GREATER MANCHESTER ACADEMIC HEALTH SCIENCE NETWORK

NHS

North West Utilisation Management Unit

Improving Access to Timely Care

Precision Planning & Tactical Systems Management

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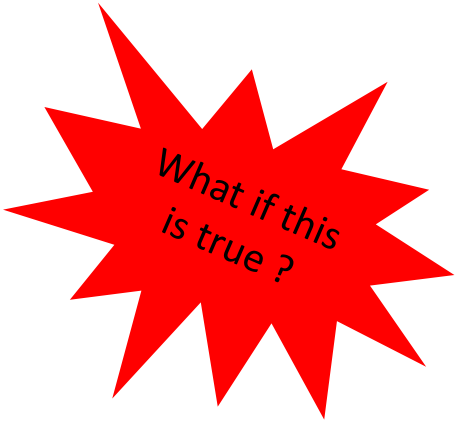
Health Innovation Manchester

Hypothesis



"Understanding how

- *health care is organised,*
- *the dynamics and structures of the organisations providing care &*
- *the characteristics of the population that attend and are admitted to hospital*

can lead to targeted action to improve access, timeliness and outcomes"

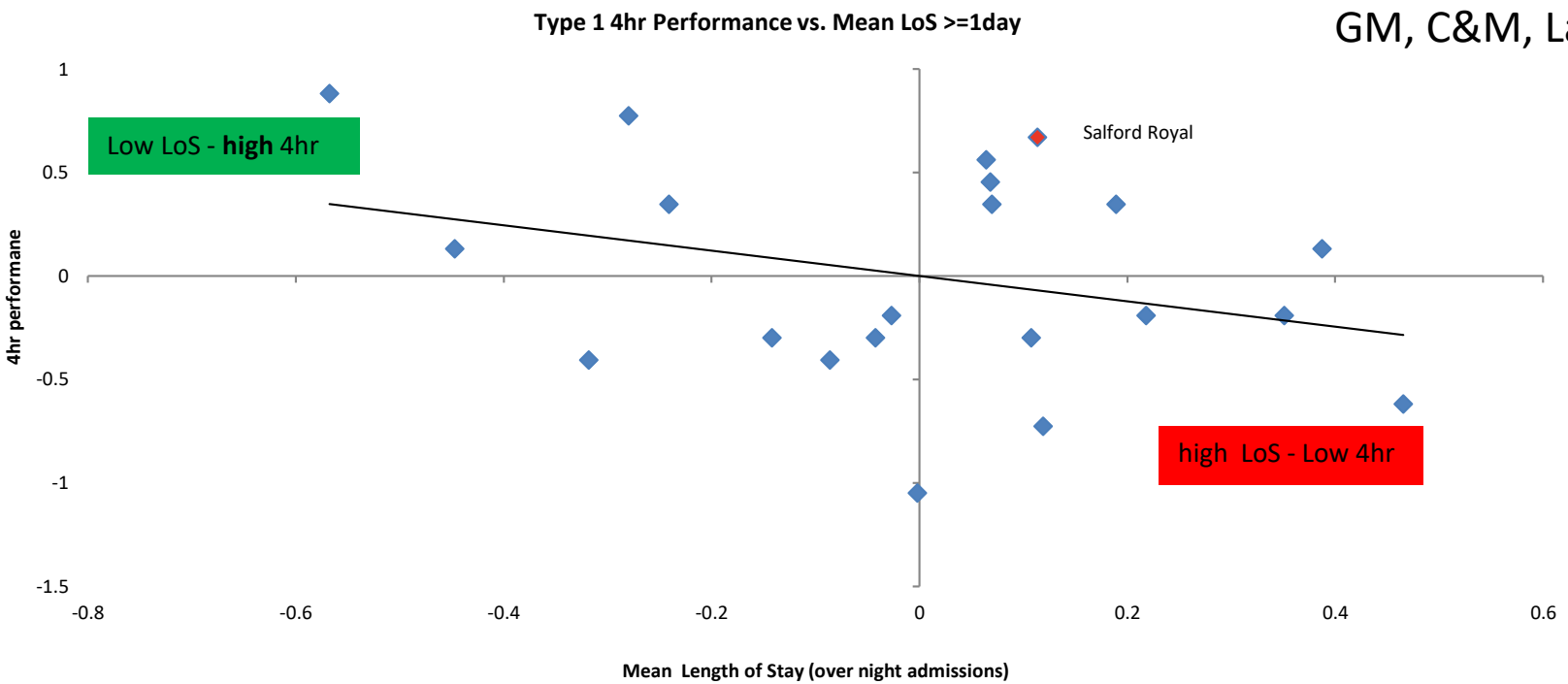
Maybe it is, but we'd need to ask some more questions ?

- Do we understand population behaviour ?
  - By month ? By day ? By hour ?
- Do we understand system behaviour ?
  - By month ? By day ? By hour ?
- Which is easier / better ?
  - Vaccination ?
  - Intensive care ?
- Are there RISKs ???

Have we any evidence ?

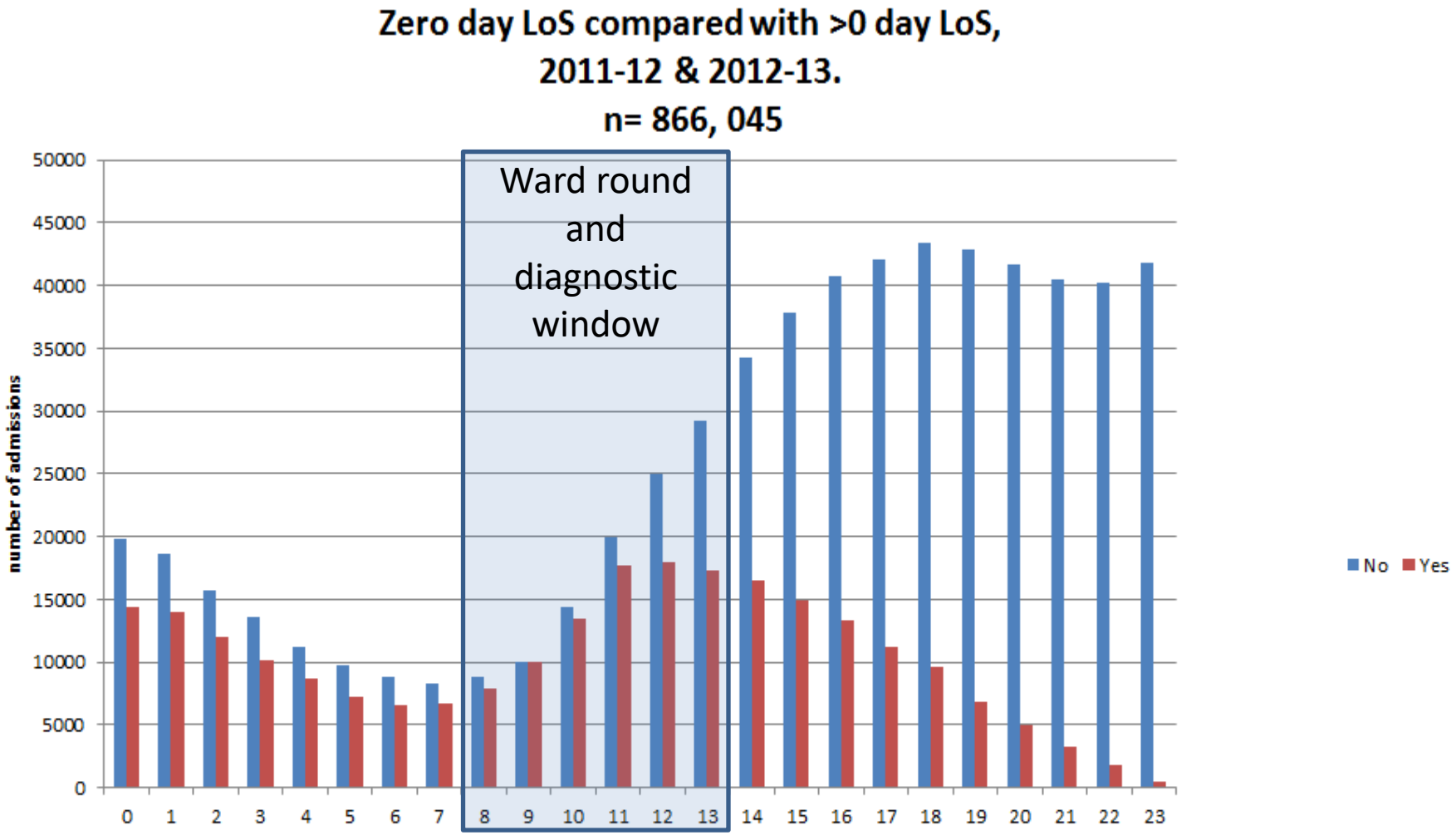
The evidence says

GM, C&M, Lancs n21



Statistically significant relationship between length of stay and AE 4hr $p < 0.05$

Organisations with below regional median length of stay (6.8 days) are **2.67** more likely to have above median AE performance (85%) than organisations with above median average length of stay.



The ability to "turnaround" patients before midnight (zero day LoS) is greatest for 9-10 am admissions with late evening potential depreciating rapidly

ADASS / AQuA whole system quality and efficiency locality benchmarking summary table

	Population aged 65 and over	(a) Non-elective admissions aged 65+ per 1000 pop 65+	(b) Non-elective bed days aged 65+ per head of 1000 pop 65+	(c) Non-elective re-admission rate within 30 days aged 65 and over	(d) Non-elective re-admission rate within 90 days aged 65 and over	(e) No of bed days - delayed transfers of care aged 18+ per 100,000 pop	(f) Proportion of people aged 65+ discharged direct to residential care	(g) Permanent admissions to residential/ nursing care aged 65+ per 100,000 pop 65+	(h) Proportion of local authority ASC spend on aged 65+ on res/nursing care	
Source System	NASCIS	SUS	SUS	SUS	SUS	UNIFY	SUS	Local Authorities	NASCIS	
Date range		Apr 15 - Mar 16	Apr 15 - Mar 16	Apr 15 - Mar 16	Apr 15 - Mar 16	Apr 16 Bed Days	Apr 15 - Mar 16	Apr 15 - Mar 16	Apr 13 - Mar 14	
Locality		Less is better	Less is better	Less is better	Less is better	Less is better	Less is better	Less is better	Less is better	TREND
Local authority area	20,550	288	2954	17.0%	26.7%	389	5.3%	647	59.8%	Deteriorating
	28,482	261	[illegible]	16.7%	26.6%	399	0.9%	1,155	61.1%	Improving
	46,793	249	1916	18.1%	28.1%	455	1.6%	831	52.2%	Deteriorating
	32,849	223	1854	15.4%	23.8%	316	1.7%	865	51.8%	within 5%
	80,564	228	1932	16.0%	25.8%	701	3.5%	640	48.4%	Improving
	67,564	240	2117	16.9%	26.2%	286	3.9%	789	61.3%	Deteriorating
	113,155	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.7%	Deteriorating
	21,013	303	2651	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.5%	Deteriorating
	24,365	347	2640	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	59.0%	within 5%
	232,929	241	2390	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	56.6%	within 5%
	69,305	331	2765	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.9%	within 5%
	49,354	347	3346	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	48.7%	Improving
	36,007	265	1905	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	54.0%	Improving
	33,741	261	1917	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52.1%	Improving
	35,337	333	2424	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	68.7%	within 5%
	61,153	278	2178	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	63.6%	Deteriorating
	34,845	289	2314	17.3%	27.6%	121	2.2%	801	52.4%	within 5%
	55,624	291	2524	17.4%	27.6%	520	2.9%	588	52.3%	within 5%
	37,790	297	2846	18.9%	29.3%	610	1.1%	685	53.1%	Improving
	39,229	277	2733	16.8%	26.8%	955	1.7%	589	51.3%	within 5%
	36,066	261	2359	15.1%	25.4%	279	3.0%	713	63.5%	Deteriorating
	58,039	253	1720	18.5%	28.2%	219	2.2%	684	53.2%	within 5%
	65,998	288	2345	17.6%	27.9%	122	2.0%	738	66.0%	Deteriorating
NORTH WEST	1,280,752	247	2147	17.4%	27.3%	443	2.5%	728	56.2%	within 5%

Lower bed day rates are seen in higher performing health and social care systems because these systems understand that capacity is the ability to expedite care and control length of stay

AQuA Advancing Quality Alliance

Benchmarking order (exc trend)	
Best 1-6	
7th-12th	
13th-18th	
19th - 23rd	

PLEASE SEE DATA CAVEATS ON PG 5

North West Utilisation Management Unit

NHS directors of adass adult social services

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NORTH WEST	1,280,752	247	2147	17.4%	27.3%	443	2.5%	728	56.2%	wi

The local areas with the highest spend on permanent residential care are

a) Frequently lower spenders on supported step down
b) Have higher DTOC rates
c) Tend to lower ED performance

AQuA
Advancing Quality Alliance

Benchmarking order (exc trend)	
Best 1-6	
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19th - 23rd	

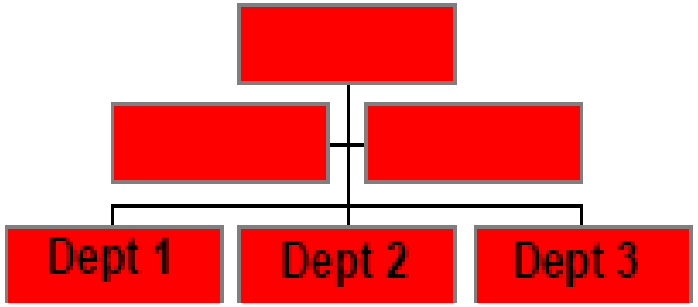
PLEASE SEE DATA CAVEATS ON PG 5

NHS
ada adult social

North West Utilisation Management Unit

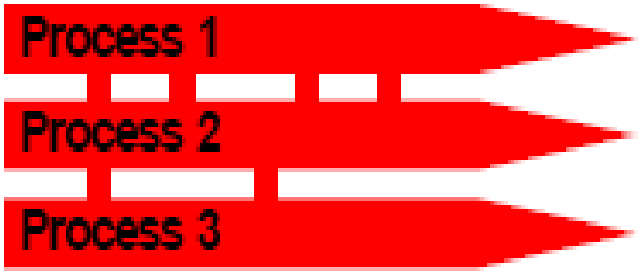
Step One

Silo thinking "v" systems thinking



Hierarchy/silo thinking

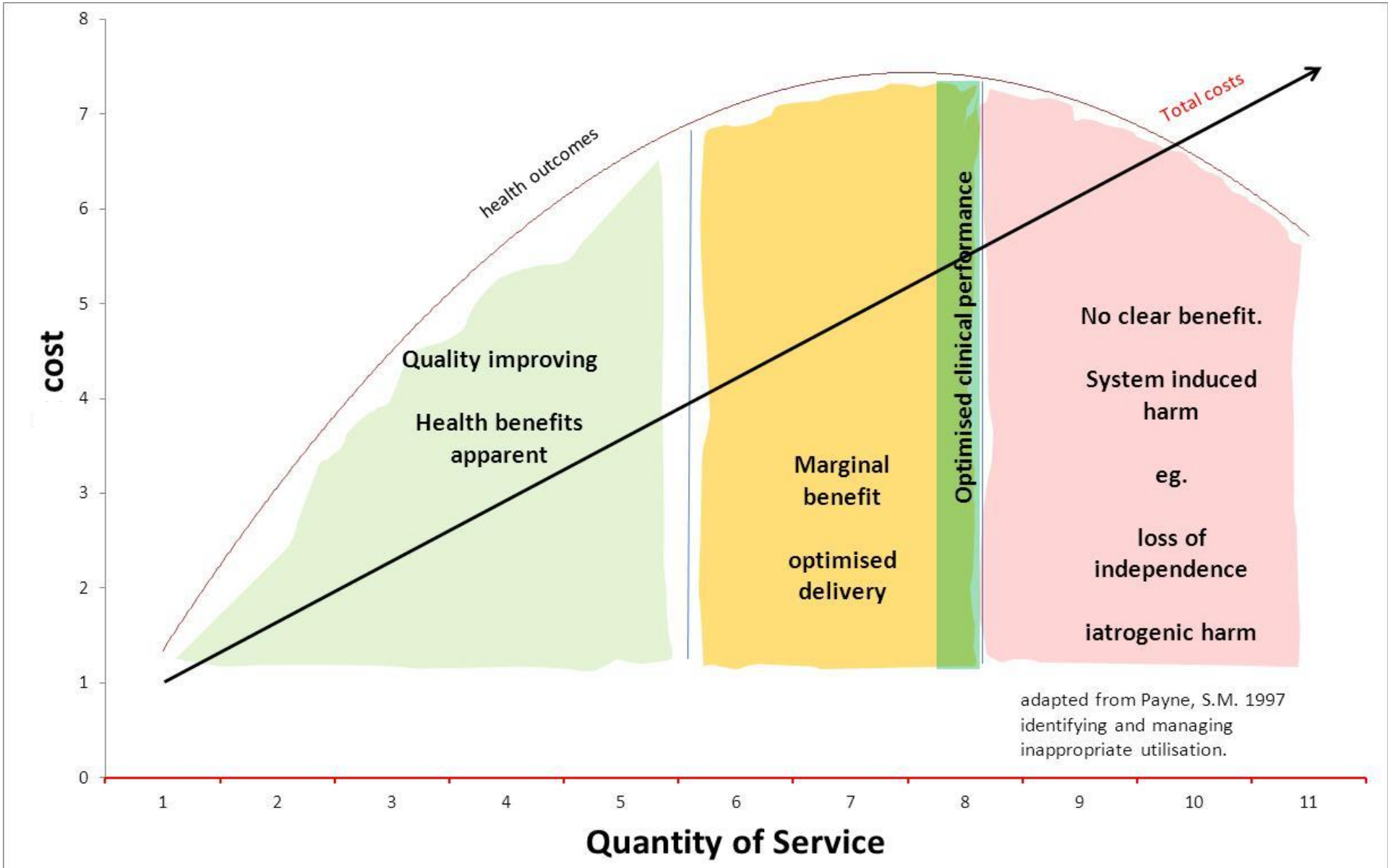
"The whole is the sum of the parts".
Give all parties strict numerical and quality criteria to meet and make sure each party hits its target.



Systems thinking

"The whole is the sum of the parts *plus the product of the inter-actions.*"
Bring all parties together to work on customer & process improvements.

Step Two : Understand pathway by pathway how much healthcare is needed at which point, trend sensitised and seasonally adjusted !



Step Three :
Understand the Risks and Rules

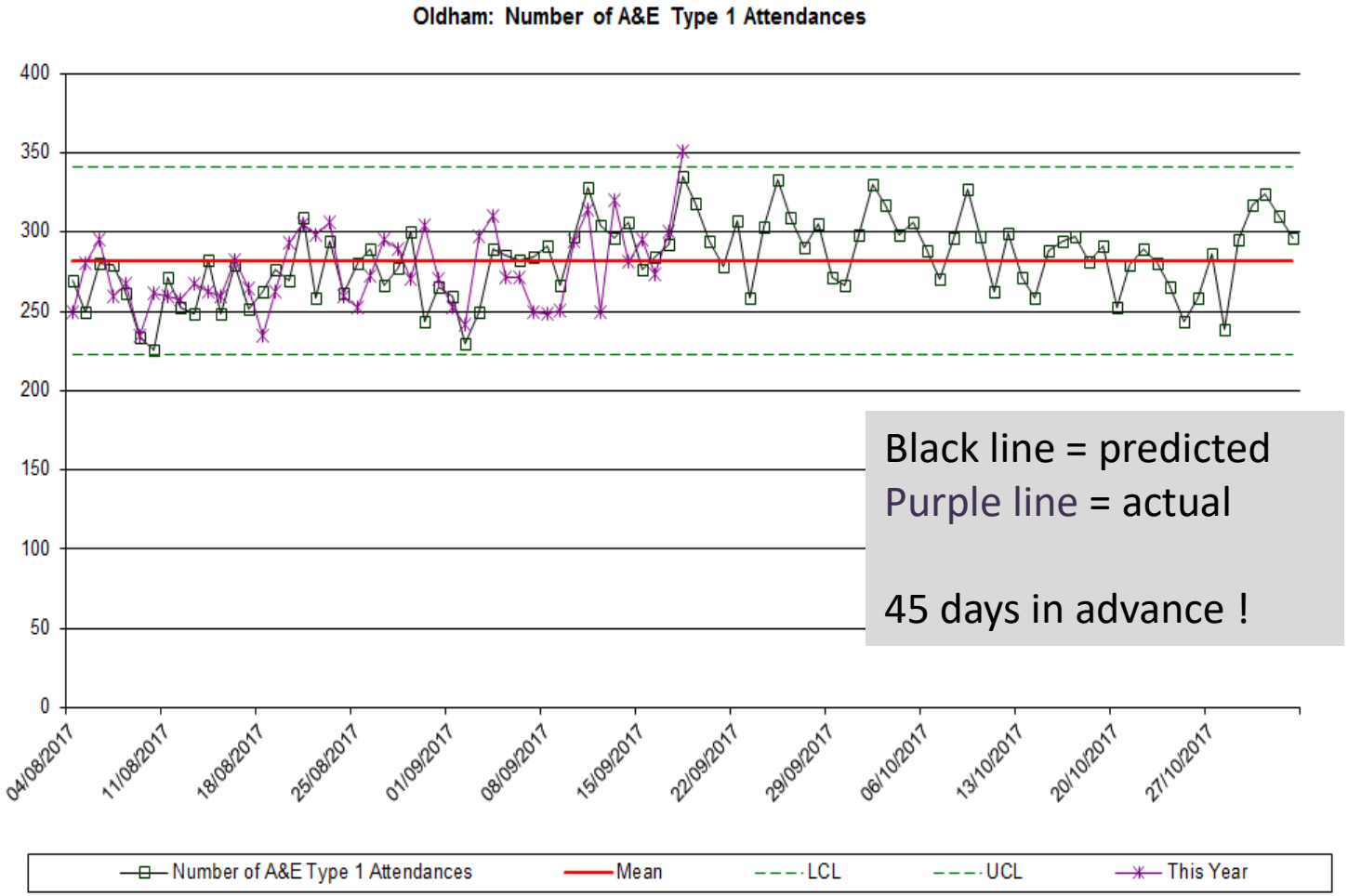
- There are no prizes for avoiding a crisis …
  - Don't be a systems thinker if you want an OBE
- Asking people to work differently is challenging
  - But that’s not the same as asking them to work harder …
- You can’t fix strategic problems with operational solutions
  - Some systems are the wrong shape and size and working harder will get you only so far !
- You can’t, mustn’t and shouldn’t promise that you’ll make it all better by March unless
  - You do want an OBE !
  - You have a magic wand (STF funding, no staff shortfalls, and a BCF that delivered £2 for every £1 spent etc.)
  - And your system is already the right shape, your staff always say ***“yes, now what's the question”*** and you have more energy than me!

Step Four : Apply the Principles

We injure more patients through poor process than through poor medicine…

….too much of our focus is on population behaviours with insufficient focus on systems behaviours.

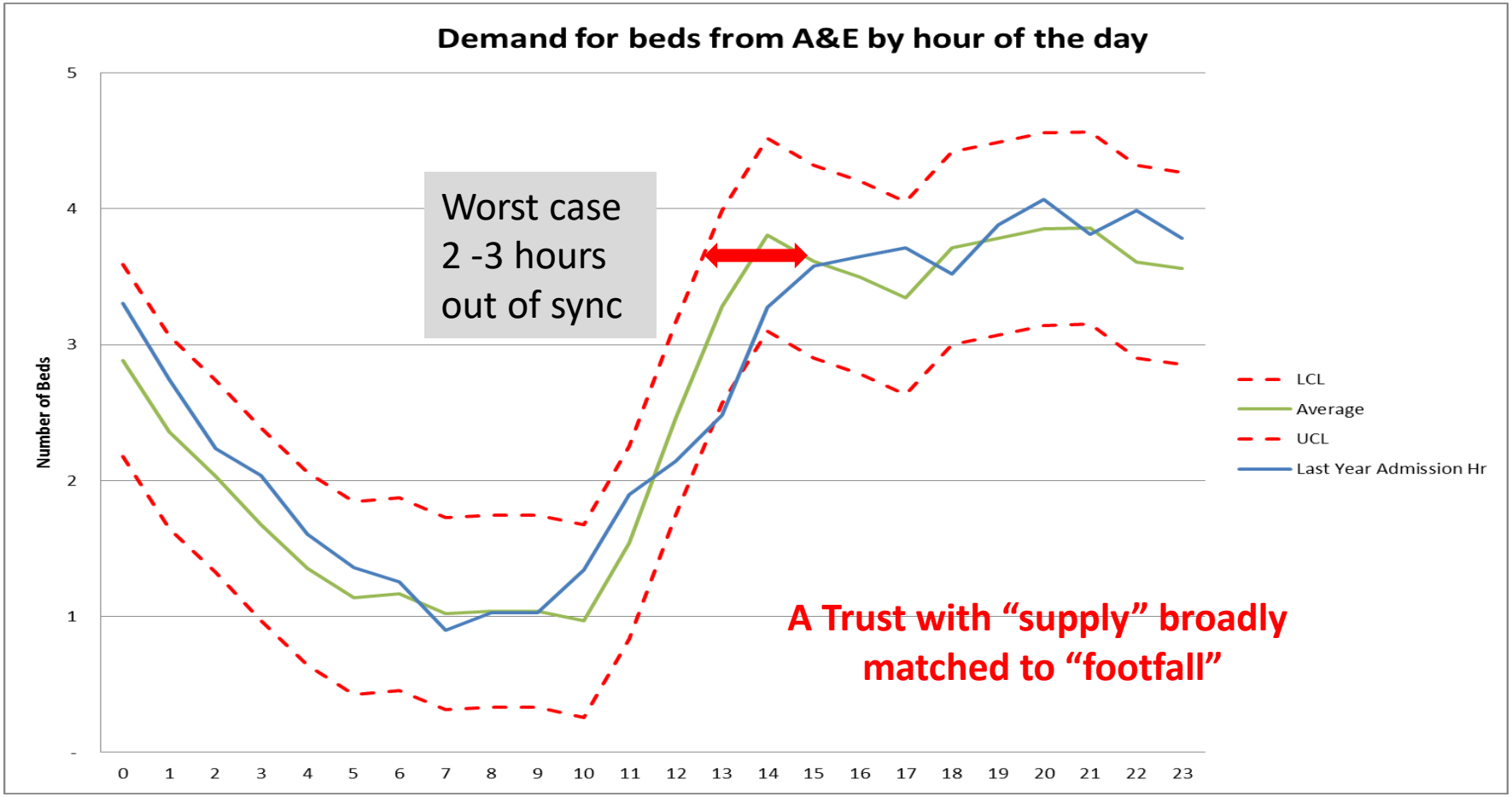
What if we knew how many people would need healthcare before they even became ill ?



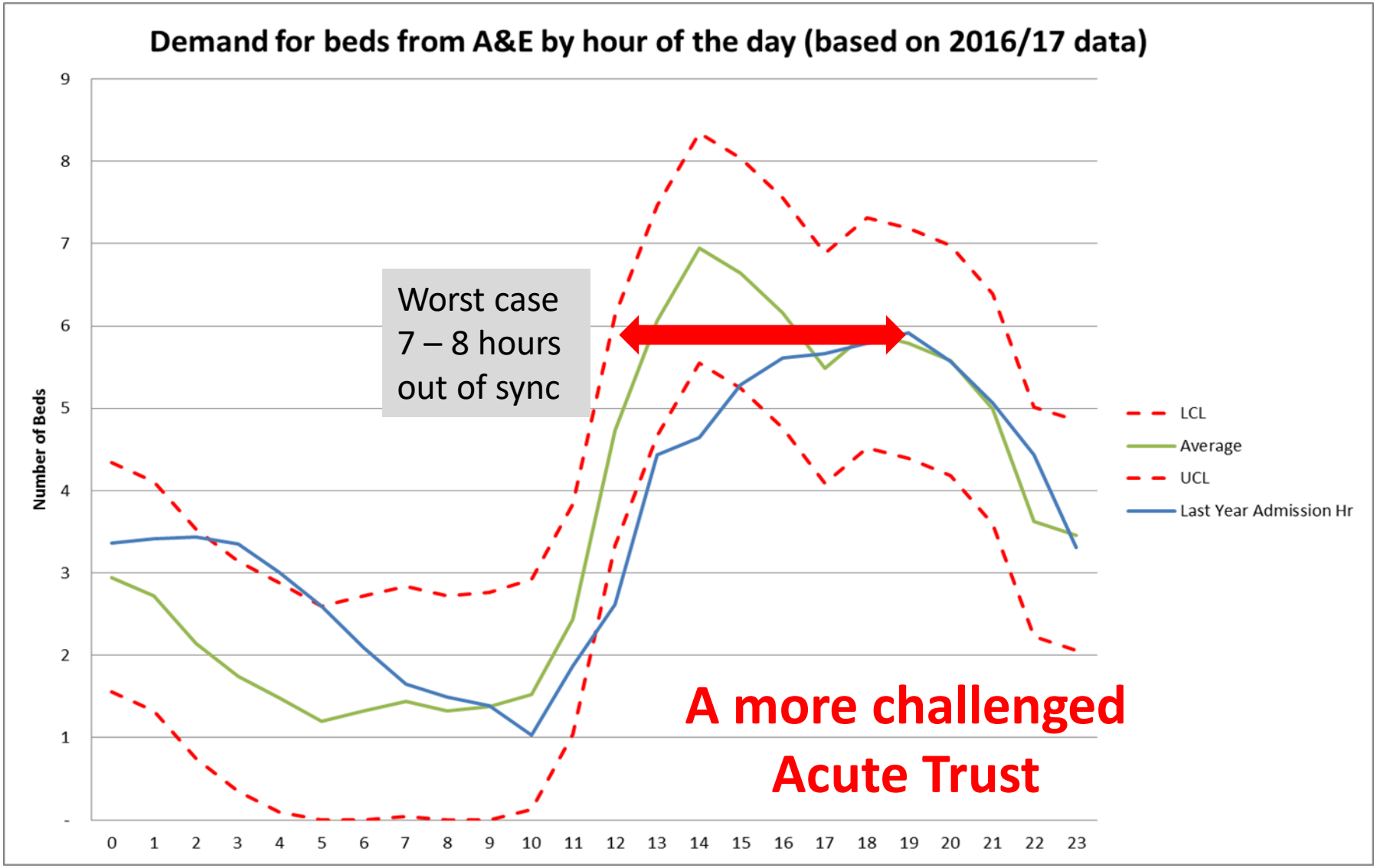
Black line = predicted
Purple line = actual

45 days in advance !

What if we knew the flows by hour and acted on the info ?



What if we didn't act ?



Modelling the impact of system re-designs

Choose admission method

Fine tune assessment processes

Choose Speciality

Choose Winter severity

Trust	Your local Trust
Admission Type	Non-elective
Main Spec	Total
Confidence in beds capacity	level 2: Greater Certainty of have beds but incre
Zero LOS	Excluding Zero LOS

LOS attributable to Zero LOS (in Hours) * An Hour is added to make the bed available for the next patient: 8 Hours

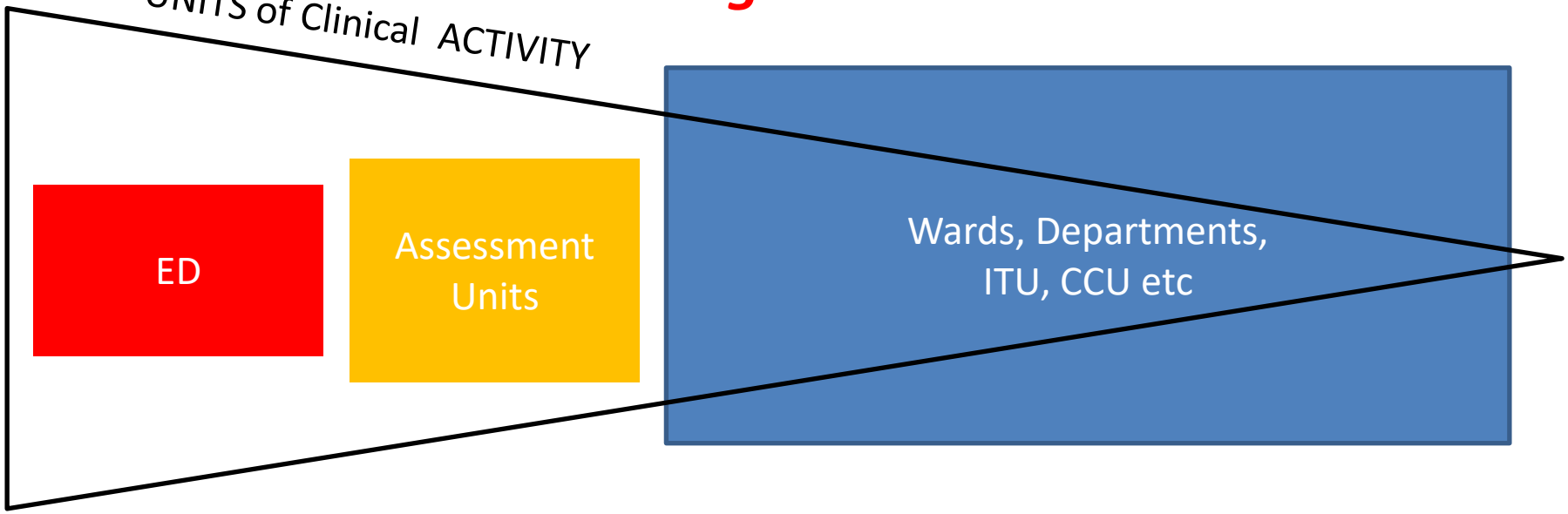
Qtr	Admissions	Average LoS	upper limit of activity	Beds Requ... Day based on average LoS	% Occupa...
2016-2017-1	62	7.50	78.16	586	100.2...
2016-2017-2	58	7.32	73.65	539	95.23%
2016-2017-3	59	7.68	74.71	573	104.44%
2016-2017-4	55	8.12	69.47	564	98.49%

Admission % Change	Los Day Changes
-2	-2

Qtr	Admissions	Average LoS	upper limit of activity	Last Year: Beds ...uired Per Day ba... ...verage Lo...	% Occupancy
2016-2017-1	61	5.50	76.75	422	72.19%
2016-2017-2	57	5.32	72.33	385	67.96%
2016-2017-3	58	5.68	73.37	416	[illegible]
2016-2017-4	54	6.12	68.22	418	[illegible]

Make achievable adjustments
OR
Increase BEDs

Challenged Trust



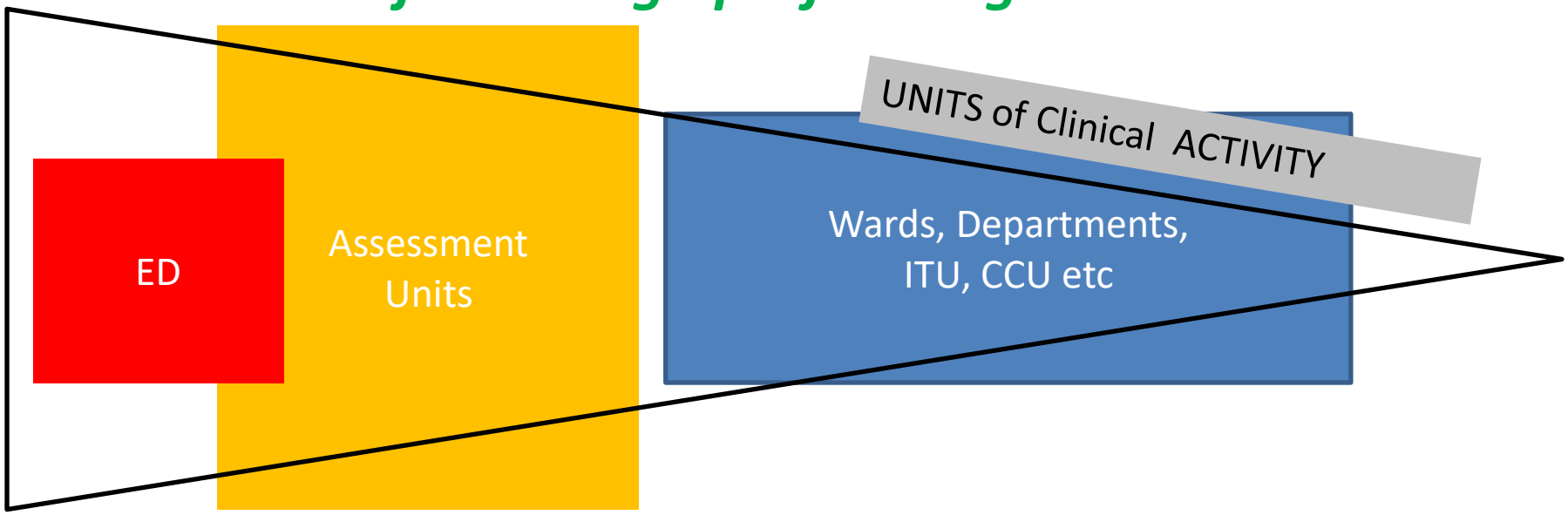
Characterised by

Most clinical activity undertaken at the beginning of the pathway (in ED !) with egress from ED impeded by insufficient assessment capacity = ED congestion

Assessment Units : throughput measured in days rather than minutes and reduced access to immediate clinical assessment and diagnostics. "Middle sick" patients **admitted to assess !**

Ward capacity : most clinical steps measured in days, discharge planning determined in weeks

Adjusted High performing Trust



Key characteristics

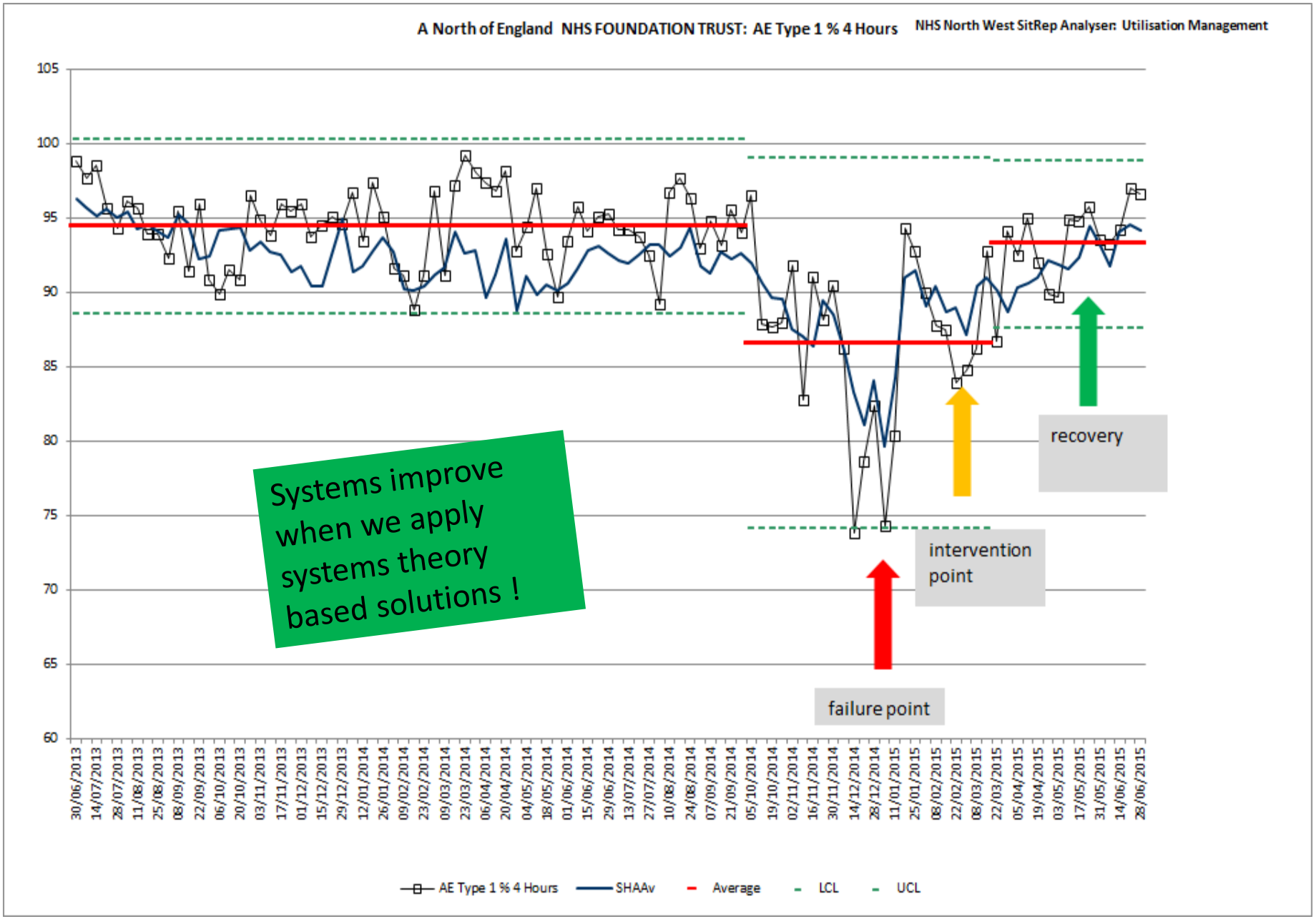
Significant increase in assessment capacity : 18/7 full diagnostic and clinical service.

“if it can’t be done in 4 hours, it can’t be done in ED !” mentality

Assessment Units / ACUs have sufficient capacity for 1 day assessments e.g. upper admission limit 80.5 admissions = circa 90 beds/ 90 bed days with zero day rate expectation @ 50-60%

Ward capacity focus moves to frail/ elderly and “top sick” patients. “Middle sick” patients achieve rapid turnaround. **Assess to admit philosophy.**

Net benefit : increase in average LOS BUT reduction in total bed days. Savings from reduction in ward (hotel) bed days.


A North of England NHS FOUNDATION TRUST: AE Type 1 % 4 Hours
NHS North West SitRep Analyser: Utilisation Management
105
100
95
90
85
80
75
70
65
60
30/06/2013
14/07/2013
28/07/2013
11/08/2013
25/08/2013
08/09/2013
22/09/2013
06/10/2013
20/10/2013
03/11/2013
17/11/2013
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16/11/2014
30/11/2014
14/12/2014
28/12/2014
11/01/2015
25/01/2015
08/02/2015
22/02/2015
08/03/2015
22/03/2015
05/04/2015
19/04/2015
03/05/2015
17/05/2015
31/05/2015
14/06/2015
28/06/2015
Systems improve when we apply systems theory based solutions !
recovery
intervention point
failure point
AE Type 1 % 4 Hours
SHAAv
Average
LCL
UCL

Is this resilient?

	30 days prior to challenge			30 days following challenge				
	Attendances	Breaches	Performance	Attendances	Breaches	Performance	Difference in performance (percentage points)	
Site 1	8675	1289	85.14%	8432	866	89.73%	4.59	
Site 2	6453	2358	63.46%	6473	871	86.54%	23.09	
Site 3	5422	1612	70.27%	5670	1077	81.01%	10.74	
Site 4	7968	2920	63.35%	8049	1367	83.02%	19.66	
Site 5	7481	2760	63.11%	4978	331	93.35%	30.24	* only 21 days since challenge date
Site 6	8114	2436	69.98%	1904	282	85.19%	15.21	* only 7 days since challenge date
						Average performance increase (percentage points)	17.25	
Average performance increase (percentage points) excluding those without 30 days post challenge							14.52	

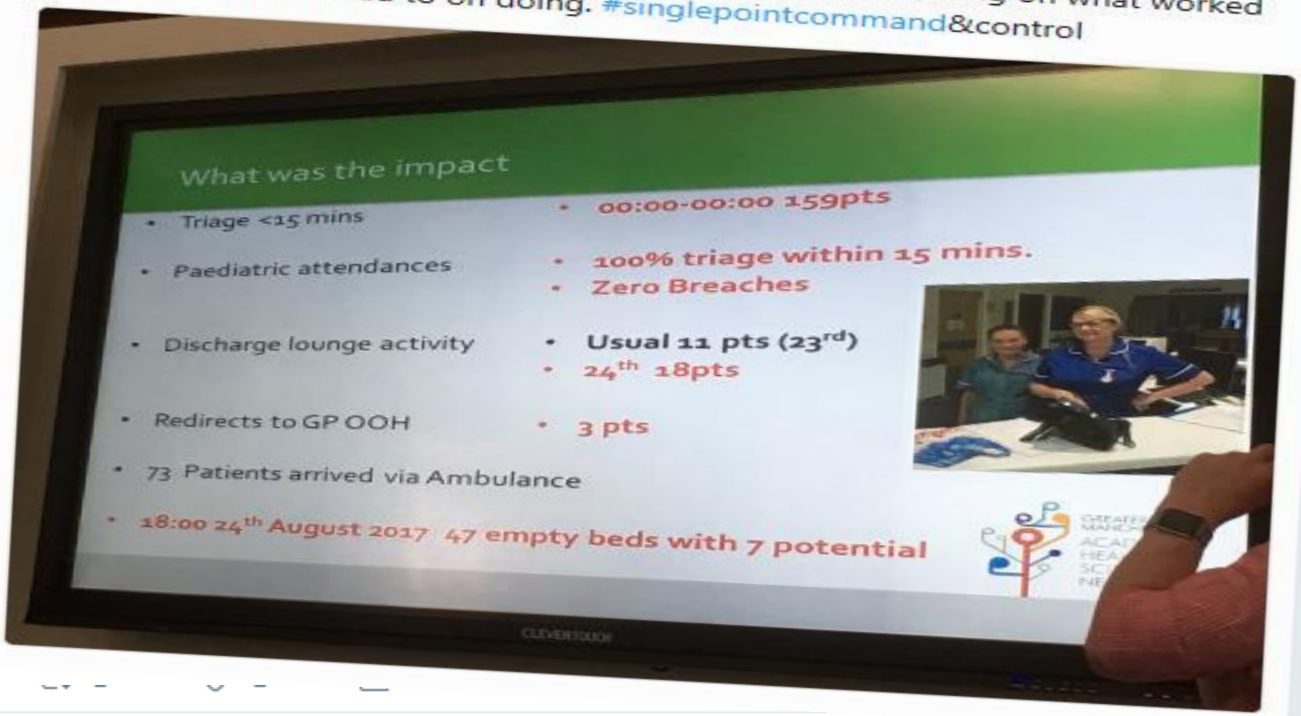
How do you do this ?

1. Activity modelling (Pred analysis)
2. Establish the clinical case/ rationale & reiterate quality rather than performance message
3. Brief all disciplines
4. Establish a single Trust wide control function
   - Re allocate management and some clinical resource
   - Bolster some under resourced services e.g. discharge lounge
5. Establish a ***tactical*** hub
6. Allocate Trust resources to known flow and pressures
7. Adjust "true capacity"

Oh and give your process a fancy name !! = *100% Challenge !!*

Mel Pickup @Mel_Pickup · Aug 25

@smcgirr31 impacts from the 100% challenge, teams reflecting on what worked really well and we need to on doing. #singlepointcommand&control



Mel Pickup @Mel_Pickup · Aug 25

@smcgirr31 and Darren feeding back on the UM 100% challenge. The stats don't lie yesterday patients experienced far less waiting in A&E 👍

Rachel L Macdonald, **Sean McGovern** and **Jonathan Morrow** liked a reply to you · Jun 30

Peter Cuthbert @petercuth01

As senior doc in SE Trust lst 4 nights saw big changes this wk.90 pts in dept Mon night @10pm,aprox. 25pts lst night.No standbys+fewer 🚑.🤔

Principles of a Control Hub

- Access to high quality predictive data
- A focus on tactical adjustment with operational responsibilities held in individual units
- Senior credible leadership based on the following principles
  - Manage on the basis of resolving difficulties ***between*** services (process issues)
  - Reduces duplication in decision making
  - Problem resolution in a single step
  - Works with the authority of the “executive”
  - Has a 18/7 presence
  - Active even in the absence of crisis (incident management without the incident)

Evaluation of 100% challenge processes

Feedback and evaluation suggest the following strengths and weaknesses

Strengths

- Single Point of control
- Regular, fixed, short meetings
- Less management time spent on troubleshooting
- Clarity of expectation
- All parts working together
- Crisis avoidance

Weaknesses

- Potential for duplicate requests
- Can be misinterpreted as being about performance
- Same pressures just spread differently ….
- Change of pace is daunting

The 6 Operational Things that make a difference!

- Understand and act on your system data : pre allocate resources !
- Initiate a Single point of Control! **Tactical Not Operational!**
- "1 discharge by 10am and 2 by noon!"
- Targeted action on Diagnostic Delays!
- 1, 1 & 1 – See in an Hour, Refer in an Hour & Move in an Hour!
- Active and Effective use of the Discharge Lounge!

Improve ward arrival time by 1 hours reduces LoS by 0.5 days!

237 Patients Attendances in ED and reducing time in ED by 10mins produces 40 additional available cubicle hours! (or 3.5 additional cubicles)

Then : assess if the "system is the right shape and size

When planning any clinical service It's helpful to think about it like this …

- Demand variation
  - What will the population do : are our pressures demand induced ?
  - What's the seasonal and trend impact ?
    - Don't think *" Are we busier than last year?"* think *" how busy do we expect to be ?"*
  - What does our information tell me we need to do ?

- Supply side variation
  - How do services (true capacity) respond ?
  - Four questions
    - What do the data suggest will happen?
    - How far can I adjust the service ?
    - What's the residual gap ?
    - What would be the **benefits** and **consequences** of attendance, admission and Length of stay initiatives ?
  - In three groups
    - Strategic plan : *what does my system need to look like next year and beyond ?*
    - Tactical adjustment : *what can I do with what I have through the next 6 months ?*
    - Operational response : *what do I need to adjust now, next week and for the next 6 weeks ?*