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NSW HEALTH

Behavioural Redesign

*Driving Patterned Responses and reducing variation in
'chaordic' hospital environments*

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The intent of our paper is to:

- Confront the passive urban myth held by many managers that performance and chaos is a result of a lack of social predictability.
- Identify and acknowledge that hospitals are 'chaordic' by nature
- Highlight that patient referrals are patterned and orderly and that chaos to a major degree is socially constructed and behaviourally reinforced.
- Emphasize the importance of rapid system recovery strategies in response to surge activity and fluctuating variation.
- Argue that most management training within health at middle manager level is stuck within traditional practice paradigms.
- Propose a condensed introductory training package for managers based on cybernetics and systems thinking.



Questions

- Why do we constantly struggle to establish and maintain effective and efficient patient flow into our public hospitals?
- What are the constraints and is it possible to achieve a dynamic and stable system of equilibrium and patient flow within a pluralistic public health facility?
- Why do we still under-perform on emergency access when 95% of our referrals to hospital are orderly and predictable?
- Why is it that our clinically grounded redesign processes can lead to significant gains but not necessarily sustained gains?
- What is required to prepare managers to efficiently manage patient flow within a complex hospital environment?



Some observations

- Patient referral and arrival is orderly and predictable until crossing the hospital threshold.
- Public hospitals are 'chaordic' systems. They are complex and dynamic arrangements of connections between various elements (departments) forming a whole, the behaviour of which is simultaneously both un-predictable (cha-otic) and patterned (orderly).
- Chaordic systems are unstable since they tend not to resist any outside disturbances but instead react in significant ways. In other words they do not shrug off external influences but are partly navigated by them.
- Chaordic systems are vulnerable to environmental uncertainty, their reactive nature manifests a dynamic/unstable state of equilibrium resulting in variation and slow recovery to systemic disturbance.



Some further observations

- The imbalance within a hospital environment between chaos and order is socially constructed and reinforced.
- Complexity is an artefact of imbalance between organisational differentiation, integration and constituent behaviour.
- Most managers disagree with this position claiming that chaos is a result of the lack of social predictability and therefore assume a victim and defensive position.
- Most hospital managers and management training is stuck within traditional practice paradigms.
- Traditional management practice paradigms fail to prepare managers to understand their environment from a systemic position and therefore the majority of managers are ill-prepared for managing large complex and vulnerable systems.



A hospital is a consciously structured social entity

- As a social entity one assumes that a hospital consists of people who have a common set of goals.
- It is also reasonable to assume that these goals are either unattainable or less efficiently achieved if worked on in isolation.
- Interaction between staff is not random but premeditated and behaviourally determined.
- To achieve efficient patient outcomes, interaction patterns between staff must be balanced and coordinated systemically
- The unique characteristics of a balanced system can be demonstrated through the quality of the interrelationship of its parts.
- Hospital systems are vulnerable to the behaviour of its constituents.



Complexity as an artefact of an imbalance between organisational differentiation, integration and constituent behaviour

- In complex environments such as hospitals, differentiation is prominent due to the nature of the clinical divisions and departments performing specialised activities.
- Teaching hospitals are further differentiated adding to complexity through their organisational design option of 'professional bureaucracy'.
- Within a professional bureaucracy, staff perform their activities autonomously adding further layers of complexity and opportunity for systemic fragmentation.
- Imbedded within hospitals we also find machine bureaucracies performing highly routine and industrially controlled work practices.
- Integration is the required force to balance differentiation and reduce variation within a complex organisation.



Levels of environmental influence and the manager's challenge to identify, control and regulate

- Organisational effectiveness is dependent upon senior managers understanding the innate relationship between the general, specific and internal sub-unit environments.
- The specific environment or supra-environment refers to the broader societal conditions that influence the specific health environment including political, economic and social/cultural influences.
- The external specific environment refers to services such as GPs, peripheral hospitals, ambulance, community services etc.
- The internal specific environment relates to the interfacing between the organisation's divisional services such as medicine, surgery etc.
- From a systems perspective managers must also have a sound understanding of the internal sub-unit environments within a single division such as medicine which commonly aggregates in to 8-10 departments.
- Each of these departments within the sub-unit environment has an 'organisational core domain' with inclusion and exclusion criteria.



Managers need to identify and understand environmental uncertainty

- Not only do managers need to understand the interrelated environments and their role in creating organisational complexity, but they also need to understand and identify states of environmental uncertainty.
- The general health environment most commonly exhibits a disturbed-reactive nature with its tendency to rapidly react to political/societal changes.
- The specific external environment is more predictable and changes relatively slowly, threats to the environment are clustered rather than random and forces within this environment are linked in a placid clustered form.
- The sub-unit environment exhibits a turbulent field nature with high levels of uncertainty. This is the main behavioural challenge area for managers.
- Within the sub-unit environment change is ever present and is at the whim of senior clinicians and a by-product of uncontrolled autonomy and lack of standardisation within a professional bureaucracy.



Within existing clinical redesign programs we have historically focussed on achieving the 5 'Rights' along the patient journey

Right Patient

Right Time and Place

Right Information

Right Providers

Right Care

We need to develop the 'Right' managers to support and sustain the benefits of existing redesign programs.

John Hunter Hospital has already informally embarked on this challenge of management behavioural redesign...

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Management 'Systems thinking' to support existing clinical redesign

Cybernetics and system sciences and importance to the management of complex organisations

Systems theory

Chaos theory

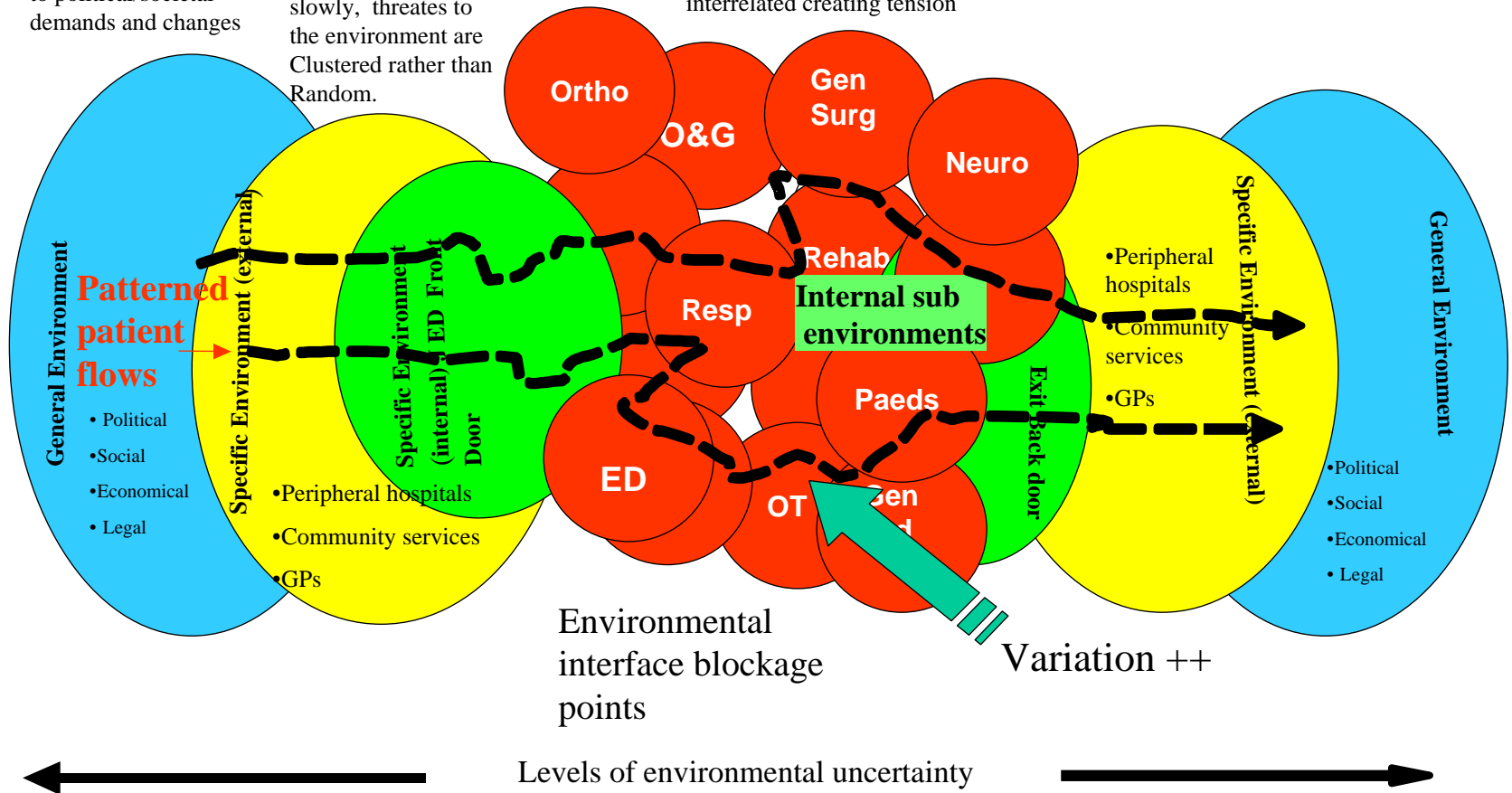
Defining environment

Relationship between General, specific & internal Sub environments and effect on patterned patient flows

Disturbed Reactive
Complex and reactive to political/societal demands and changes

Placid Clustered
Changes relatively slowly, threats to the environment are Clustered rather than Random.

Turbulent Field
Most dynamic with highest uncertainty. Change is ever Present and elements in the environment are increasingly interrelated creating tension





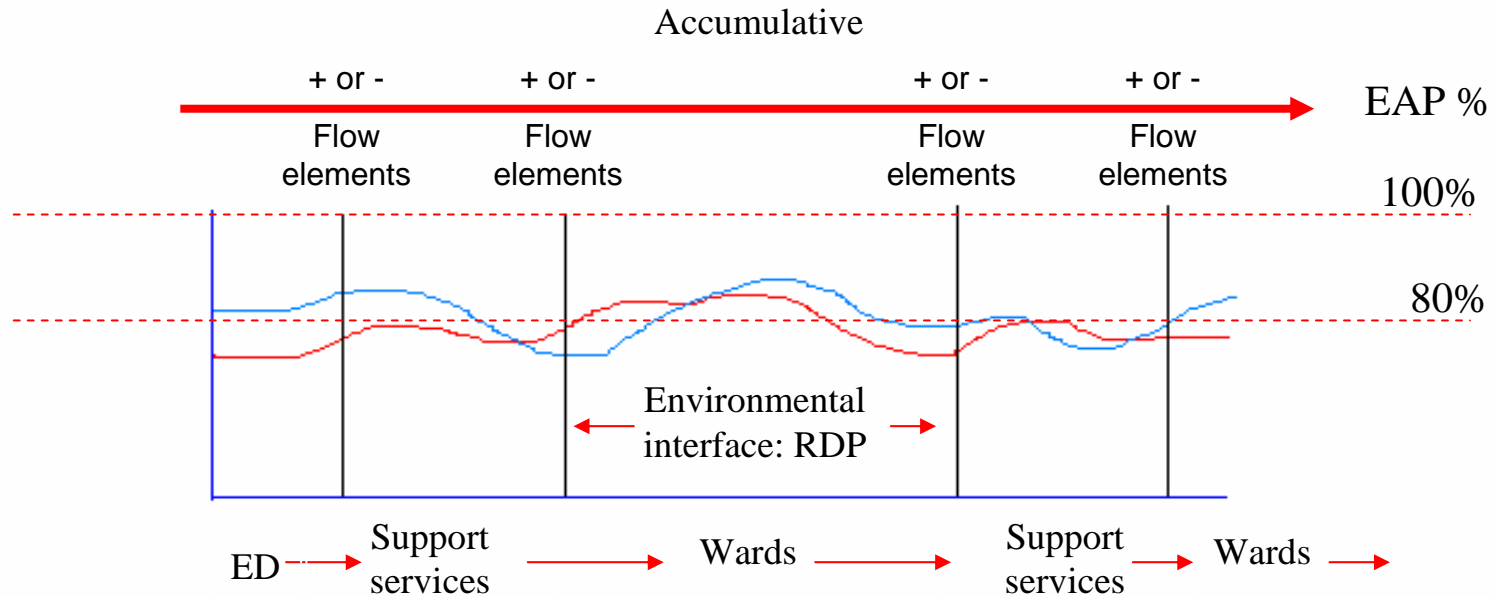
Systems Variation and Recovery management skills

Applying cybernetics and system sciences to the management of complex hospitals and efficient patient and process flow

Rate Determining Points (RDPs)
Macro lead indicators
Escalation/Recovery strategies
System metrics

HOSPITAL SENIOR MANAGEMENT 'MACRO' MONITORING

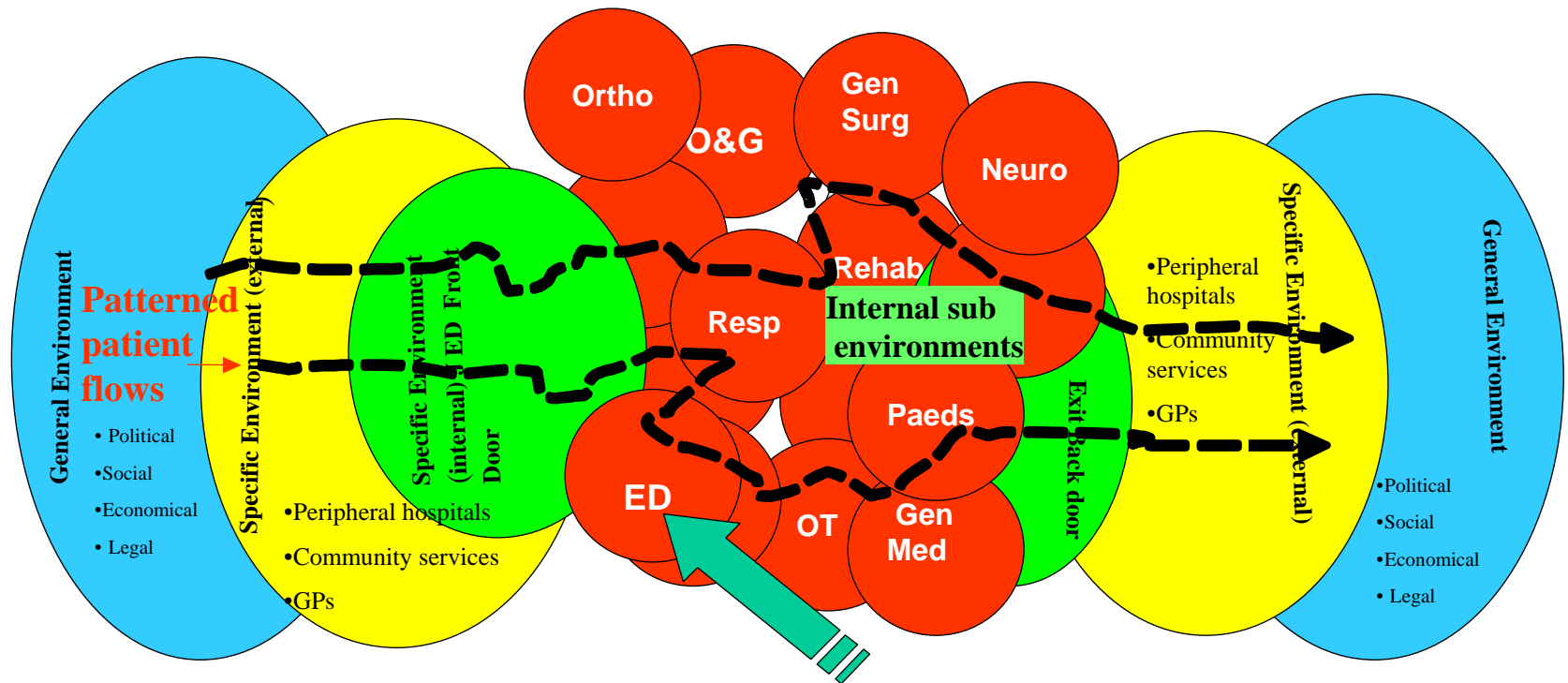
(Service managers Division Operations managers Directors Clinical services)



Rate determining points (RDP) are the process value analysis monitoring points between critical environmental interfaces

Each **Macro RDP** requires consistent monitoring by senior management throughout the day allowing for system adjustment in real time (lead indicators)

Macro overview





Micro overview



ED

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Systemic interrelationship & Critical Flow Interfaces at a micro level within the Emergency Department

Presentation ← **Hospital Executive Monitoring** → Discharge

Bed-manager →

ED Co-ordinator →

Critical Flow Interfaces

+/-

+/-

+/-

+/-

ED Patient Journey

ASNSW/Triage

ED MO/Inpatient MO

ED/Radiology

ED/ward

RDP

RDP

RDP

RDP

Lead Indicator

ESCALATION/RECOVERY STRATEGIES

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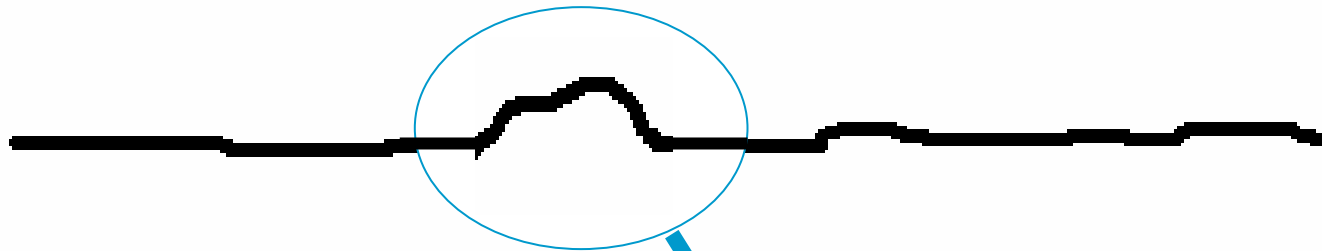
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Initiating Recovery Strategies

Overview of cumulative 'delays' at RDPs and resulting variation

Patient Journey Pathway



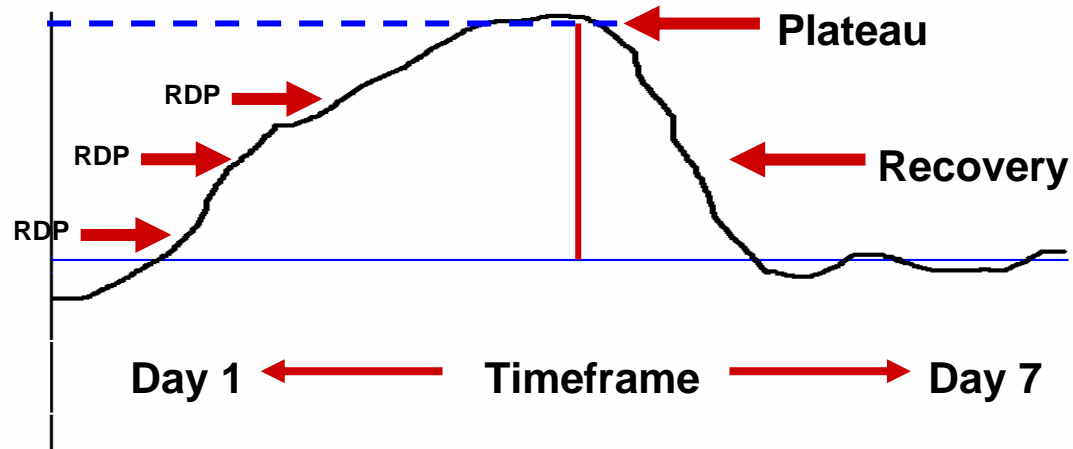
Causes:

Roster misalignment

Quarantined beds

Internal disaster scenarios

Prioritisation misalignment

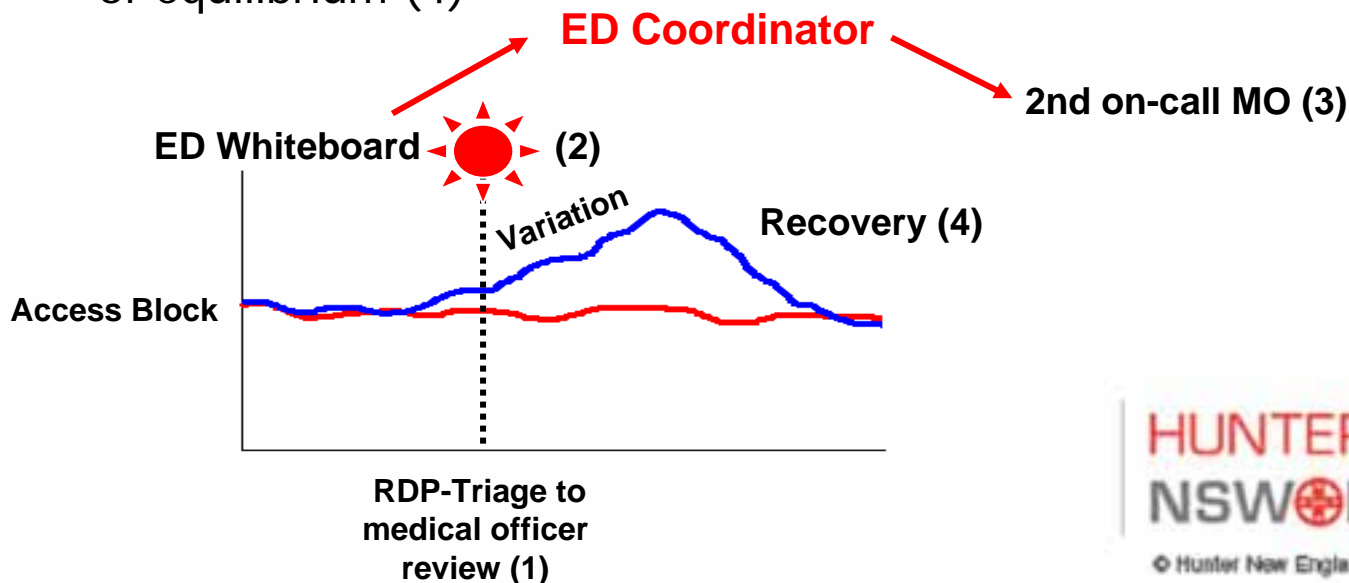


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Recovery Strategies

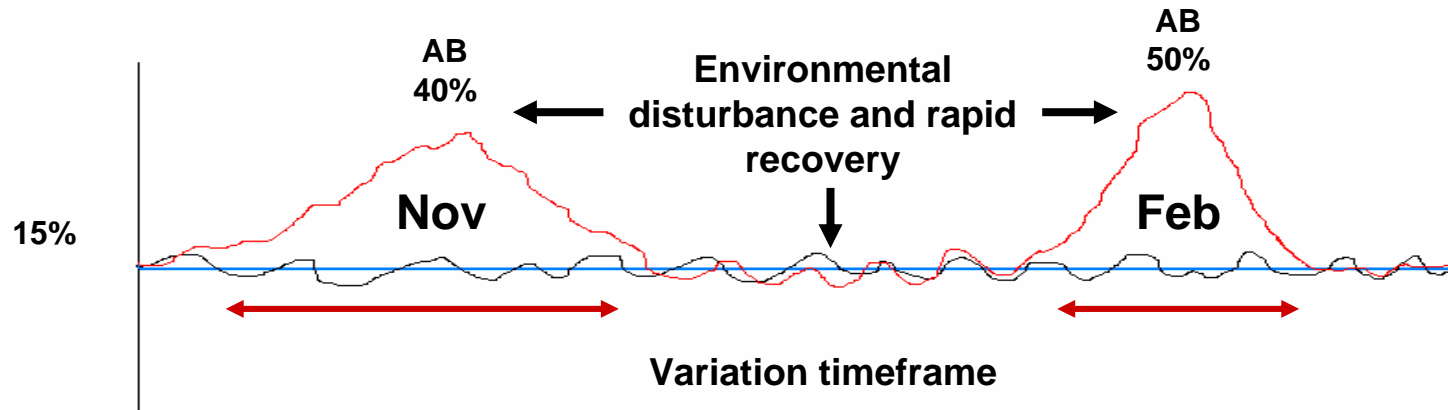
- Identification/detection of systemic variance at the rate determining point (1)
- Development of visual system to alert the team to the variance contributing factor (2)
- Concentration on the non-value adding factor and implementation of strategies to remove or provide a patient flow 'work-around' (3)
- Involvement of senior executive if necessary *
- Continued monitoring of 'hot flow idle spot' ☀ until flow reaches normal level of equilibrium (4)



Does this work?

Maintaining a dynamic stable state of equilibrium

Applying the Behavioural Redesign Model



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The goal: Sustained 'Exceptional' performance

