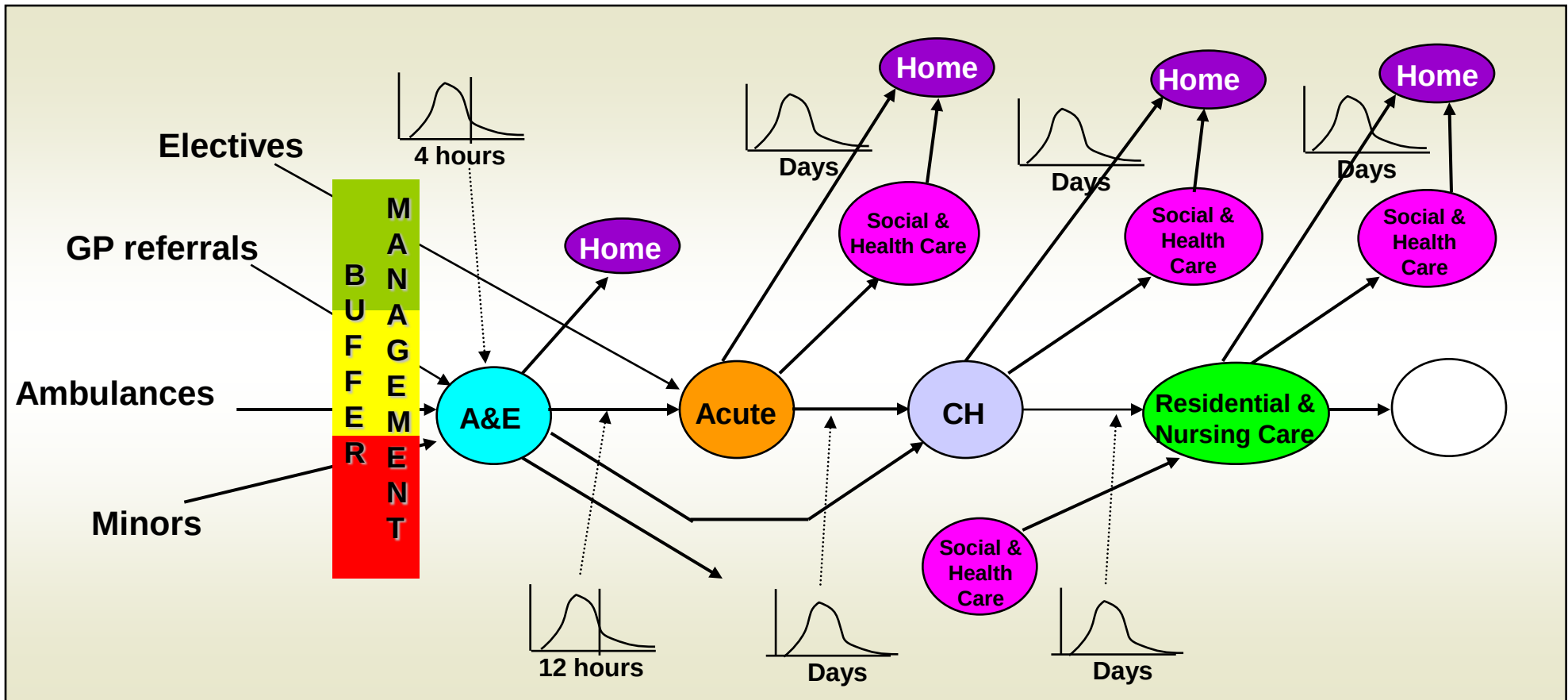
RESULTS

APPLICATION FOR THE ACCIDENT AND EMERGENCY ARENA



Meeting the prime measurement of patients:

1. Discharged from A&E < 4 hours
2. Delayed admissions (trolley waits) > 12 hours

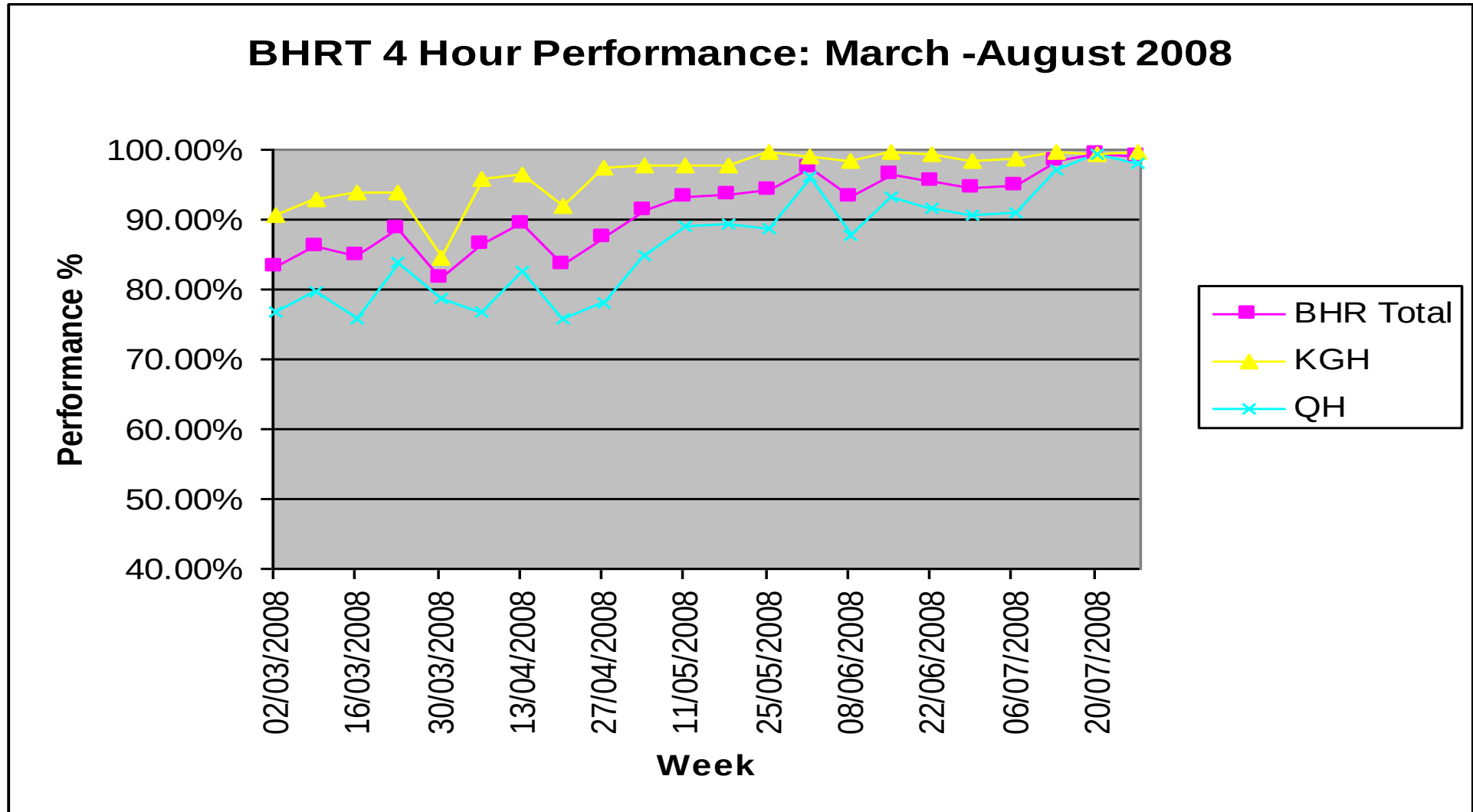


Barking Havering and Redbridge Trust (BHRT)

March – August 2008

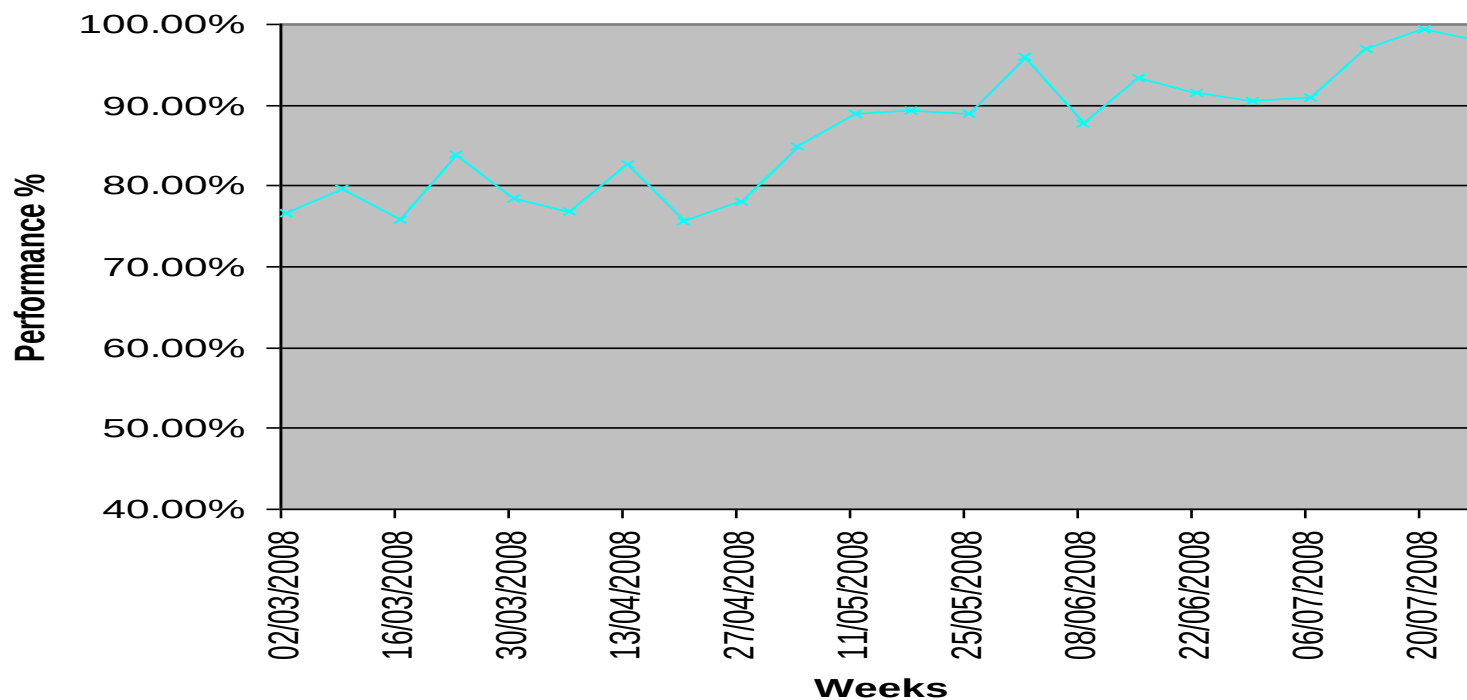
At the start of this implementation
the hospital was the worst
performing hospital in England.

BHRT 4 Hour Performance: March –August 2008

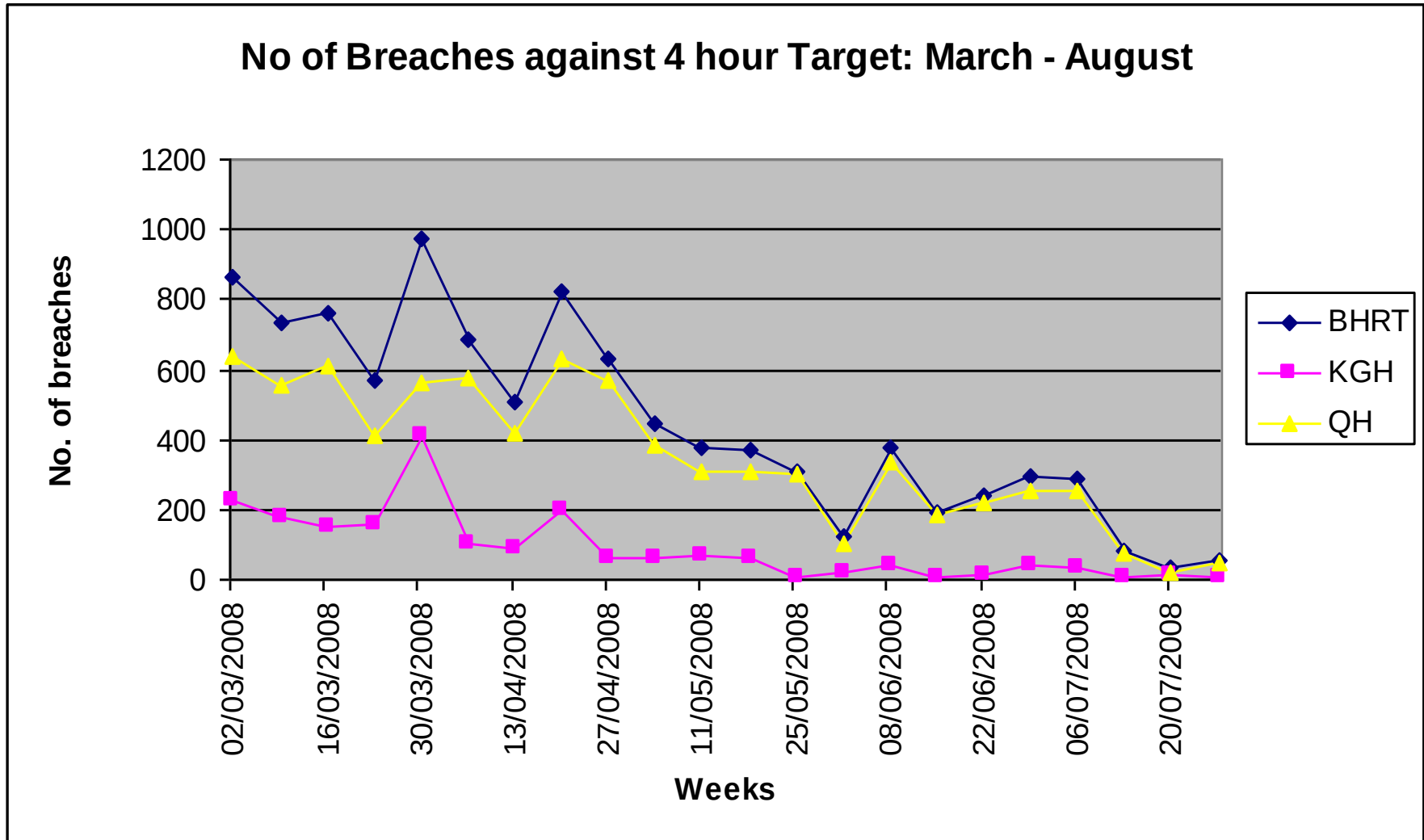


Queens Hospital 4 hour Performance

Queens Hospital 4 Hour Performance: March - August 2008



BHRT 4 Hour Breach Numbers: March – August 2008

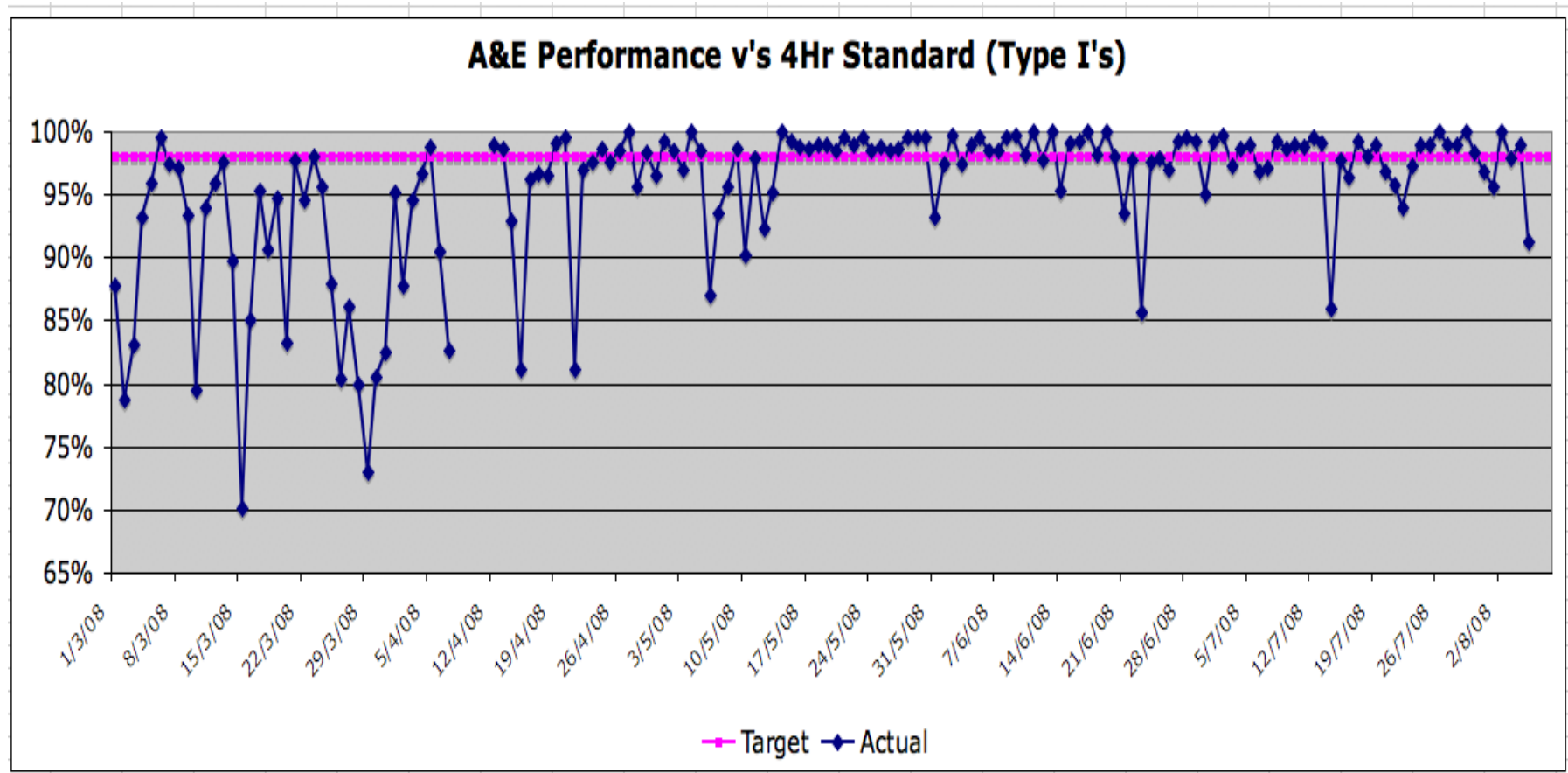


Whipps Cross NHS Trust

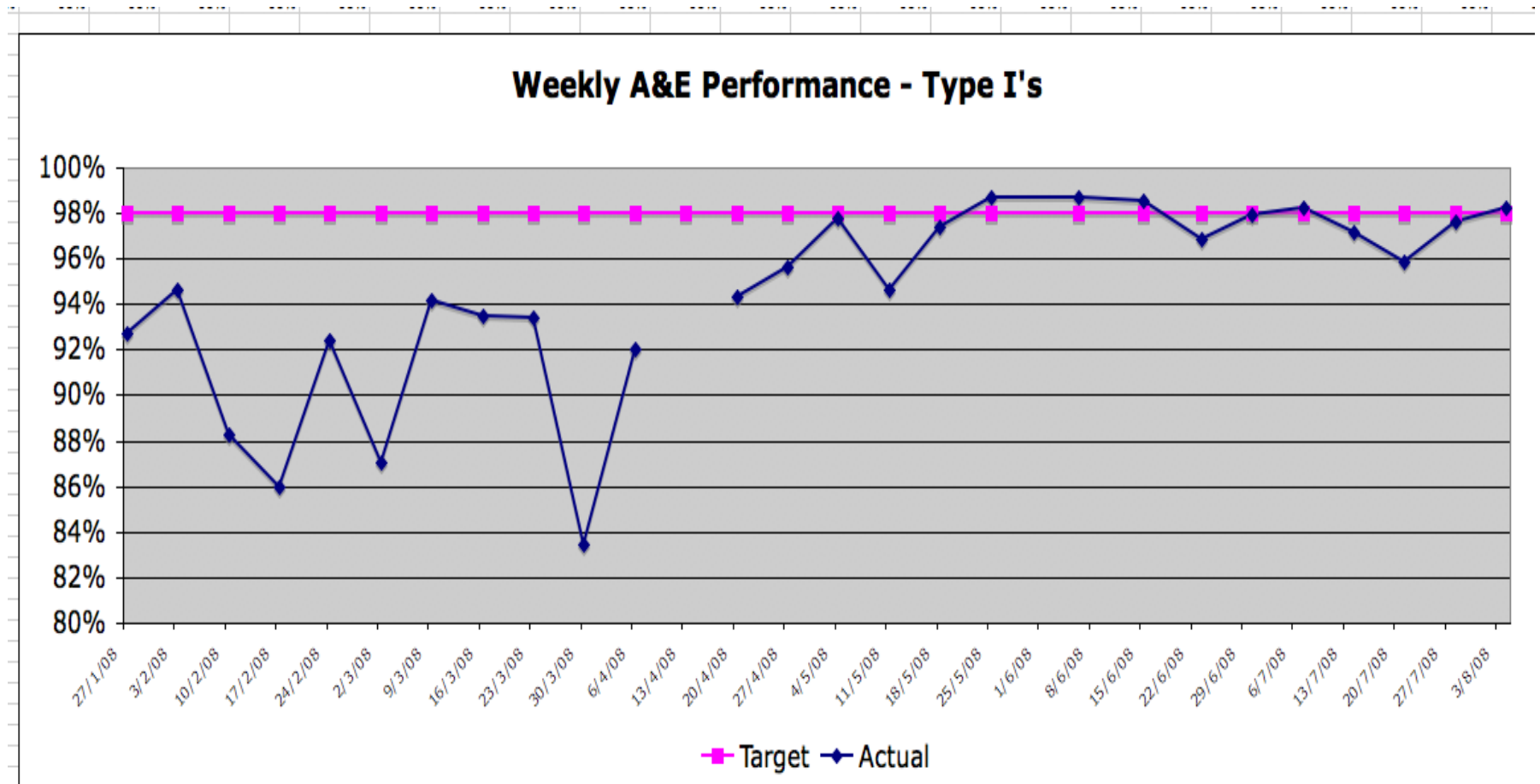
March – August 2008

At the start of this implementation the hospital was the second worst performing hospital in England.

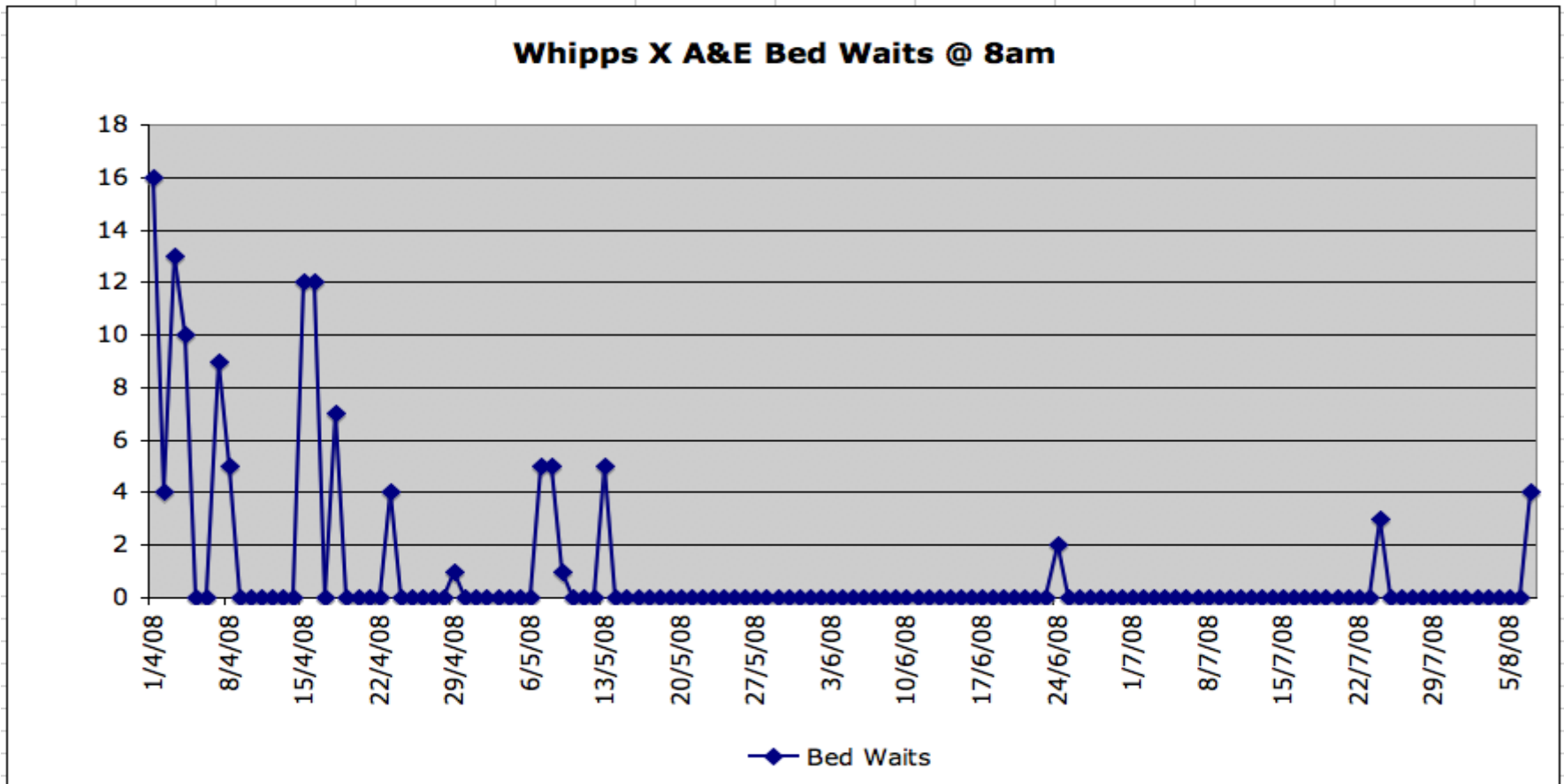
Whipps Cross 4 Hour Performance: March –August 2008



A&E Weekly Performance Against 4hr Standard

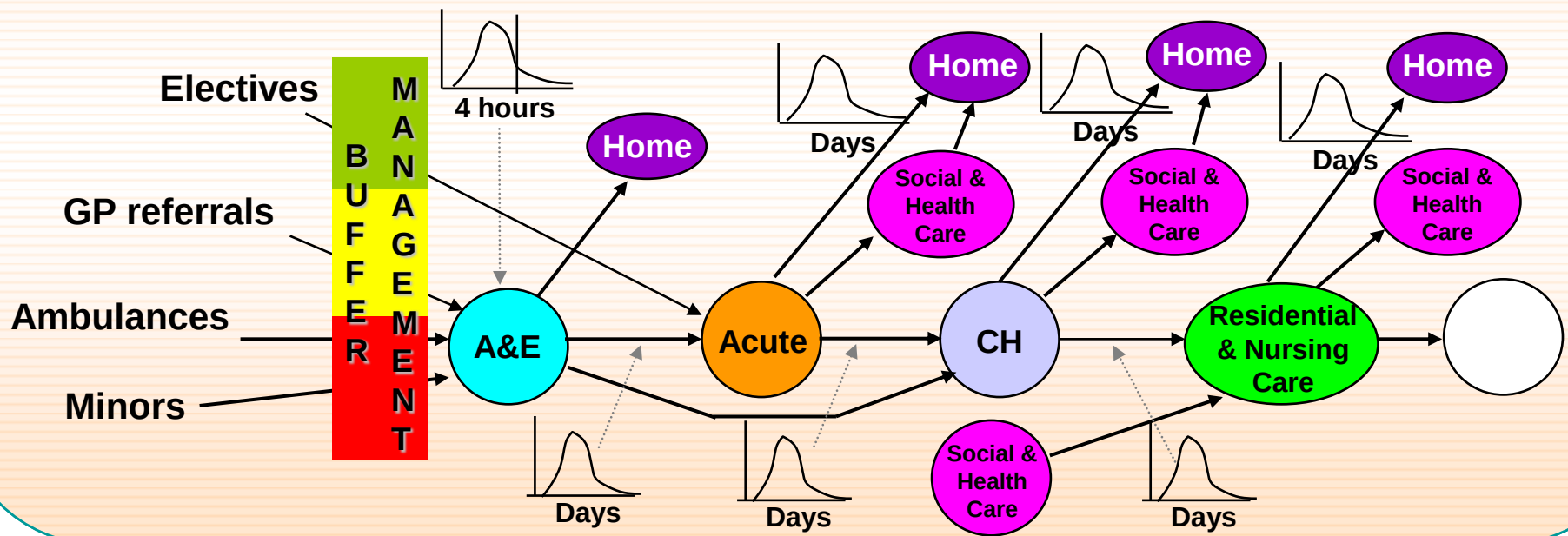


A&E Daily Bed Waits at 8am



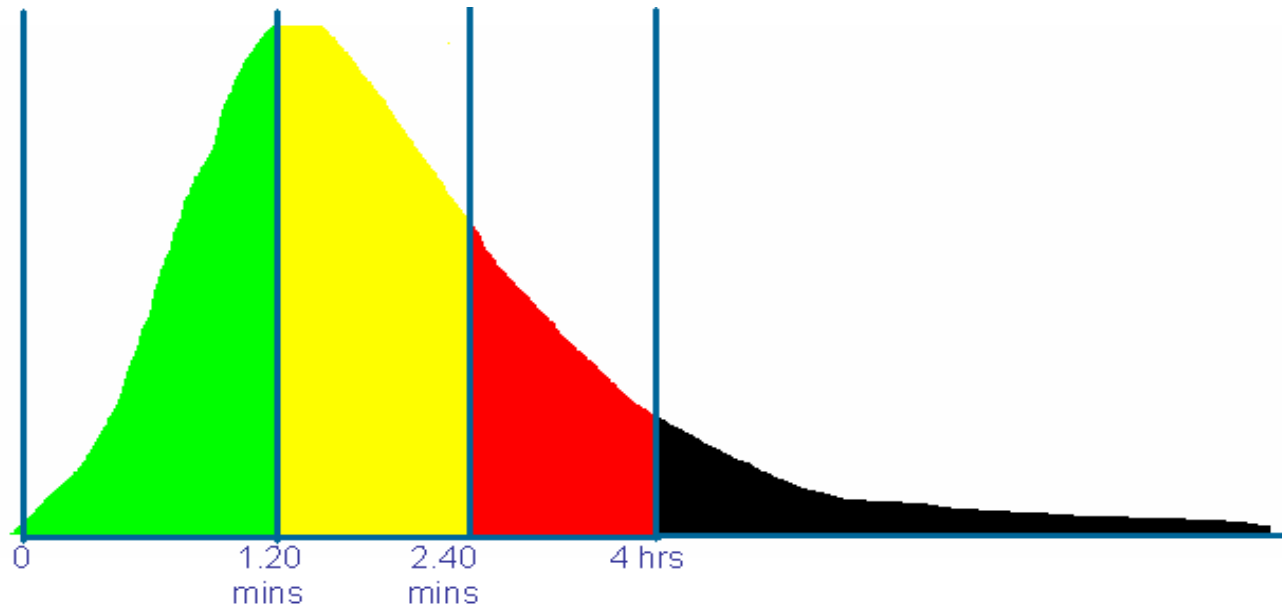
THE APPLICATION

DYNAMIC BUFFER MANAGEMENT



4 HOUR TARGETS: IMPLEMENTING 'DYNAMIC BUFFER MANAGEMENT'

Split the 4 hour process into 3 zones: green, amber, red.



Actively manage patients in the amber zone to avoid them moving into the red zone. Patients in the Red/Black zone to be 'expedited' through the remaining steps in the system.

CRITERIA FOR THE EMERGENCY DEPARTMENT BUFFER MANAGEMENT SYSTEM

- ✓ Simple, practical and quickly understood by all
- ✓ Minimal disruption
- ✓ Visible real time buffers
- ✓ Buffer analysis report to support decision making
- ✓ Capture reasons for buffer penetration
- ✓ Concept to everyday use in 4 weeks



THE WEEKLY BUFFER MEETINGS

- Multidisciplinary team
- Maximum 1 hour
- Identifying top causes of delay
- Development of implementation plan to eradicate causes within a week
- Escalation of system-wide policy issues



Section 2: Application for discharge process

2.1 Summary of results

2.2 The Application:
Jonah Discharge Planning Toc.



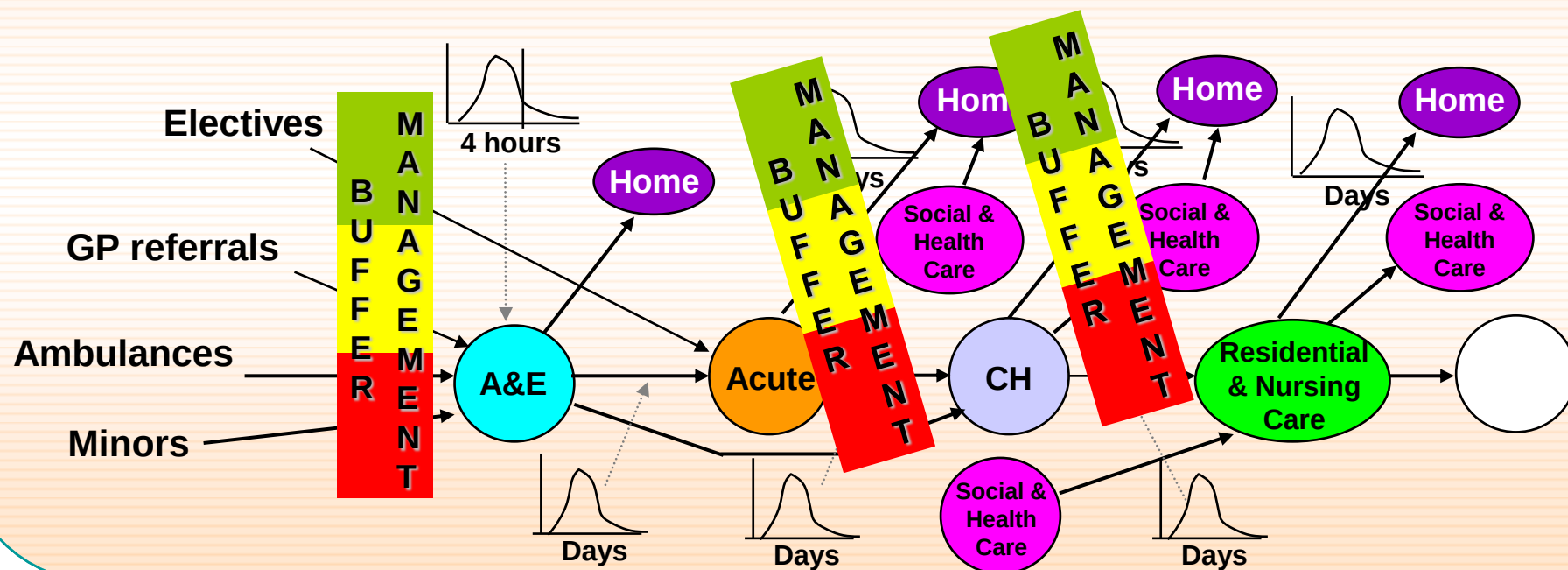
RESULTS

APPLICATION FOR THE ACUTE AND COMMUNITY DISCHARGE PROCESS



THE APPLICATION

Jonah Discharge Planning Tool



Barnet and Chase Farm NHS Trust –Results to date

	Chase Farm 14/11/2006	Chase Farm 01/11/2007	Barnet 01/05/2007	Barnet 01/11/2007
Delayed patient days	915	60	450	100
Number of delayed patients	84	14	47	18
Emergency bed availability at 9 am Monday morning	Minus 60 to minus 40 beds available	Emergency Bed availability positive	Minus 25 to minus 15 beds available	Emergency Bed availability positive
Length of stay across all Jonah wards	11	8	10	7

JONAH DISCHARGE PLANNING TOOL

Based on Theory of Constraints (TOC) Critical Chain Project Management Principles



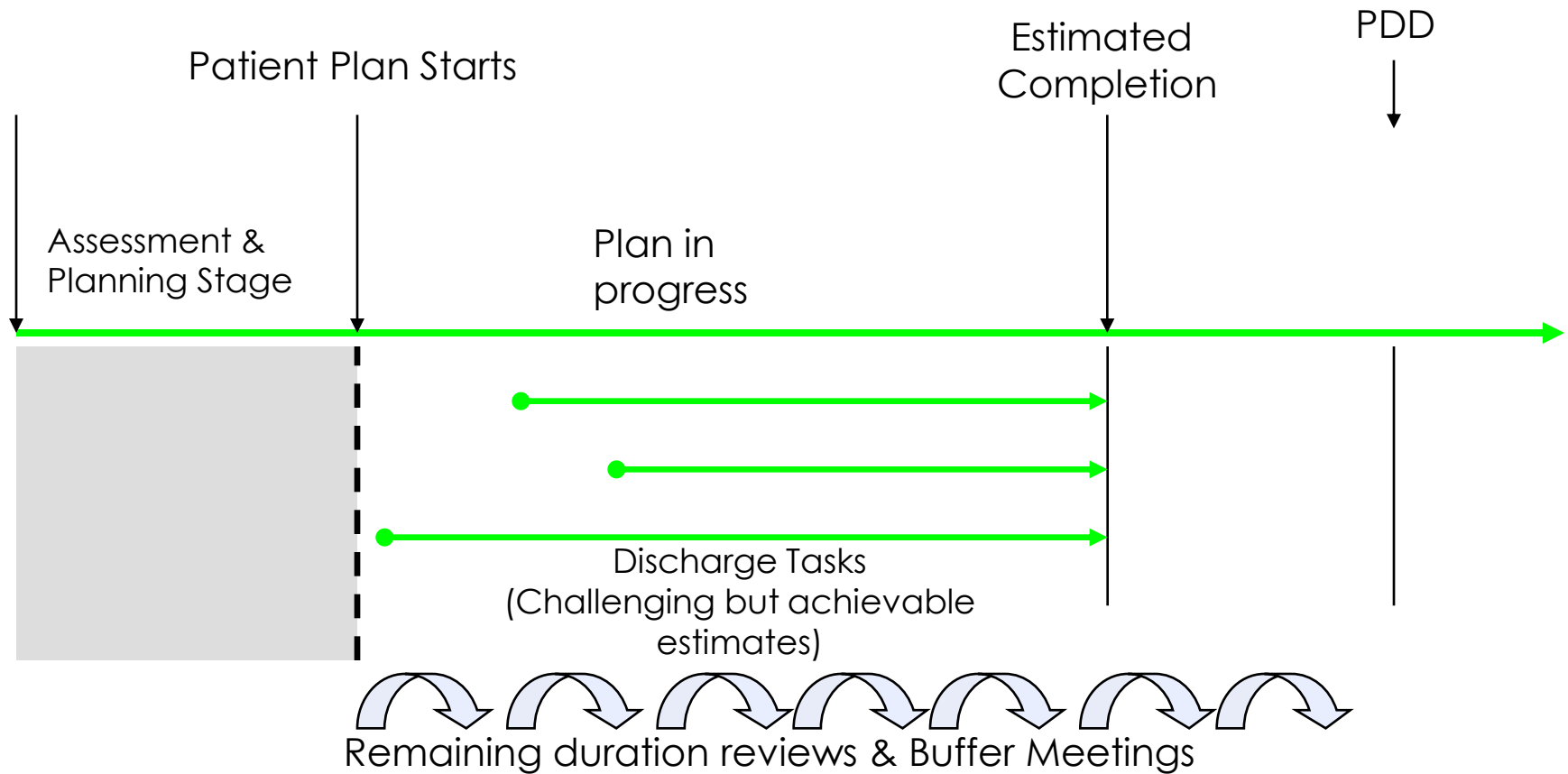
CRITERIA FOR THE SOLUTION

- ✓ Simple and very practical
 - Minimal administration
 - Easy to use
 - Implemented with minimal disruption and cost
- ✓ Manage uncertainty
- ✓ Ability to identified problems with projects early enough
- ✓ Ability to focus in on the key constraints of the whole project portfolio
- ✓ Relevant information available to all involved in the Multi Project environment
- ✓ Priorities demands on resource managers (not based on who shouts the loudest)



Action Plan

- Plan needs to be completed
- Remaining duration of Discharge Tasks are frequently re-estimated

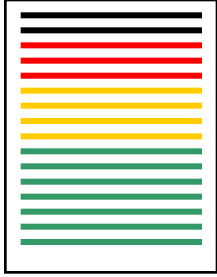


Patient's plan in progress- Discharge Tasks setup

DISCHARGE TASKS



- High level tasks
- Each Discharge Task has a Task Manager
- The remaining duration for each discharge task is updated frequently
- Each discharge task will have a buffer status
- The discharge task with the most buffer penetration will determine the patient's buffer status



TASK MANAGERS

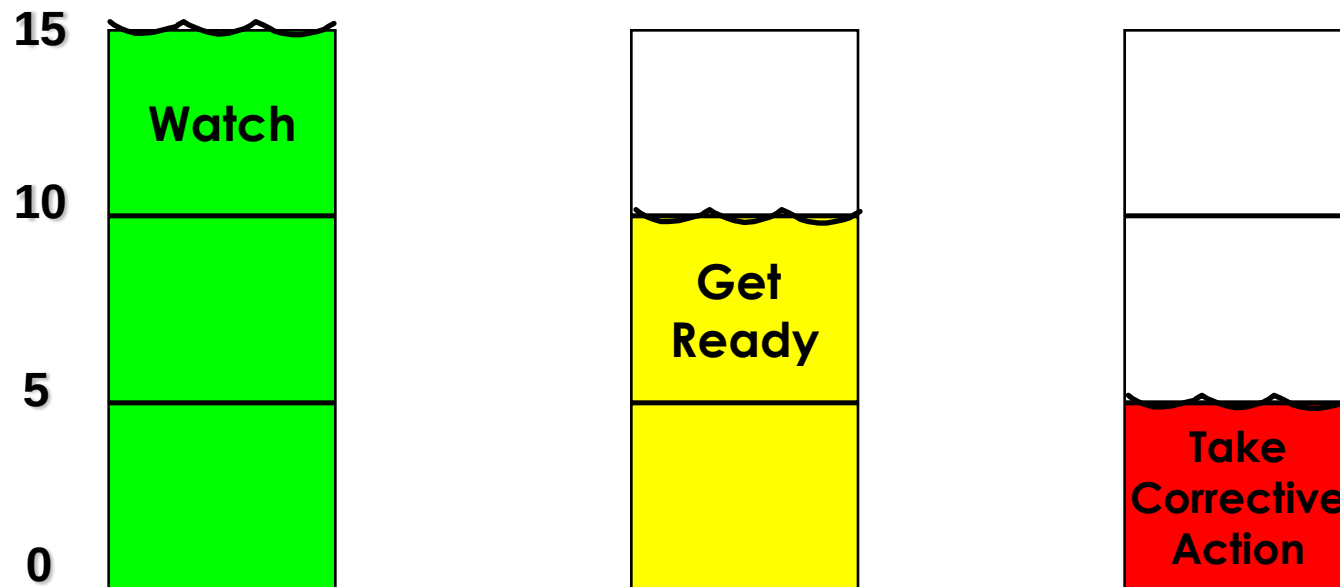
- Group of resources
- At any one time an individual from that group is responsible for managing the task list
- 'Task Managers' manage their tasks across the portfolio of projects
- Task Managers are responsible for updating the remaining duration of the 'Discharge Tasks'



MANAGING THE PROJECT – BUFFER MANAGEMENT

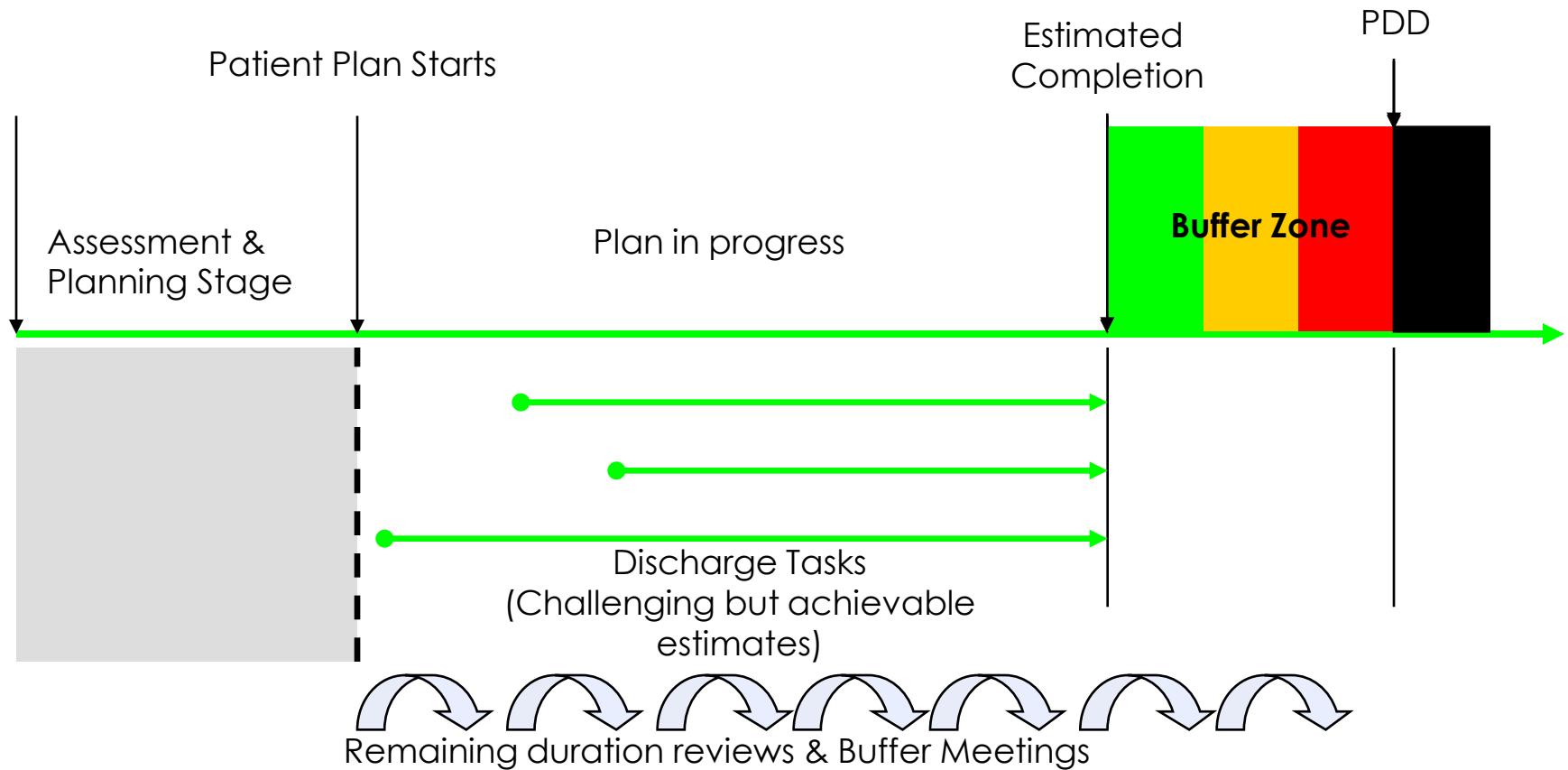
Buffer Management - by tracking the buffer zones, the project manager can decide upon:

- What corrective action is required
- When the corrective action needs to be implemented
- Who is involved in the corrective action



Action Plan

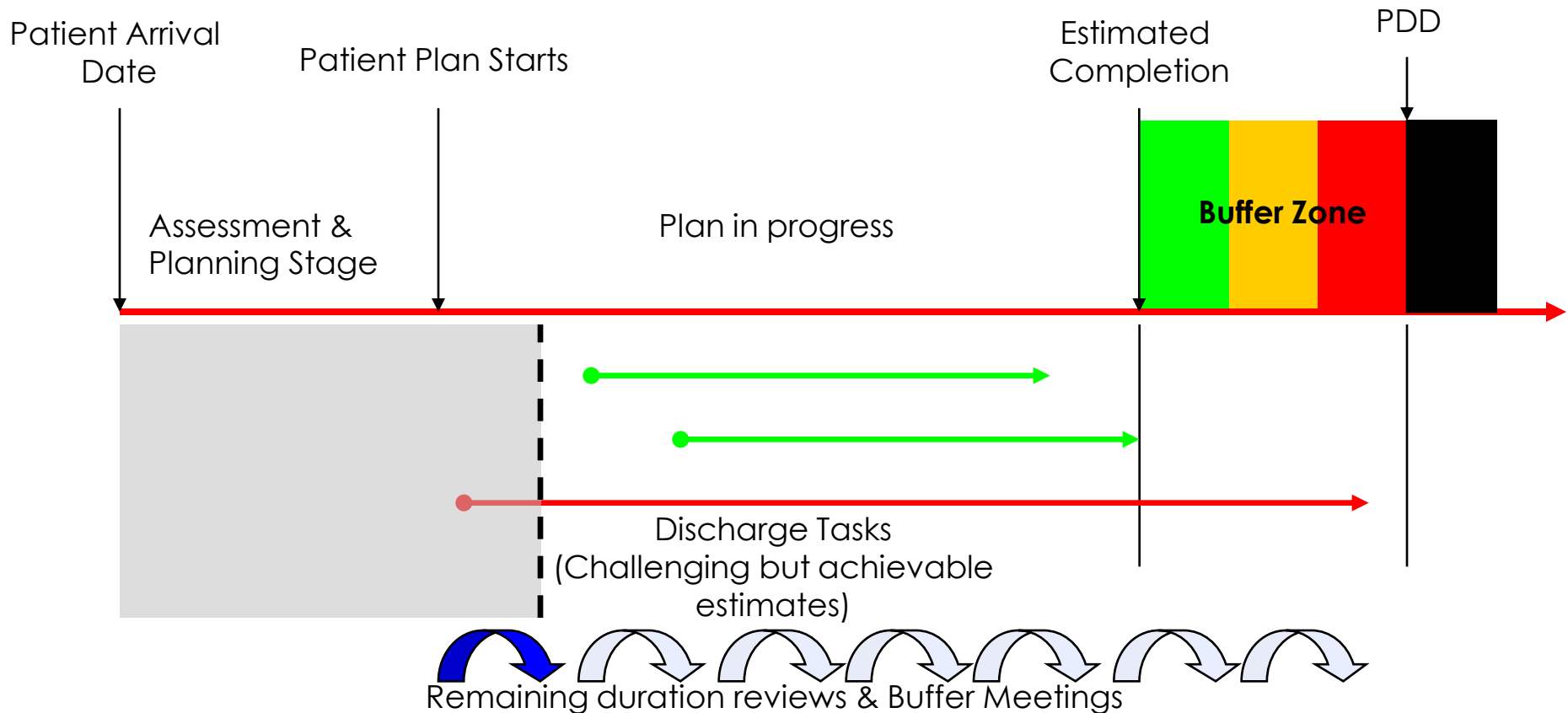
- Plan needs to be completed
- Remaining duration of Discharge Tasks are Frequently re-estimated



Patient's plan in progress - Discharge Tasks set up

Action Plan

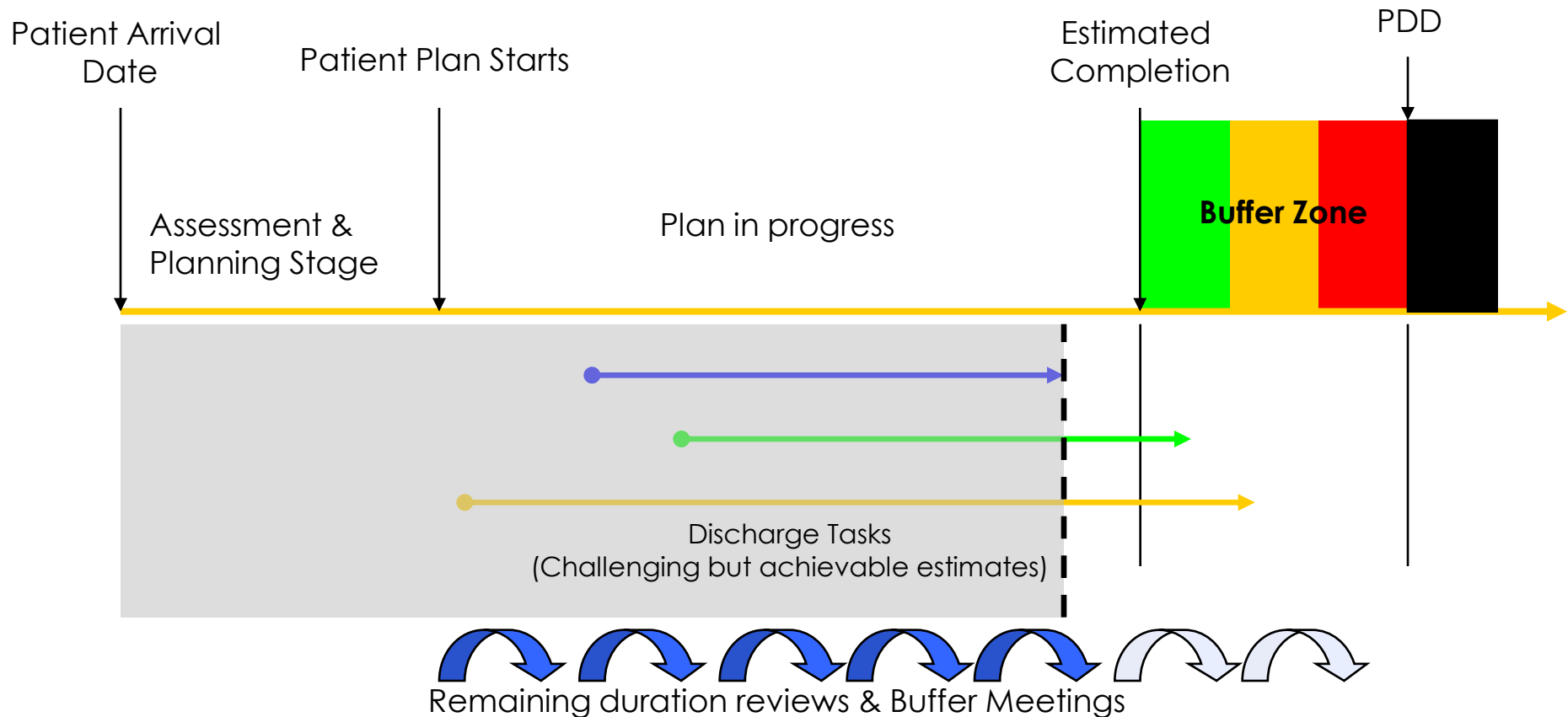
- Log the reason for the buffer penetration
- Take action to recover buffer penetration back to the 'Green Zone'



Plan in progress – First Buffer Meeting

Action Plan

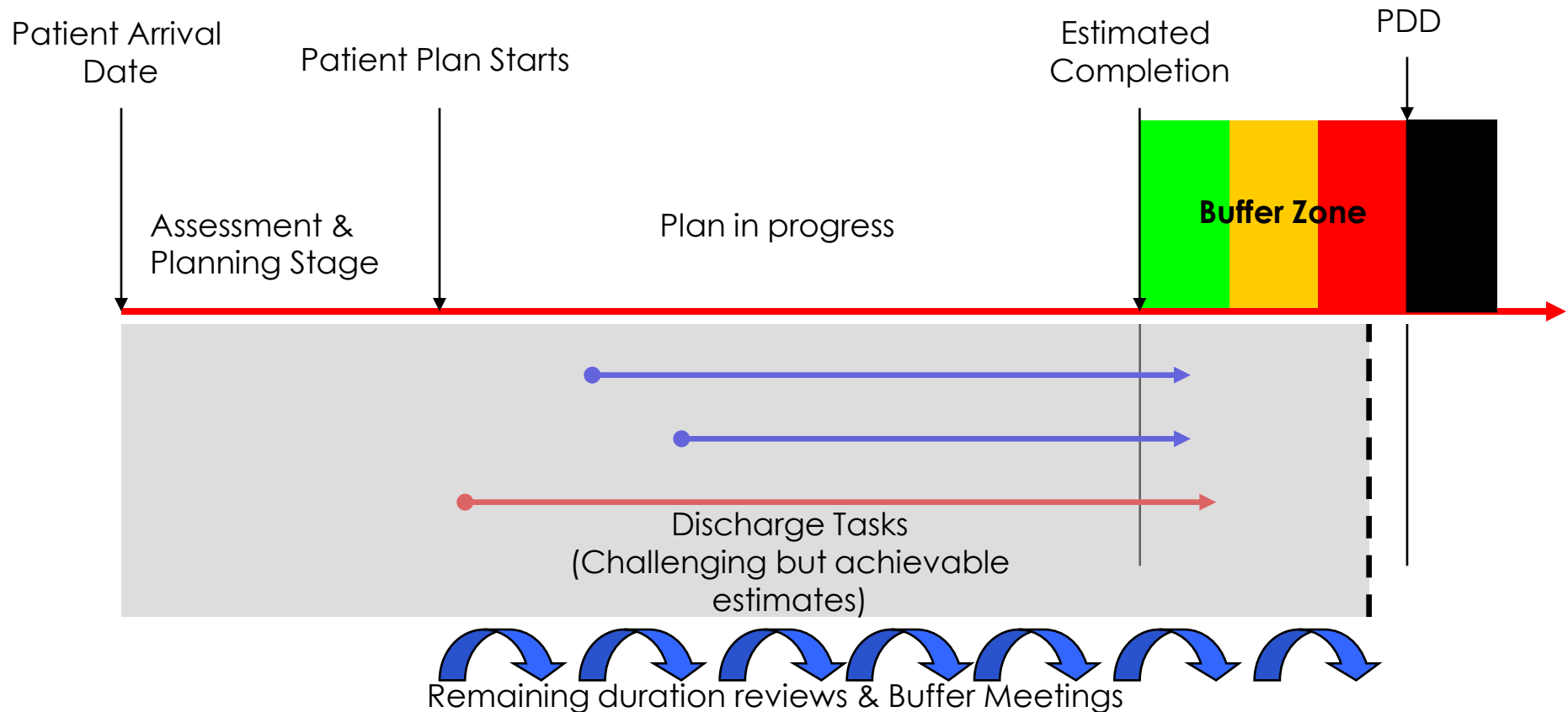
- Monitor recovery progress



Plan in progress – Recovery actions in progress

Action Plan

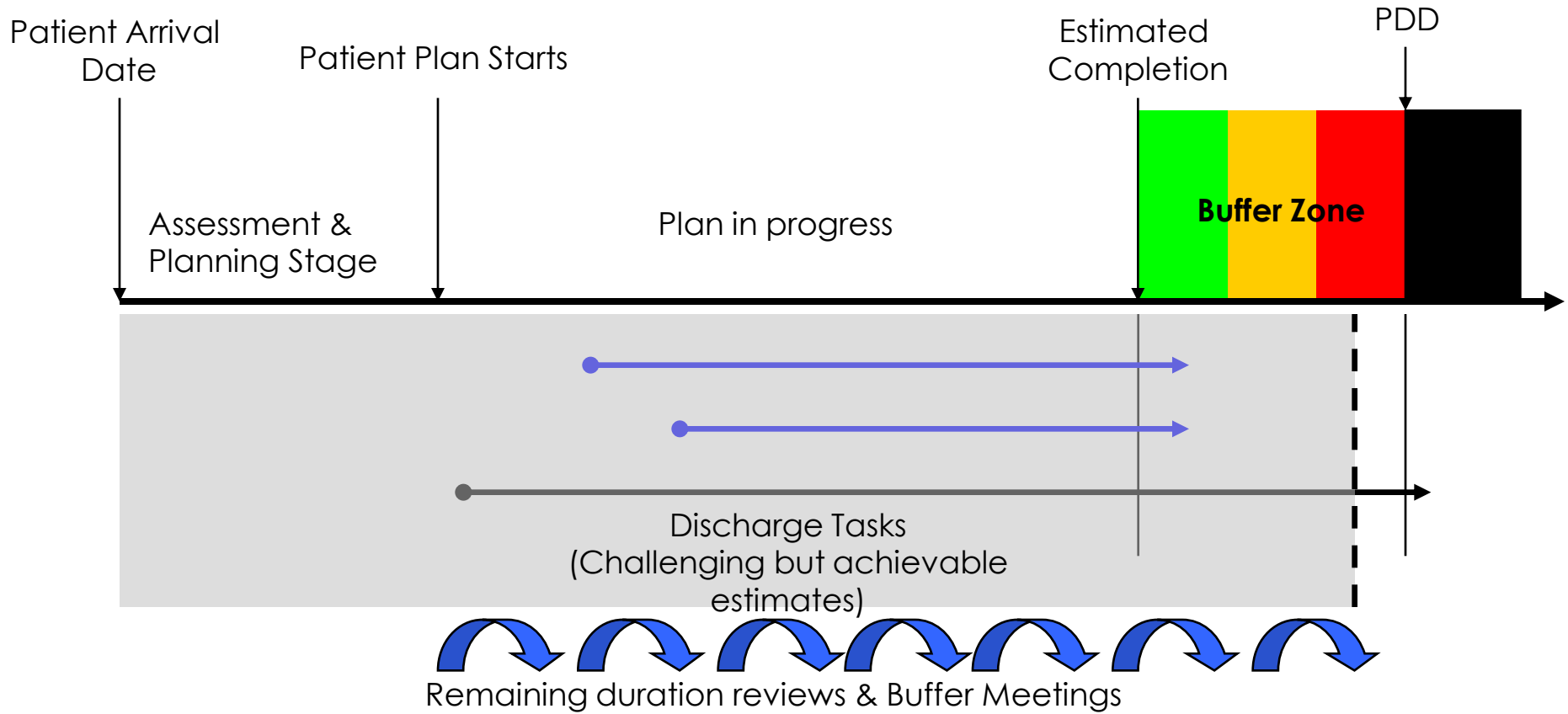
- Update outstanding Discharge Task remaining duration



Plan in progress – Active Discharge Task not updated

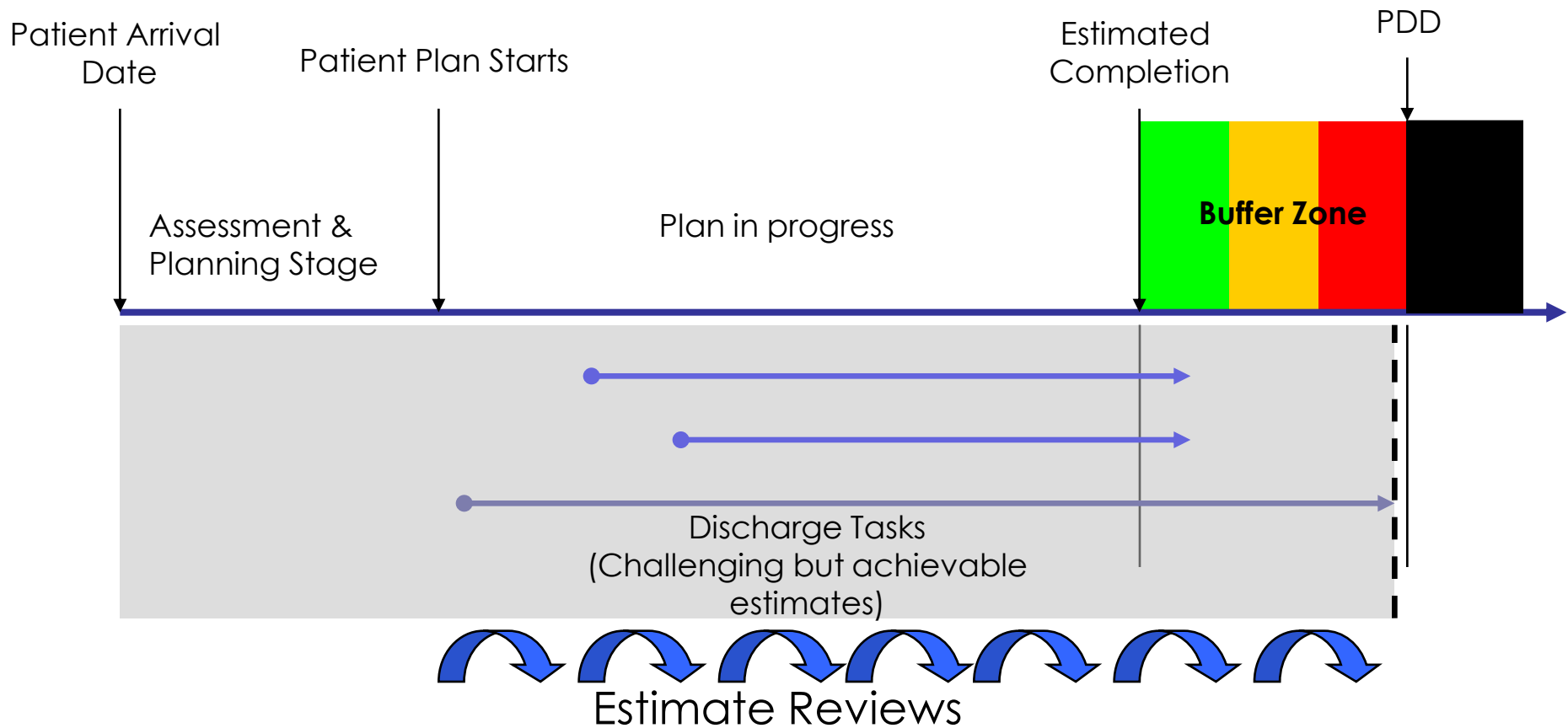
Action Plan

- Expediting action required



Plan in progress – Active Discharge Task now updated

Action Plan



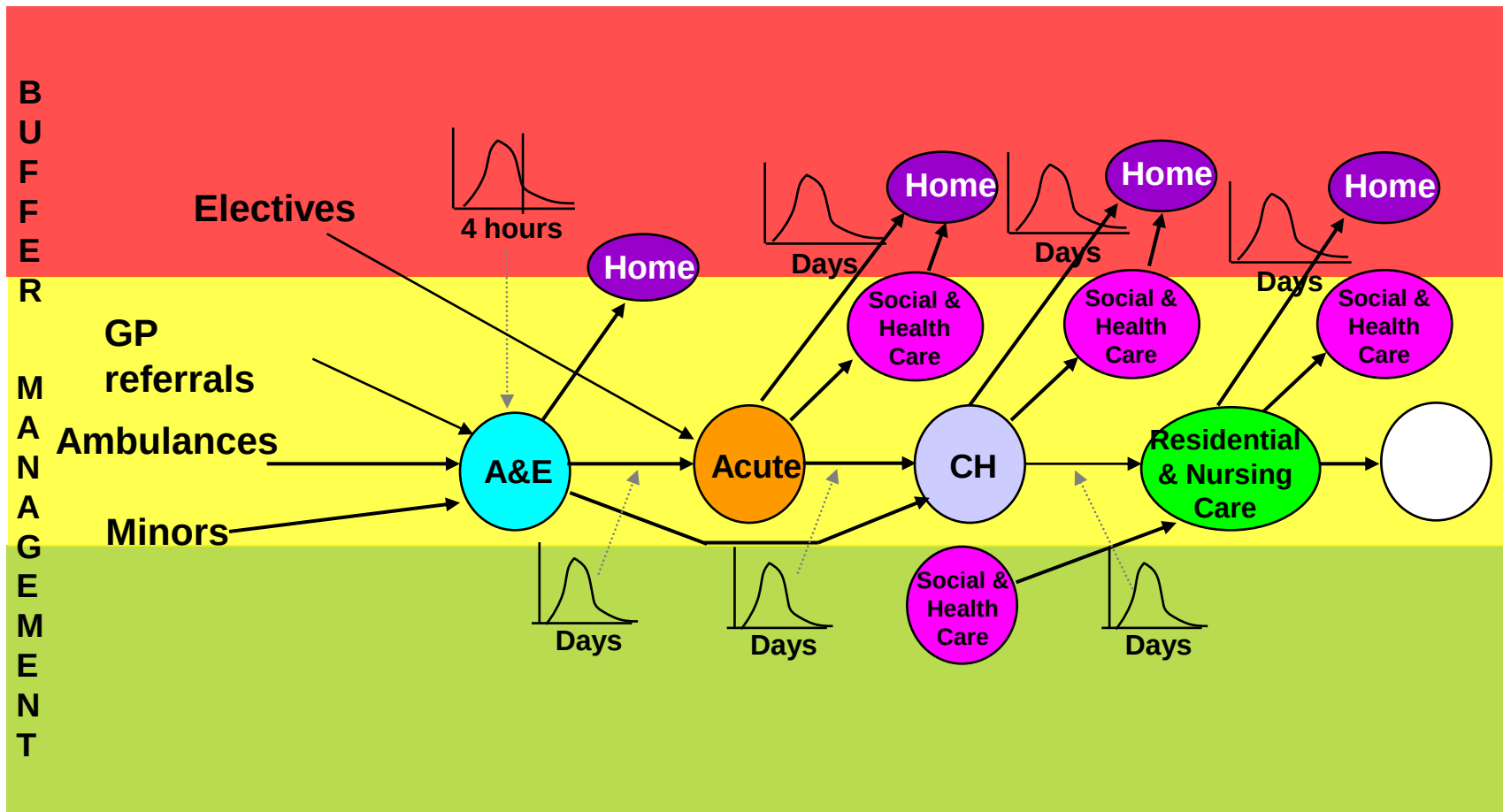
Plan complete – All Discharge Tasks complete and status set to 'Discharged'

THE WEEKLY BUFFER MEETINGS

- Multidisciplinary team
- Maximum 1 hour
- Review the top buffer penetrating projects
- Identify and agree recovery actions
- Record reasons of buffer consumption for future system improvement



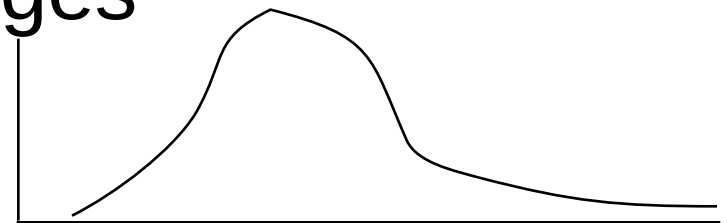
Section 3: Application of TOC across the whole health system



Section 5: Application of TOC across the whole health system

Key statistics from your system

- A and E performance
- Assessment Unit performance
- Elective cancellations
- Theatre cancellations
- Acute discharge blockages
- Community hospital blockages



Length of stay

