



## Gloucestershire Safety & Quality Improvement Academy

# Reducing Turnaround Times for Paediatric CSF Virology Testing

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# Introduction

- Local paediatric audit
- Aim
- Diagnosis current problem
  - Root cause analysis
- Understanding the system
  - process mapping, driver diagrams
- PDSA and measures
- Next steps

# Paediatric audit 2019

- NICE (2019) Fever in under 5s: assessment and initial management (NICE Guideline 143).
- Management of infants up to and including 3 months of age with fever and presumed bacterial infection
- Audit was conducted between 1st Jan-30th Aug 2019, cohort of 50
- Up to and including 3 months of age
- Admitted for > 24hours to Children's In-patients (CIP)
- Coded for fever, sepsis and unwell

# Paediatric audit 2019

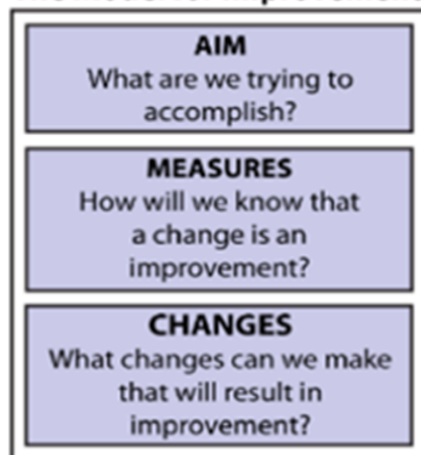
Standard	Target	Achieved
1. Blood culture should be obtained for culture	100%	100%
2. Urine sample should be obtained for culture & microscopy	100%	94%
3. CSF sample should be obtained for culture and microscopy	100%	100%
4. All samples should be 24 hours in the lab at 36 hours into admission	100%	62%
5. Viral PCR result should be available at 48hours into admission	100%	12%
6. TAT from LP to Viral PCR results being available to Clinicians	4.01 days (4.2 days)	

Diagnosis	%
Infants who were unwell and/or fever (38°C or higher) who did not have a bacterial or viral pathogen detected	46
Viral PCR positive for Enterovirus	32
Confirmed bacterial infection	16
Influenza A detected on NPA	6

# The Aim

## The Model for Improvement



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### SMART Aim:

To reduce viral PCR turnaround time from 4.2 days to 36 hours in 6 months

### Outcome measures:

TAT of viral PCR samples

### Process measures:

Number of CSF samples received from paediatrics for viral PCR

How many viral PCR results are available at 36 hours from the sample being taken

How many viral PCR samples were received in the laboratory within 12 hours of admission

### Balancing measures:

Increase in costs through bring assay in-house— reagents, maintenance contracts , staff costs

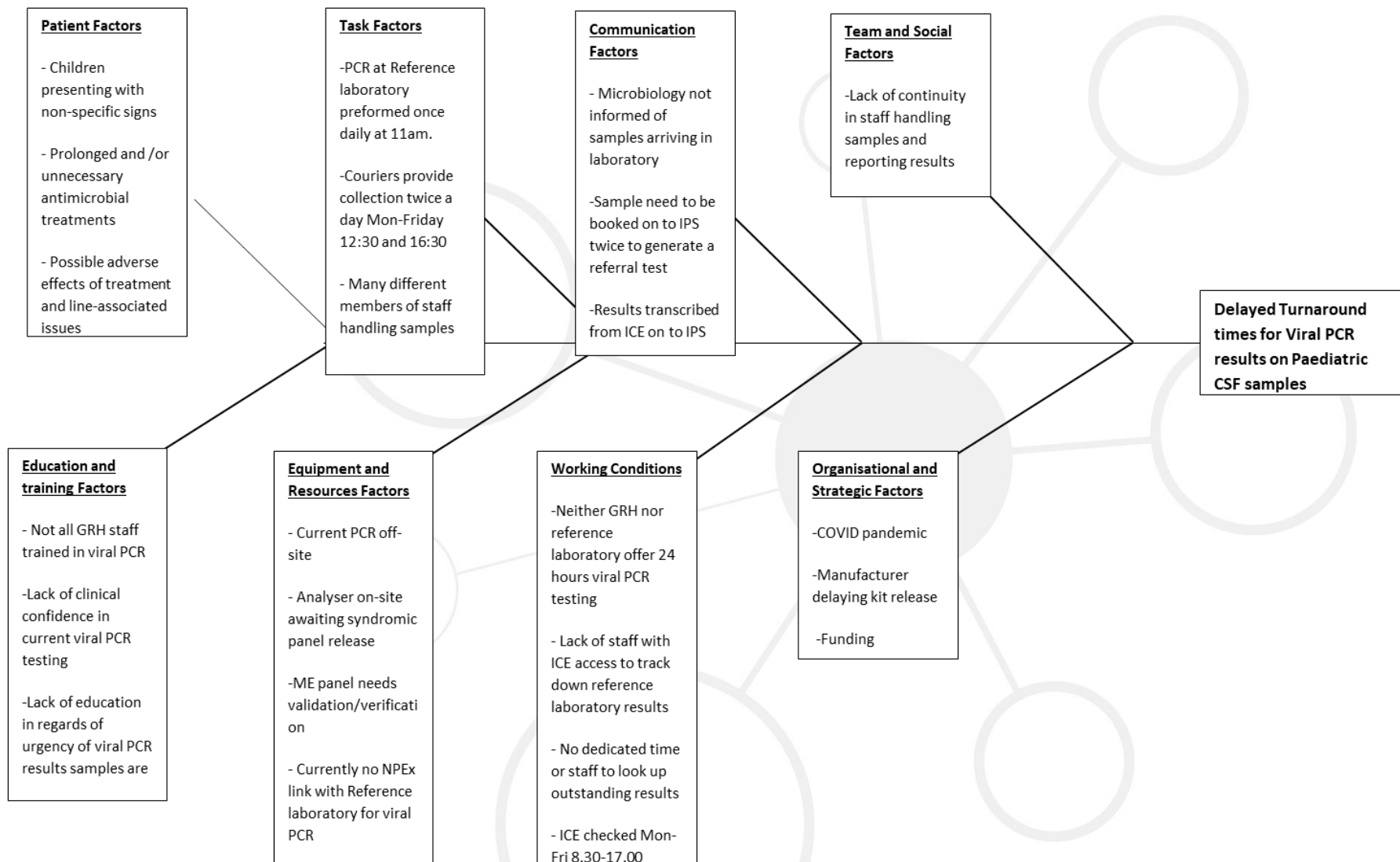
### Changes:

Establishing in-house testing during working hours

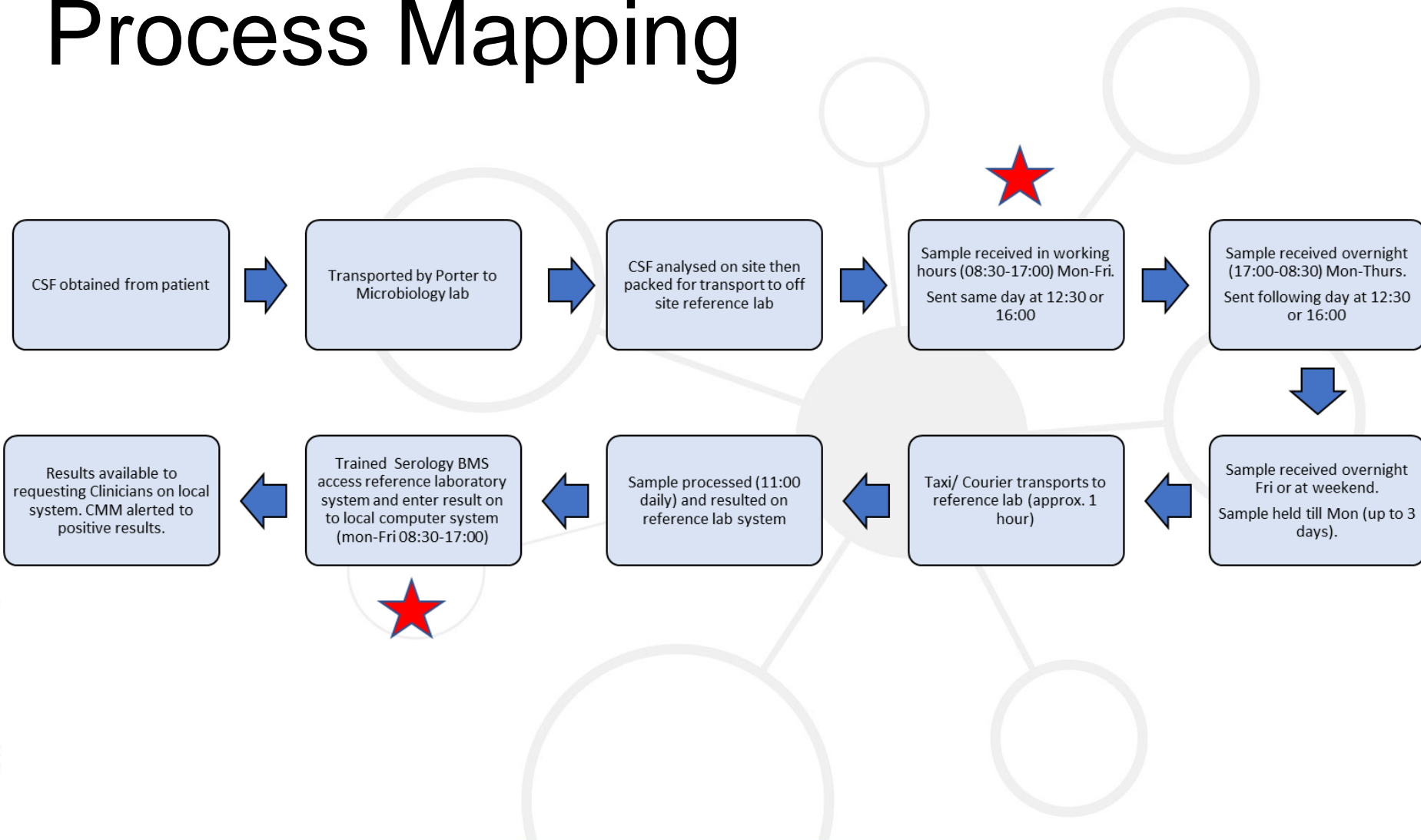
Extending in-house testing to weekends

Extending in-house testing to OOH

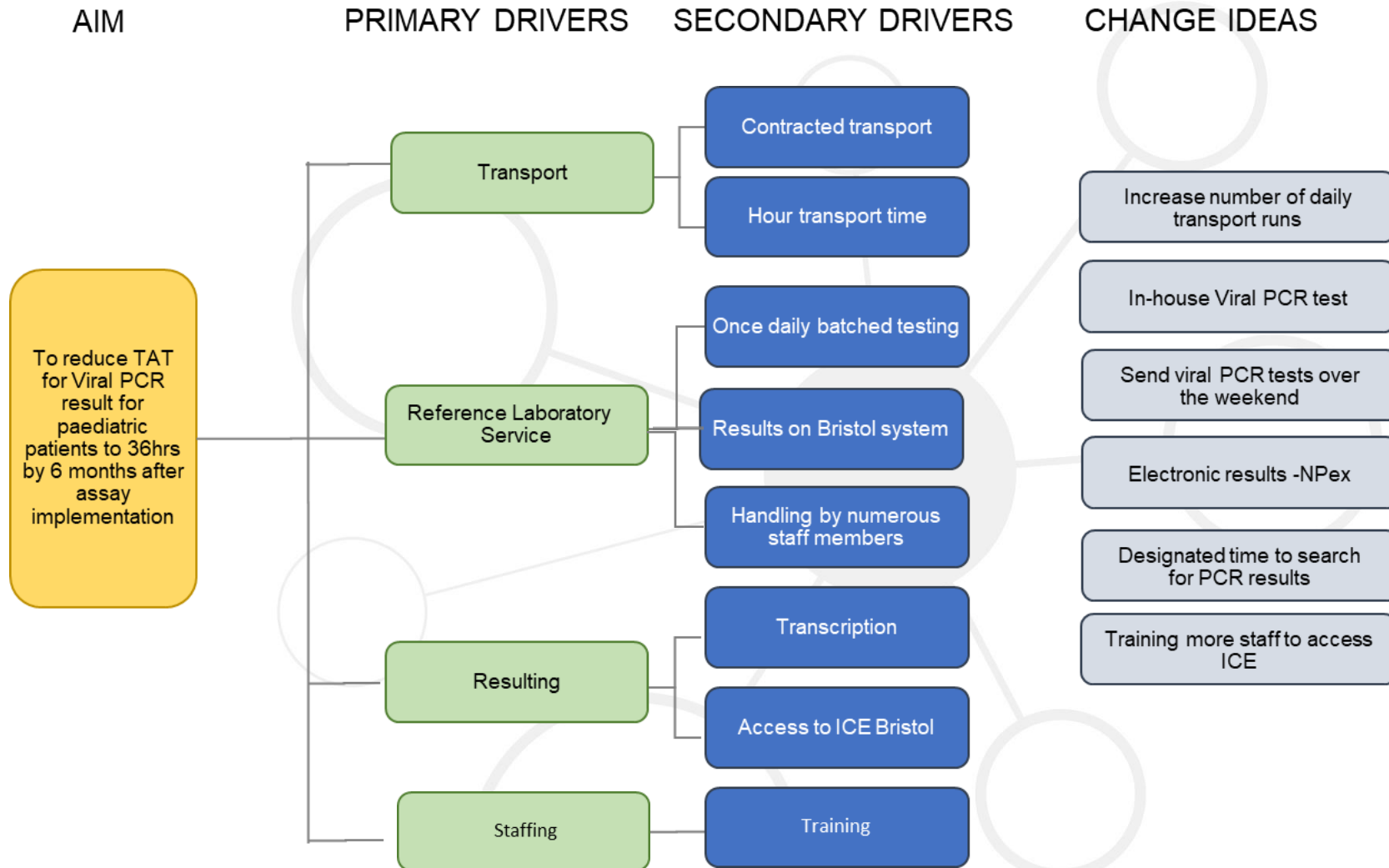
# Root Cause Analysis



# Process Mapping

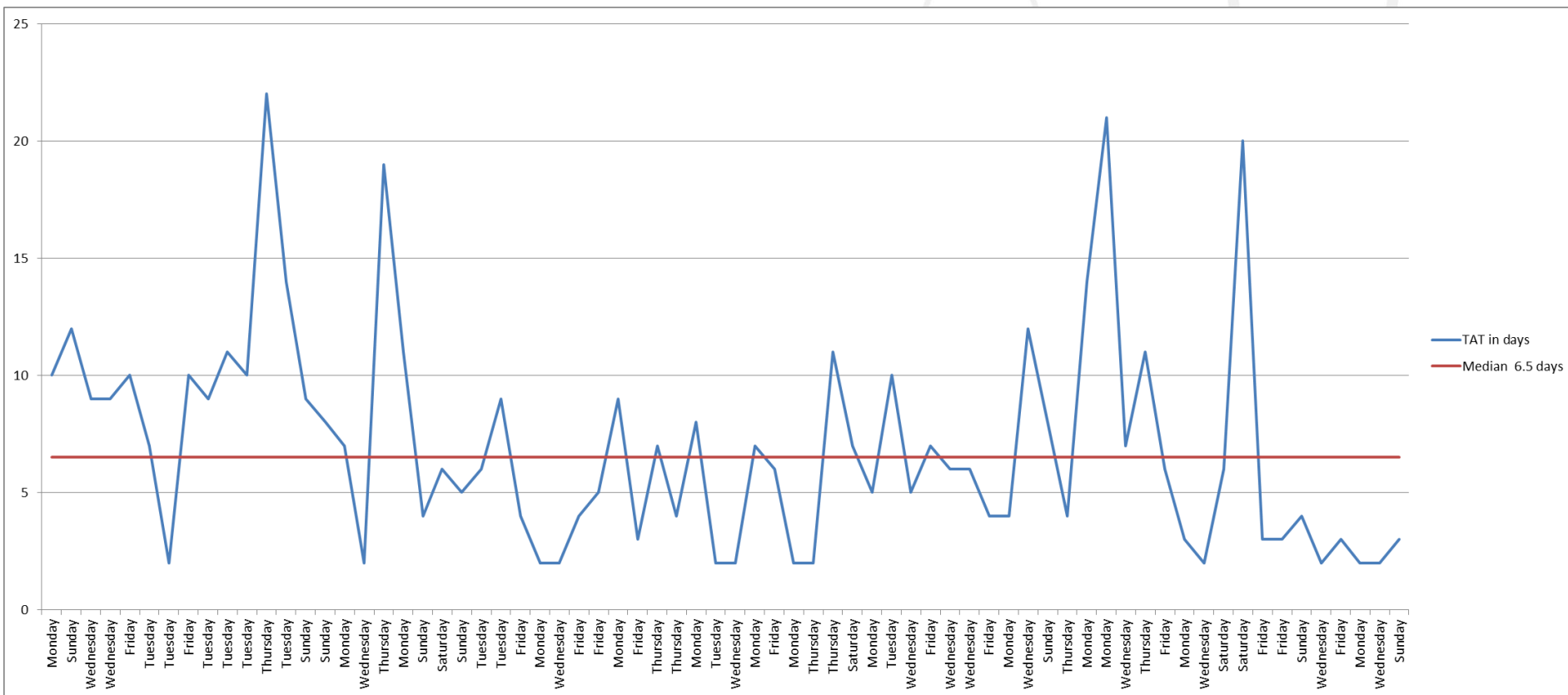


# Driver Diagram





# Is it a weekend?



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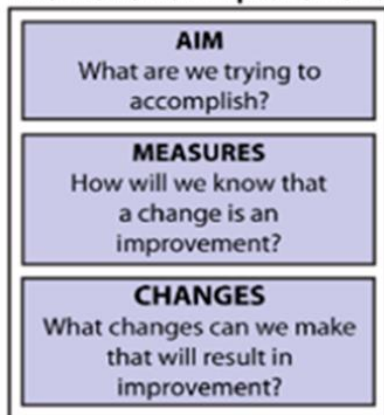
# Qiagen ME assay

- Analyser already sited
- Syndromic Testing
- 16 targets
- Automated sample preparation, amplification, detection and analysis in one-step
- Limited hands-on time ~ 2 minutes
- Run time of 80 minutes



# PDSA and Measures

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# So far.....



IDENTIFY  
TEAM AND  
SPONSORS



REGISTER QI PROJECT  
WITH THE TRUST AND  
PATHOLOGY  
DEPARTMENT



VERIFICATION OF  
PANEL AND ANALYSER



TRAINING OF BMS  
AND AP



FINANCIAL PLAN TO  
ESTABLISH COSTINGS



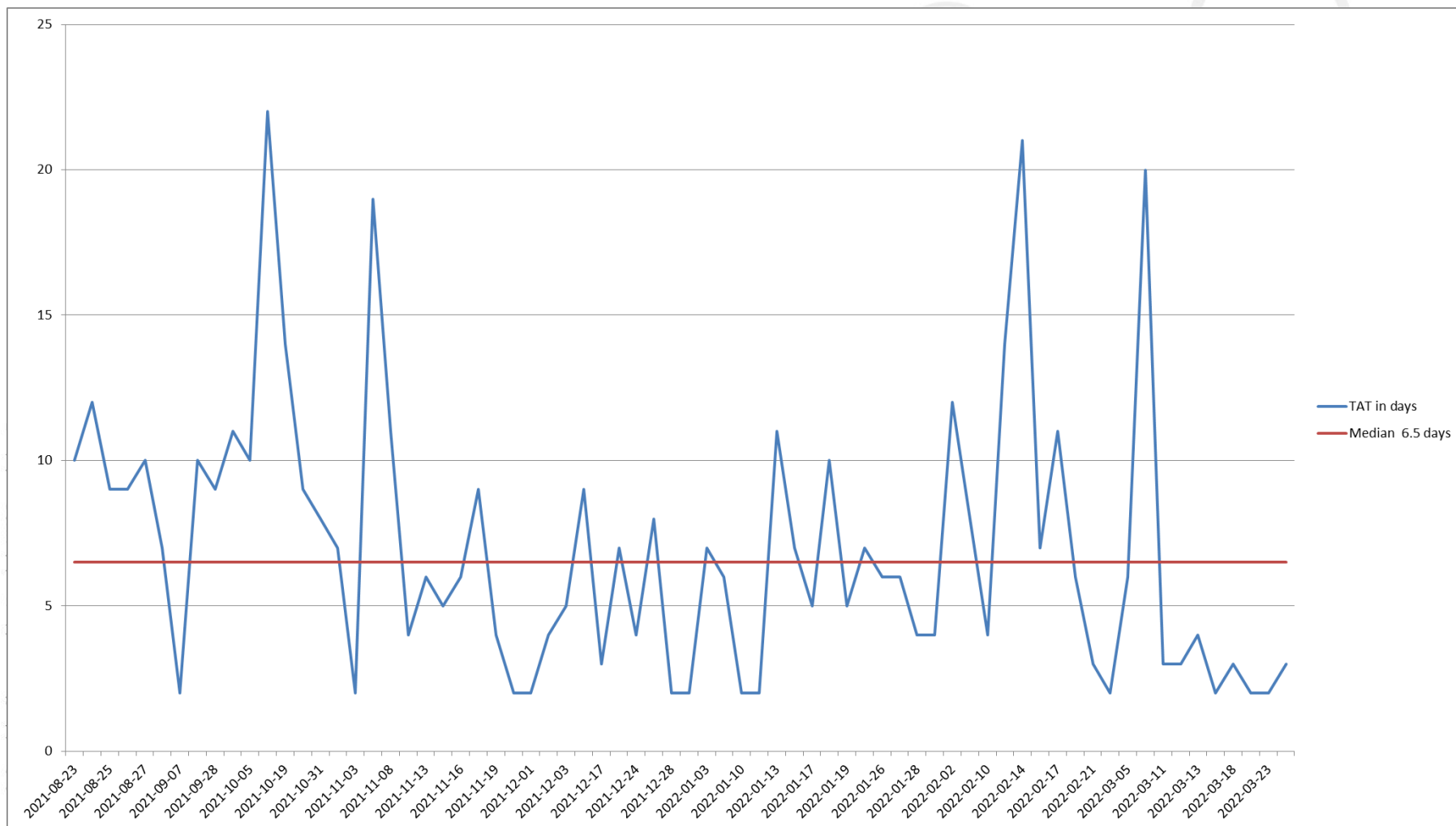
INTRODUCE ASSAY TO  
ROUTINE WORKFLOW



# Measurements

- Do we still have a problem?
- Plot run charts of turn around times prior to implementation
- Plot run charts after initial introduction and for each adaptation/expansion

# Current TAT



# Next steps.....



A faint background graphic of a network diagram with a central grey circle and several smaller white circles connected by thin grey lines.

Thank you for listening

Any questions?