Scrutiny Management Panel Systems Thinking - Session 1

November 2021

Purpose of this session

To begin to work through the agreed scope of this Task and Finish Group, which is:

- An overview of the current approach to the use of systems thinking in Portsmouth City Council;
- The methodology employed within PCC - to include an explanation of interventions and how they work;
- How and why interventions are currently commissioned; and,
- Potential future applications

Reason for this enquiry

As a reminder, the stated reason for this enquiry, as per the agreed scope, is:

"It is understood that the systems thinking methodology has been widely used in some parts of PCC to review and redesign services and therefore this enquiry will explore in what contexts it is most applicable and how we are utilising our existing capacity."

Meeting Schedule

It is anticipated that this Task & Finish Group will run for three meetings, as follows:

1) An introduction to systems thinking at PCC (this session);
2) Practical examples of the use of the method at PCC; and,
3) Further develop issues arising from sessions above, and/or prepare conclusions.

What is systems thinking?

Systems thinking is a philosophy and academic discipline aimed at helping us to understand the world around us. It encourages us to understand 'wholes' rather than parts, and to acknowledge how the relationships between different parts of the system create the outcomes that we see.

Systems thinking is widely used in environmental science and ecology, in industry (particularly in Japan), and in public sector services around the world.

A brief explanation of systems thinking

When applied to how we think about the design and management of work, **Systems thinking** offers a different way of understanding the problems we face; often in a way that contrasts with the assumptions of conventional management thinking.

In the UK public sector, it has been applied by a significant number of local authorities, in parts of the NHS, and in the police. Central government has published detailed guidance for civil servants on the use of systems thinking in their work.

Because systems thinking as a discipline is so broad and varied, there is no consistent approach nationally, either in terms of the methods used or their applicability to given scenarios.

A brief explanation of systems thinking

There have been numerous attempts to codify the philosophy of systems thinking and the insights it offers into a methodology for change. The approach we use at PCC, for example, is a variant of the **Vanguard Method for Systems Thinking**.

The Vanguard Method was developed in the 1980s and '90s as a practical means to apply systems thinking in service organisations. PCC has used this approach since c2004 in a range of its services.

VANGUARD

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Vanguard and then SDS

PCC Housing first used the Vanguard consultancy in c2005. At that time, the work concentrated primarily on Local Authority Housing. A number of interventions followed, and this approach was adopted by the service as its key business improvement approach.

Over time, PCC has been able to internally grow its own capacity to do this work, and so has not used Vanguard since 2017.

We now have a small team of internal staff who support this work - the Systems Development Service, which sits within the Housing, Neighbourhood, and Building Services (HNB) Directorate.

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Deployment of SDS

For several years now, the resources of the SDS team have been deployed both within PCC and in partner organisations on a **demand-led** basis. This means that there is no overall 'programme' of work to be completed. Instead, leaders of service systems approach the Director of HNB or a team member to commission support.

Subject to availability, a member of the SDS team will meet with the service in question, and if appropriate will carry out **scoping**. A scoping process simply enables us to take an initial look at a system and consider whether it is suitable for the application of method.

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The intervention model
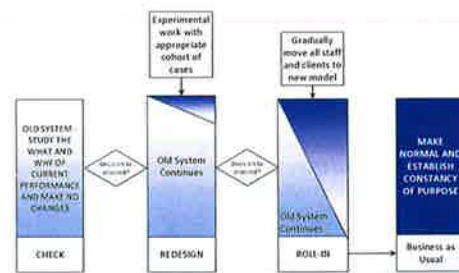
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The Portsmouth Model for 'Check'

All interventions start with **'Check'** - a detailed study of the system. The reason for this is the importance of gaining knowledge before making any changes, in order to avoid unintended consequences and to identify where there might be **leverage points** for improvement.

Check seeks to answer two deceptively simple questions:

1) What's happening in this system?

2) Why is that happening?

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The intervention model

Our principal approach to applying systems thinking within service systems is the use of an **'intervention'** model.

This approach requires a small team, drawn from leaders and staff in the system under review. It will vary in scale and duration to suit the size and complexity of the system we're trying to understand.

The intervention approach aims to improve outcomes, but equally importantly, to also equip leaders and staff with learning to enable them to improve the system continuously in the future.

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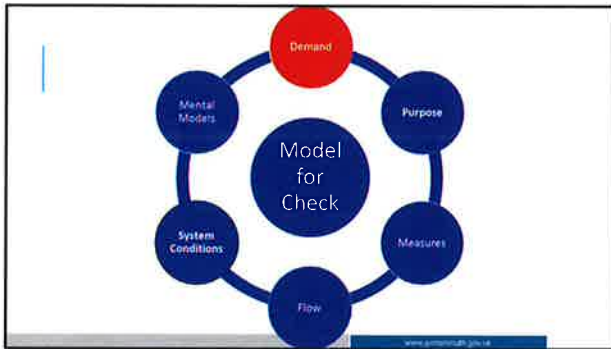
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Studying Demand

Most interventions begin with developing a thorough understanding of **customer demand**. This is completed by a combination of live observation and data gathering from service recording systems, if available and reliable.

Demands are recorded verbatim, in the customer's voice as far as practicable.

They are then categorised into high level types - what do customers predictably contact the service for?

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Two types of demand

Regardless of the type of service, we're always interested in studying and understanding the prevalence in a system of two over-arching demand categories:

Value Demand - Demand we want, what we're here for.

Failure Demand - Demand that arises from a failure to do something; or, a failure to do something right, for the customer.

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Understanding Failure Demand

Failure Demand exists in almost all service systems.

Failure demands are typically second or subsequent demands placed by customers when they haven't received the response they wanted to a **Value Demand**.

In public services, by far the most common type of failure demand is **progress chasing.**

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Examples of failure demand

The types of failure demand that we encounter are service specific, but there are themes that are common:

• When am I going to get help?

• You came and repaired x, but it still isn't working

• I don't understand the letter you sent me

• The product you've provided is the wrong size/wrong colour/has a defect

• Your letter says you'll visit/I'll visit you on this date but that doesn't work for me

The common feature in all of these cases is that the service has failed to meet the customer requirement at the first time of asking.
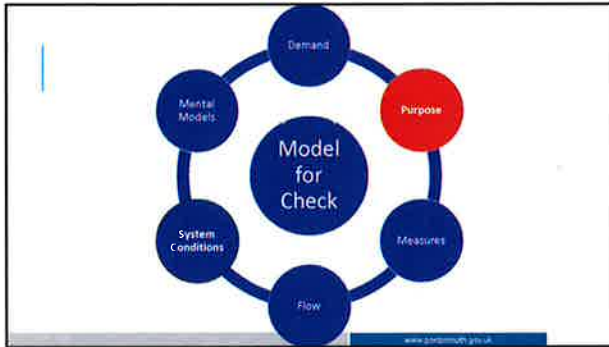
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Failure demand as a feedback loop

When a service receives a lot of failure demands, the task of responding erodes capacity and further weakens the service's ability to deal with value demand.

This is a common dynamic in services under pressure - failure demand exacerbates the situation, and creates additional impacts on staff morale, retention, etc.
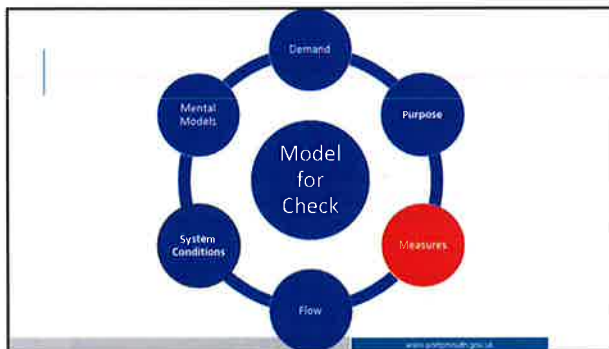

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Measures/Capability of Response

When trying to understand **measures**, we're interested in two things:

1) What can the existing system of measurement tell us about the performance of the system?

2) How capable is the current system in achieving purpose?

In most interventions, bespoke measures are sourced to enable us to answer (2).

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Five tests of measurement

All measures of a service or system should:

1) Help us to understand and improve;

2) Be derived from the work, accurate, and complete;

3) Demonstrate capability and variation over time;

4) Be available to staff so that they can participate in improvement; and,

5) Be used by leaders to actively improve the performance of the system.

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What do we find?

•Some services are subject to **national reporting requirements**, which often mean that the capacity to gather, analyse, and report on performance is consumed measuring things that are defined as important elsewhere.

•**Targets** are common. At best they provide no knowledge; more often they distort the system.

•**Crude means of analysis**: RAG ratings and binary comparison are common.

•Some services operate without *any* operational measures.

•It is common that data being used is related to workload (counting things) and budget position with little data (sometimes none) that make visible effectiveness, efficiency, customer outcomes, or where opportunities for improvement may lie

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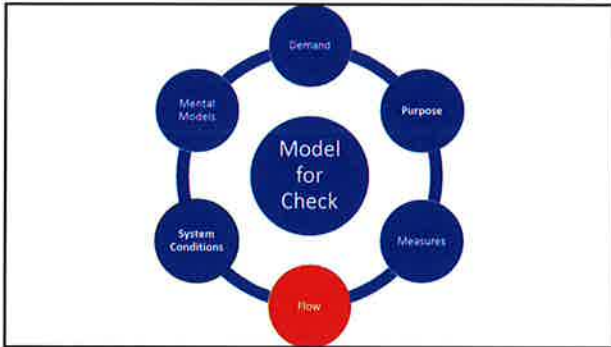
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Outside-in perspective

When mapping **flow**, we try to enable leaders and staff to see their system from the customer's point of view.

Intervention teams have already identified where and how demands hit the system. Now we ask them to follow what happens as the service responds.

How much work is required of the staff responding to demand?

Can they complete the work themselves?

Are their delays or breaks in the process flow?

How much of the work is delivering **purpose**?

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Categorising Value vs Waste

In our approach to 'Check', we use this categorisation, applied to every process step, independently of each other.
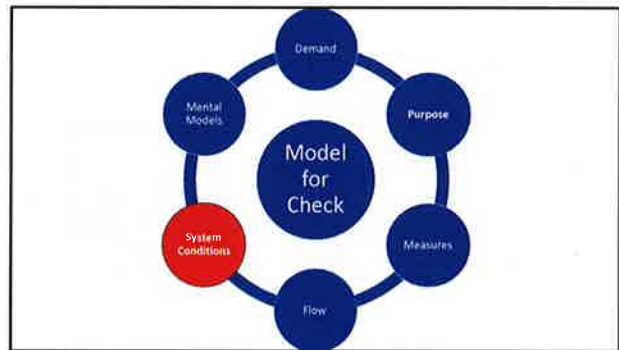
Value Work = Directly delivers purpose

Type 1 Waste = Can be directly removed

Type 2 Waste = Designed in, so must be designed out

Type 3 Waste = A product of the law, regulations, or contracts

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System Conditions

System conditions are, quite literally, the conditions under which work happens.

They reflect the policy context, the operating environment, and crucially, the choices made by leaders about the design and management of work.

This can relate to:
•Process design
•Service structure, including staffing roles and numbers
•Budget
•Priorities and performance management

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Beginning to answer 'why?'

Having understood how and why customers place demand with the system, and the workflows that are triggered in response, identifying system conditions enables us to begin to identify *why* the work looks like it does.

So, for example...

The work may start and stop repeatedly, because of **fragmentation**.

The service offered to customers may not meet their particular needs because of **standardisation**.

Staff may have to fill in redundant fields on a form due to **process design**, or perhaps the choices of **IT software** that we've made.

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Fragmentation

Fragmentation can refer to the division of labour - workflows having a series of built-in hand-offs, or to the completion of work being intermittent or stop-start over time.

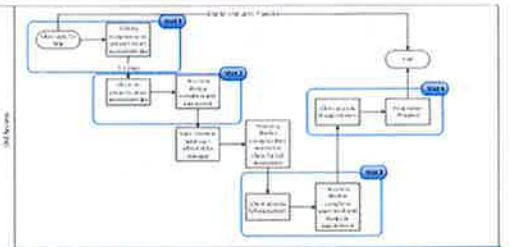The former creates the conditions for miscommunication and delay.

The latter creates the conditions for progress-chasing failure demand.

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Fragmentation - Recovery Hub

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Targets

Targets are a very common management tool in public and private organisations. Often used in order to enforce standard operating procedures/ways of working.

In a systems view of the world, targets too often create a *de facto purpose* of hitting the numerical target, rather than doing the job properly. The work therefore ends up being distorted.
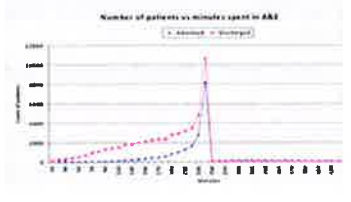

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Unintended consequences...

In some systems, targets can become so dominant that they shape the service response to customer demand.

Before the pandemic, this graph had a similar shape for most A&E departments in the country.

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Targets

Call handling targets are very common in all sectors. They are an attempt by managers to standardise the duration of customer contact and save time/money.

I'm a DWP call handler and have no time to care about your disability claim
Anonymous

When you cry down the phone I feel like crying too, but if I speak to you for longer than 23 minutes and go off-script I risk losing my job

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Standardisation

Feature: The Sexual Health Service provided standard 30-minute appts with a nurse. These were booked by the front end with minimal clinical enquiry.

Outcomes:

- Significant minority of appts were clinically inappropriate, resulting in abandoned appointments;
- The length of time booked was only ever right by accident; and,
- A significant minority of appts *should* have been booked instead with a doctor, meaning a second appt was necessary, increasing opportunity for unwanted pregnancy or disease transmission; and,
- A minority of appts could have been managed by a (much cheaper) healthcare assistant.

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Functional Specialisation

Feature: Certain tasks were functionally specialised, such as nurses having to sign-off on vasectomy results returned from the lab where there was **no clinical interpretation required** (a binary result: there was either spermatozoa present in the post-op semen sample or not!).
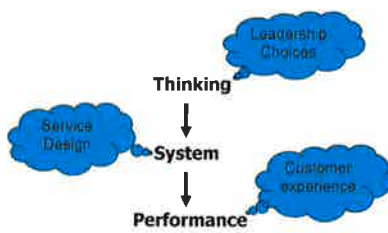
Outcomes:

- Flow of work broken up;
- Expensive nursing capacity wasted; and,
- Implicit mistrust in administrators' competence.

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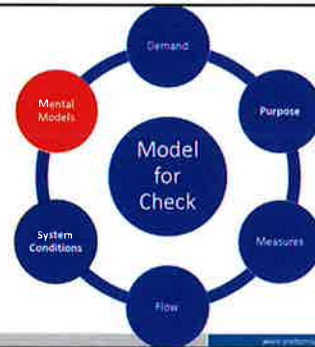
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Thinking/Mental Models

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The Thinking Contrast

| Conventional Management Thinking		Systems Thinking
Top Down	Perspective	Outside-in
Functional Specialism/Taylorism	Design	Demand, value, and flow – variation theory
Separated from work	Decision-making	Integrated with work
Budget, output, activity targets, standards, etc	Measures	Related to purpose, capability, variation
Extrinsic (carrot and stick)	Motivation	Intrinsic
Control	Ethos	Learning
Projects, plans, best practice	Change	Emergent, based on learning
Make the numbers and manage the people	Role of Management	Act on the system
Contractual	Attitude to Customers	What matters?
Contractual	Attitude to Suppliers	Partnership and co-operation

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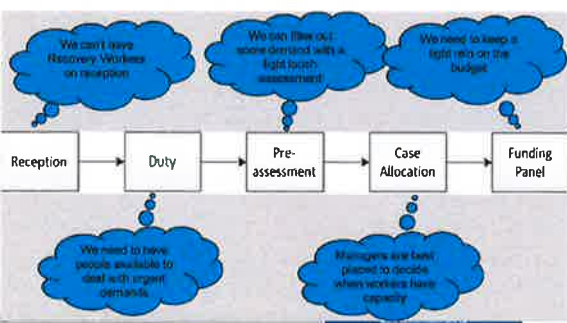
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The End of Check

At the end of all 'Check' phases, the findings are presented in detail to the sponsor(s) of the work, who are then given a binary choice:

Leave the system as it is

Or

Initiate a redesign

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The intervention model
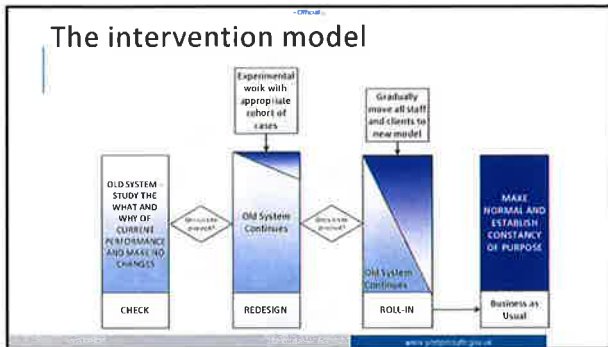
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Beginning a Redesign

Most of the time, a Redesign follows relatively quickly after the completion of Check, and uses the same team of staff, which is important as the group will have learned an enormous amount from Check and hopefully have had some normative learning experiences.

Occasionally, there are practical barriers to beginning a Redesign immediately; for example if the learning from Check showed that a particular system condition needed to be addressed before a Redesign could begin, then this might cause a delay.

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Typical Change vs Redesign
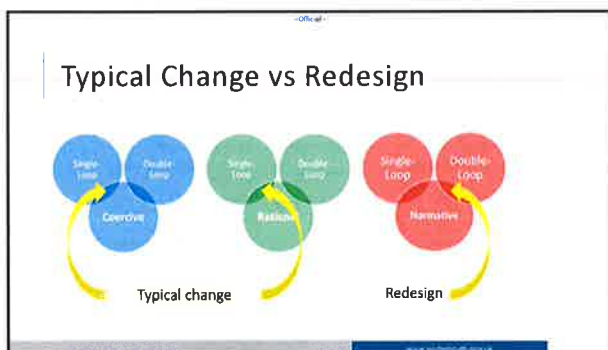
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Benefits of a normative approach

- Involves members of the change system in working out programme of change
- Recognises the importance of values, attitudes, and relationships
- Reduces influence of power dynamic and encourages collaboration between management and staff
- Enables deeper investigation of assumptions and decision-making
- Builds capacity for further beneficial change

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Basis of Redesign

In most environments, we will have learned from 'Check' what the causes of sub-optimisation in the system are. This will enable the team to develop one or more hypotheses as to where the leverage for improvement might lie.

- Action-based learning in a controlled environment

- Small scale team receive live demand and respond by trying to achieve 'perfect flow'.

- Work designed around 'value steps', using rules and principles

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Principles of Redesign

1) Customer Sets the nominal value
2) Only do the value work
3) Work flows 100% clean
4) Single piece flow
5) Pull not push
6) Best resource at the front end
7) Decisions based on facts and data
8) Measures relate to purpose

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Completing the work

Most redesigns will involve the sponsor of the work agreeing to suspend or alter certain processes, policies, or ways of working for the sample of demand being dealt with by the team, to create the space for experimentation.

Once the team have established how they intend to work, they then take demands, one at a time initially, to begin to learn whether they can overcome the obstacles and issues identified in Check.

Learning is logged throughout, and a temporary set of measures will typically be put in place to track performance. Redesign is complete when either we cease to learn anything new, and/or we have assembled sufficient quantitative and qualitative evidence to establish how near to 'perfect' we can get.

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The end of Redesign

As with the end of Check, findings from Redesign are presented to the sponsor of the work, and again they have a binary choice:

Scale up and normalise the changes (ie begin the roll-in phase)

Or

Leave the system as it is?

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Examples of Redesign

We'll now talk about a few examples of the changes introduced via redesign, ranging from small process tweaks to wholesale system change...

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Improved flow between ASC's sensory service & HNB's technician service

Old system
- Some Sensory assessments require an installation by a technician such as an electrician.
- Demand was placed by the Sensory Service on the technician service by filling out a form, enabling an audit trail.
- Outcomes: anything up to 48 days was statistically normal, though some cases were 100+ days; technician service often failed to make contact with the client first time; progress-chasing failure demand was common; in- and out-group relationship between the two services.

New system
- Sensory Assessor called technician service during the assessment, enabling three-way conversation, in which client-directed time and date for assessment was selected.
- UCL of 48 days reduced to 10; every installation on time and date agreed with client.
- Progress-chasing failure demand eliminated.
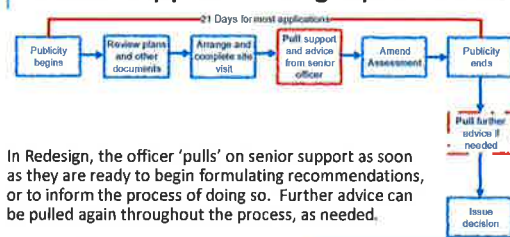- Better relations between the two services.

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Senior Sign-off – Planning System

In the old system, officers submitted completed reports to senior officers for consideration, most of the time after publicity had expired. This adds an average of nine days to the overall end-to-end time for applications
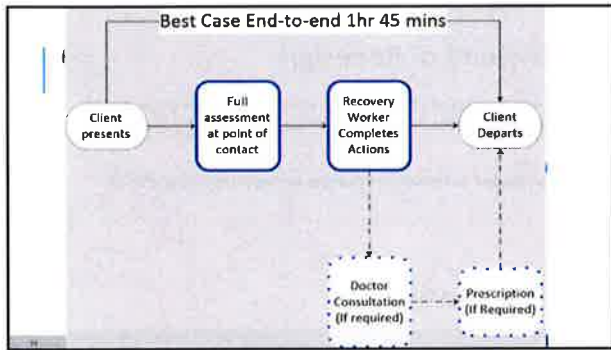
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Senior Support - Using a pull model

In Redesign, the officer 'pulls' on senior support as soon as they are ready to begin formulating recommendations, or to inform the process of doing so. Further advice can be pulled again throughout the process, as needed.

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Hampshire & Isle of Wight
Sexual Health Service

1

Background

The service is commissioned by Portsmouth, Southampton, Hampshire and IoW councils, serving a population of 1.5m.

PCC has a systems thinking consultancy, trained by Vanguard, which intervenes in services the council delivers and commissions.

One of the drivers for completing an intervention was to improve access to the service

The scope of this intervention has been contraception advice and provision, STI diagnosis and treatment, and reducing onwards transmission.

Following the success of an intervention in the PCC-commissioned Recovery Hub (substance misuse service), our PCC commissioner agreed with her peers from the three other LAs to commission a similar intervention in the Sexual Health Service.

2

Check

The purpose of the Vanguard Model for Check is to study the service as a system, revealing current performance from the patients' perspective and how that performance can be traced back to the leaders' thinking.

Key learning points:

- Extremely high frequency of 'failure demand' received each day, consuming a vast amount of resource.

- The end-to-end service was profoundly fragmented. Our front end was physically, managerially, and culturally separate from the rest of the service. Many clinicians didn't even know where the front end was located.

- The (non-clinical) front end was a false economy, inflating end-to-end cost of service as a result of various unintended consequences, such as booking inappropriate appointments, or booking with the 'wrong' clinician.

- A long list of, commissioner-set targets distracted us from our true purpose.

- Targets and standardisation restricted the system from absorbing variation in patients' needs and circumstances.

- Live observation revealed a lot of waste.

- The thinking of leaders and commissioners was grounded in conventional command-and-control management.

3

Redesign

We managed 314 patients' needs during the Redesign experiment.

I was deeply immersed, managing more than 50 of the patients myself. Other key contributors included our commissioner Hannah, another member of the SLT, two nurses and a doctor.

Changes included:
- o Maximising quality of first contact;
- o Meeting patients' needs at first point of contact when clinically appropriate;
- o When appts were necessary, absorbing variation in *when* patients wanted to be seen;
- o Instead of a standard 30 mins with a nurse, booking the length of time deemed appropriate, and with the right member of staff (e.g. 10 mins with a healthcare assistant, or 45 mins with a consultant doctor).

Outcomes included:
- o Much lower end-to-end cost of service;
- o Statistically significant reduction in DNA rate;
- o Patients booked with the right clinician *first time*;
- o Identifying clinical and social indicators at point of demand that would have previously been missed;
- o Lots of unsolicited positive feedback from patients; and,
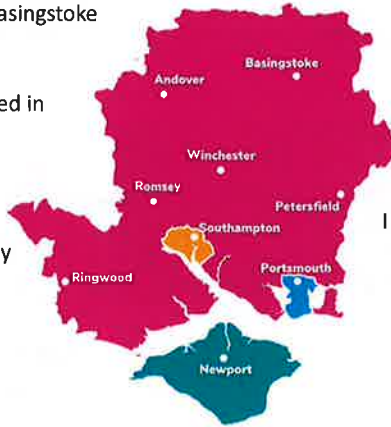- o Radical changes in the leaders' thinking.

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Roll-in

Began in late January with demand from patients in the Winchester, Eastleigh, Andover, and Basingstoke areas.

Portsmouth and SE Hants' demand followed in early June.

Each clinician receives a personalised, one-to-one induction, ensuring that quality is built in from the start.

The IoW's demand joined the new model in mid-May.

Targets and the associated RAG bureaucracy have been removed, replaced by a suite of richly informative measures.

I have been heavily involved in delivering staff inductions and leading Roll-in.

Basingstoke
Andover
Winchester
Romsey
Petersfield
Southampton
Portsmouth
Ringwood
Newport

Southampton, the New Forest, and Aldershot's demand has joined the new model at the beginning of November.

5

Some of the Roll-in outcomes...

1,000 fewer failure demands per month from Portsmouth patients

3,000 fewer failure demands per month from patients across our whole geography

Calls per week from *unique* patients has risen by **20%**

Statistically significant reduction in DNA rate

80% of patients have clinical value added at **first point of contact**, compared with the old system

About 20% of demand is satisfied at first point of contact, saving many clinic appointments

Doctors report that their clinic slots are now filled with **appropriate patients**

Clinicians have reported **fewer 'abandoned' appointments**, as planned treatments are clinically appropriate

6

Feedback

I love the new system when I'm in clinic – it's really helpful to know exactly what the patient needs and that I've got the right length of appointment to do everything in time.
SHS Nurse

We haven't had a single complaint about PrEP access come through for Solent for months!
THT

Appointment was made easily using the call back option. Nurse was so helpful and I was able to book an appointment easily to suit me
Portsmouth resident

It's great to be able to meet patients' needs on the phone– I've managed three patients already today with TBP and advice. They would have been booked into appointments they didn't really need in the old system.
SHS Nurse

"Patients booked in consultants' clinics are more appropriate [than those booked in the previous system]."

Consultant Doctor

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Feedback

"It brings a sense of comfort knowing that the patient is getting quality care and advice from the first moment they contact the service, and that quality is being implemented at every point of contact."

Nurse

"Patients are surprised that we try to accommodate their needs and very thankful... we no longer see the amount of angry and frustrated patients that we used to."

Receptionist

"Patients and staff are much happier... I have had brilliant feedback from both... you know exactly what they [patients] are coming in for so you can tailor your consultation accordingly... patients are much better prepared when they arrive."

Locality Lead

I can't believe I'm seeing the same nurse I spoke to on the phone! That's amazing!
WEA resident

Director's Closing Words

- Systems thinking now defines how I think – from measures to motivation to the design of the service.

- I recognise that changes we used to make were single-loop, rooted in conventional Western management thinking.

- I now see the importance of understanding the end-to-end system from the patients' perspective. Without this end-to-end, outside-in perspective you cannot understand the true cost of the service.

- I have learned a lot about the importance of *normative* change, rather than rational. This has only been possible because I've been immersed in the learning. This isn't something you can delegate.

- What we've experienced during the scaling-up of the new model has highlighted the importance of investing the time to get the staff individually trained on a personalised basis, building-in quality rather than relying later down the line on 'inspection'.

- Good measures of variation mean my management team and I now *know* what's happening, *as* it happens.

- We now have the tools to embed a culture of continuous improvement, and plan to sequentially intervene in other services within the sexual health service line.

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Appendix 4

Estate Services

Continuous improvement

1

Background

- Green and Clean – intervention 2007 – roll in completed in 2009
- 2008 moved from part in house/part contracted out to fully in house provision – includes some specialist cleaning – high level window cleaning
- 2012 – Bulky refuse collection in house
- 2013 – Public Conveniences in house
- 2014 – bin cleaning contract ended – service in house
- 2016 – Clean City intervention – covered Estate Services
- 2019 – Central resource team established
- 2022 – G&C and Estate Services co managed by Estate operations Manager

2

G&C intervention - outcomes

- Removal of schedule and specifications – no more cleaning clean
- One job at a time
- Creation of <u>dedicated manager and supervisor teams</u>
- New database to track the work – helps understand the work, issues and leaseholder and other services cost recovery
- Investment in equipment, infrastructure and materials
- Intro of 'in the work' time

3

Green and Clean

- 2007 purpose – To keep the local area clean and tidy

- 2016 updated purpose – To help keep the City safe, clean and tidy and provide advice and support when needed

4

Continuous Improvement - Measures

- Cleaning - used to predict the work – with validation, ensures we get to blocks frequently enough – can respond to pulls too – and we analyse that to help us understand frequency required
- Gardening work – more predictable and have established stable rounds – measures in hands of the gardeners/supervisors to determine whether to start again or how long they could be allocated to another task
- Resourcing - allows us to allocate resources where and when needed and to make changes where needed eg weekend round

5

Continuous Improvement – bulky refuse

- The intervention improved the efficiency of the reporting and collection of bulky waste in Housing areas – average time of collection went from over 2 days to around 4 hours.
- Tonnage reduced slightly as bulk attracts bulk
- Post intervention – in the work time followed the flow from report to collection and established there wasn't a coherent approach to the investigation part of the work
- Introduced steps for investigation and changed reporting protocol and bulky waste reduced by 40%

6

Continuous improvement – system conditions

- Keys/access issues
- Equipment - what do we need? Link to other issues – H&S, efficiency, environment - eg Imop, HAVs
- Vehicles – links to efficiency and environment
- Water supply – removing unnecessary trips to collect water
- Materials – from 37 products to 6 core products – made choice simpler for staff (plant based, work with cold water and reusable microfiber equipment)
- Management team – brought together management of G&C and EWs as services are interlinked and share purpose

7

In the work - a culture change

- Introduced regular time spent with staff
- Identifying barriers to doing the work well – managers focus on these areas in order to act upon them
- Engaged workforce – empowered to raise issues and come up with solutions
- Drives work related changes – managers will see barriers and link to other issues
- More supported workforce
- Less disciplinary issues
- Service wide issues log

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