



# Great North Pharmacy Research

# Collaborative Conference 2021

## Technology: the great pharmacy enabler



Friday July 9, 2021, 1pm

### SPEAKERS

- **Dr Wasim Baqir**  
National Pharmacy Advisor: Pharmacy Integration Programme / Primary Care, Community Services and Strategy Directorate/ NHS England and Improvement
- **Professor Graham Evans**  
Chief Information and Technology Officer/SIRO, North Tees and Hartlepool NHS Foundation Trust /Chief Digital Officer NENC, Integrated Care System/ Honorary Professor, Teesside University
- **Dr Jane Brown**  
Pharmacy Dean, Health Education England
- **Gemma Donovan**  
Academic Practitioner in Pharmacy Practice, School of Pharmacy, Pharmaceutical and Cosmetic Sciences, University of Sunderland
- **Laura Stavert**  
Advanced Pharmacist Practitioner, Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust
- **Calum Polwart**  
Specialist Cancer Pharmacist, South Tees Hospitals NHS Foundation Trust
- **Richard Brown**  
Chief Officer, Avon LPC



# Great North Pharmacy Research Collaborative

4<sup>th</sup> Annual Regional Conference

Technology: the great pharmacy enabler

9 July 2021 1:15pm – 5pm

**@GtNorthPharmRes #GNPRC2021**

In association with:





# Welcome

Dr Wasim Baqir

National Pharmacy Advisor: Pharmacy Integration Programme  
Primary Care, Community Services and Strategy Directorate  
NHS England and Improvement

# In memory of



Lesley Davidson



Dr Alan Worsley



# Housekeeping

- Please ensure microphones are muted.
- If you have any questions throughout the session then please use the chat facility. We will attempt to address questions, if we can't then we will follow up after the event.
- View the posters in the breaks - <https://bit.ly/GNPRC9Jul2021>
- Speaker presentations will be circulated following the event.
- The event will be recorded and shared.
- Some presentations are pre-recorded, please be aware of varying volume levels during the event.
- Join the conversation on social media #GNPRC2021
- Event Information: <https://bit.ly/GNPRC9Jul2021>



# Thank you to our speakers



#GNPRC2021



# Pre-Registration Presentations



# Investigating the Effects of COVID-19 on High INR Readings

Megan Blenkinship

Pre-Registration Pharmacist

South Tyneside and Sunderland NHS Foundation Trust





**South Tyneside and Sunderland**  
NHS Foundation Trust

# Investigating the Effects of COVID-19 on High INR Readings

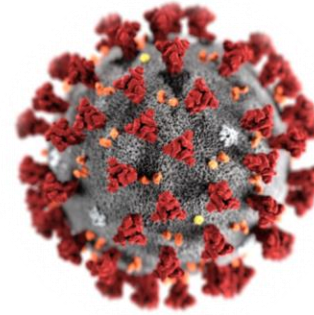
*By Megan Blenkinship*

*Great North Pharmacy Research Collaborative; 4th Annual Regional Conference: Technology: the great pharmacy enabler; 9<sup>th</sup> July 2021 1pm – 5pm – Online @GtNorthPharmRes #gnpharmconf21*

The path to  
**excellence**

A decorative graphic element consisting of a white wavy line that curves over the word 'excellence'. The word 'excellence' is in a bold, white, sans-serif font. To the right of the word, there is a white speaker icon with sound waves emanating from it.

# Background



- The anticoagulant medicine warfarin, is widely used and requires patients to have INR monitoring at Warfarin Clinics at least every 12 weeks (NICE, 2020).
- The adverse effects of warfarin include haemorrhage at high INR readings.
- A patient's response to warfarin is affected by many factors including diet, lifestyle, other medications and co-morbidities.
- On the 23<sup>rd</sup> March 2020, the UK entered a lockdown period due to the Covid-19 pandemic, which has been proposed to affect INR readings, either from infection of the virus or from the impact of the pandemic including (Speed et al., 2020) (NHS, 2020).



# Aims and Objectives



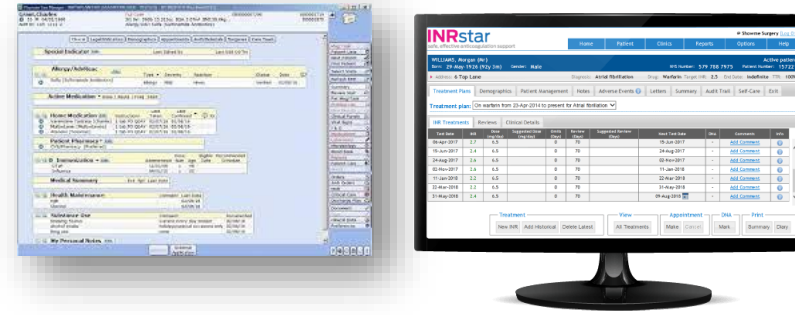
Aim: To investigate the relationship between the incidence of high INR readings  $\geq 8$  and Covid-19.

## Objectives:

- Identify how many patients had INR readings  $\geq 8$  between March 23<sup>rd</sup> 2020 and 5<sup>th</sup> January 2021.
- Identify how many patients were positive for Covid-19 when they had INR readings  $\geq 8$ .
- To determine whether INR readings  $\geq 8$  are more prevalent in specific patient groups during Covid-19.
- To determine what factors have affected patients INR readings during the Covid-19 pandemic.



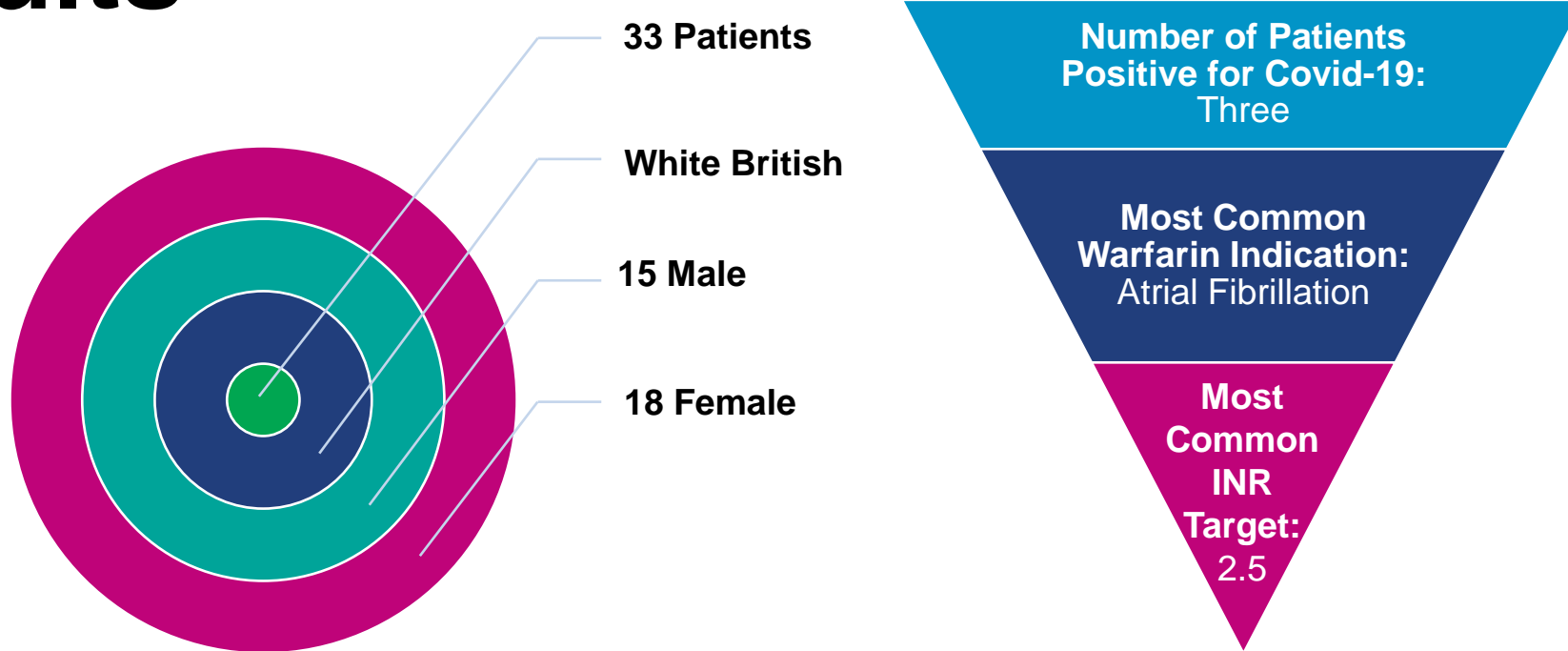
# Method



- All Warfarin Clinic patients and domiciliary visits, who had INR readings  $\geq 8$  during the study dates were included.
- Patients were identified using the report function on the anticoagulation clinic recording system: INR star.
- Each INR Star and Meditech patient profile was accessed for data collection.
- Data collection included:
  - The patient's INR reading, age, gender, warfarin indication, target INR, ethnicity, any Covid-19 test results, diet changes, medication changes, lifestyle changes and changes in patient co-morbidities.



# Results

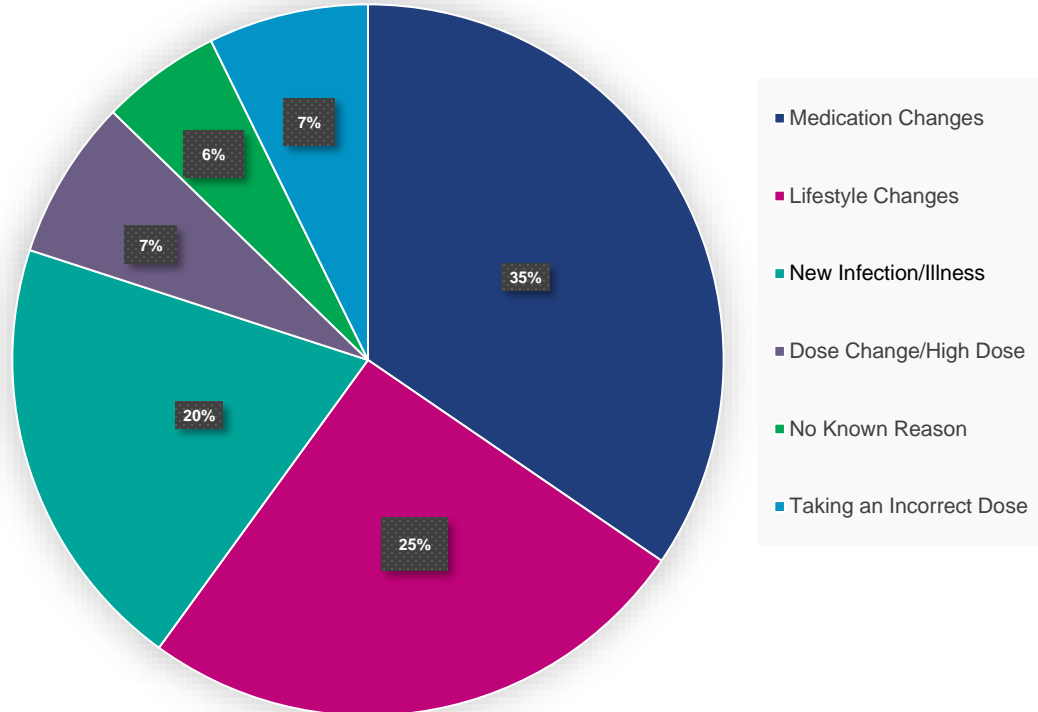


Thirty-three patients aged between 28 and 91 years old, who all had an ethnicity of White British were investigated in the study.





# Results



- Additional factors affecting INR readings, included;
  - Illnesses or infections
  - Medication changes
  - Lifestyle changes
  - Diet changes
  - Warfarin dose changes.
- Three patients had no known reason for their high INR reading.
- The most common medication changes were the prescribing of antibiotics, analgesia and changes in warfarin dosing.



# Discussion

## Age and Increased INR Readings

- Over half of the patients in the study were aged 70 years old or older.
- Studies show that anticoagulation control in warfarin patients is poorest in the elderly population (Goudie et al., 2004) (Abohelaika et al., 2016).
- Pharmacokinetic changes in the elderly population may also affect INR readings (Khoury & Sheikh, 2014).
- A patient's age is not affected by Covid-19, thus, there is no evidence that INR readings are raised due to the pandemic.

## Covid-19 Infection and Increased INR Readings

- A recent study found 53% of patients with an INR reading  $>8$  had a confirmed or suspected Covid-19 infection (Speed et al., 2020).
- Some researchers have proposed that Covid-19 may increase the risk of thrombosis (Ranucci, et al., 2020) and that liver impairment is not a prominent feature of Covid-19 (Zhang et al., 2020).
- Only 3 patients with an INR reading  $\geq 8$  had a positive Covid-19 test, thus it is not possible to associate the two factors together.



# Discussion

## Gender and Increased INR readings

- Over half of the patients investigated in the study were female, however it was not significantly higher than the number of male patients.
- Research has found that Covid-19 disproportionately affects more men than women with regards to fatalities, with 54.3% of all deaths involving Covid-19 being male (Office for National Statistics, 2021).
- The number of positive Covid-19 cases in the study was not significant, thus, no link could be determined in the study.

## Ethnicity and Increased INR Readings

- A recent government review suggests Black and Ethnic minorities are more at risk of Covid-19, with death rates twice as high in Bangladeshi communities and up to 50% higher among other ethnic groups compared with White British people (Patel et al., 2020).
- As 100% of the study population were White British, no separate analysis by race or ethnicity was carried out.



# Discussion

## Alcohol Consumption and Increased INR Readings

- Three patients changed their alcohol consumption during the pandemic.
- For some patients, who only consume alcohol at social occasions, the closure of the hospitality industry meant this could no longer occur and Government restrictions on alcohol sales in shops and pubs, may have contributed to this (Morris, 2020).
- Differently, there has been a significant increase in alcohol sales during the pandemic (Ellison, 2020).
- Lifestyle changes can happen at anytime and cannot be explicitly attributed to the Covid-19 pandemic unless documentation on INR star specified this.

## Diet Changes and Increased INR Readings

- Seven patients in the study had diet changes that they attributed to the pandemic.
- A reduction in food consumption due to stockpiling (Bachelor, 2020) or reduced weekly supermarket visits, to comply with restrictions may have affected this (GOV.UK, 2021).
- Moreover, reduced vitamin K levels have also been reported in patients with Covid-19 (Dofferhoff, et al., 2020) (Speed et al., 2020).
- Both weight loss and malnutrition can also increase warfarin sensitivity (Mueller et al., 2014).



# Discussion

## Medication Changes and Illness leading to Increased INR Readings

- Eleven patients had new medical conditions leading to medication changes, mostly due to antibiotics.
- 81% of patients with possible or confirmed Covid-19 were prescribed antibiotics (Speed et al., 2020).
- Four patients had changes to their analgesia, attributed to paracetamol, which may have increased warfarin sensitivity (Hylek et al., 1998).
- It is not possible to associate these changes to the pandemic, unless the changes are due to a positive Covid-19 test result.

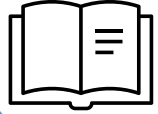
## Dose Changes and Incorrect Doses leading to Increased INR Readings

- Four patients had taken an incorrect warfarin dose prior to their high INR reading.
- Dose confusion amongst study participants was common.
- A common cause of warfarin adverse effects is poor treatment adherence, due to a lack of patient understanding about their treatment and education from healthcare professionals (European Society of Cardiology, 2016).
- Prolonged INR monitoring due to the pandemic restrictions, may have led to patients taking incorrect doses for a longer period of time.





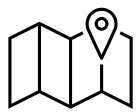
# Conclusion and Recommendations



The study results provide no conclusive evidence that raised INR readings are due to the Covid-19 pandemic. As current research is limited, further studies are needed to determine an association between the high INR readings and Covid-19.



INR/PT monitoring could be carried out in all Covid-19 positive patients, not just warfarin patients to assess the risk of haemorrhagic events and to get a larger sample size with different ethnicities.



Local results could be compared to the rest of the UK and the amount of high INR readings can be compared to the same time period the previous year when the UK was not in the pandemic.



Pharmacists must continue to confirm warfarin doses and Warfarin Clinic details, allowing patients to notify clinics of any changes to their medications, lifestyle or medical conditions. Therefore, healthcare professionals can assess the need for more frequent INR monitoring.





South Tyneside and Sunderland  
NHS Foundation Trust

# Thank You For Listening!

The path to  
**excellence**

A white speaker icon with sound waves, positioned over the word 'excellence' in the logo.

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# **An Audit Assessing the Appropriateness of Controlled Drug Destruction and its Relevant Documentation**

Aidan Bowler

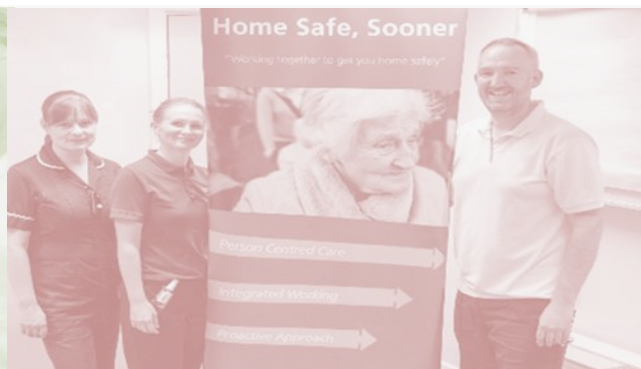
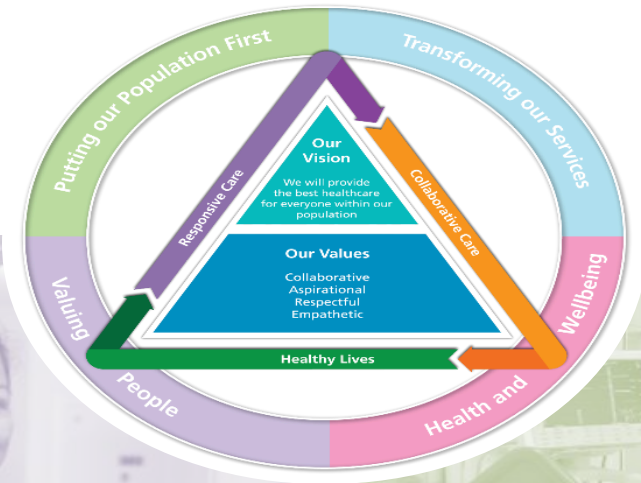
Pre-Registration Pharmacist

North Tees and Hartlepool NHS Foundation Trust



# An Audit Assessing the Appropriateness of Controlled Drug Destruction and its Relevant Documentation

Aidan Bowler





# Background

June 2015 – NHS sponsored study estimated  
**£300 Million**  
of prescribed medicines were wasted a year

Our trust saves roughly £10,000 from non-controlled drugs  
returns within a 6-week period

So what about controlled drugs (CD's)?



# Aims and Objectives

Standards were produced from the trusts SOP's

1) Each CD drug intended for destruction must be recorded into the CD destruction register.

2) CD medication should be returned into stock (not destroyed) unless it meets ANY of the criteria listed below:

- Patient's own drugs
- Issued >6 months ago
- $\leq 6$  months expiry
- Loose tablets
- In poor condition
- Opened liquids
- Part of a blister pack
- More medication than quoted on the container/box
- Cut foil strips



# Method

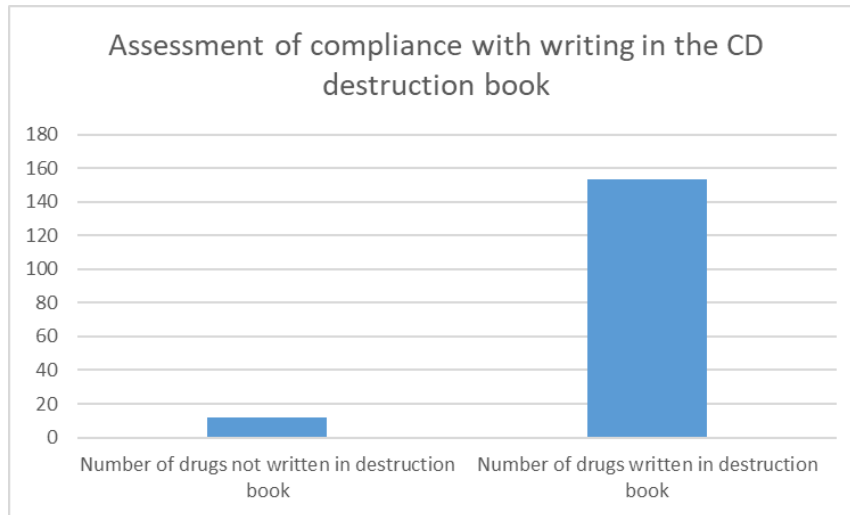
All data was collected over a 6-week period

Records of all CD drug returns stored for destruction in pharmacy were assessed to see whether they had been written in the destruction register according to the Trust policy, they were also assessed against the criteria for returning in standard 2

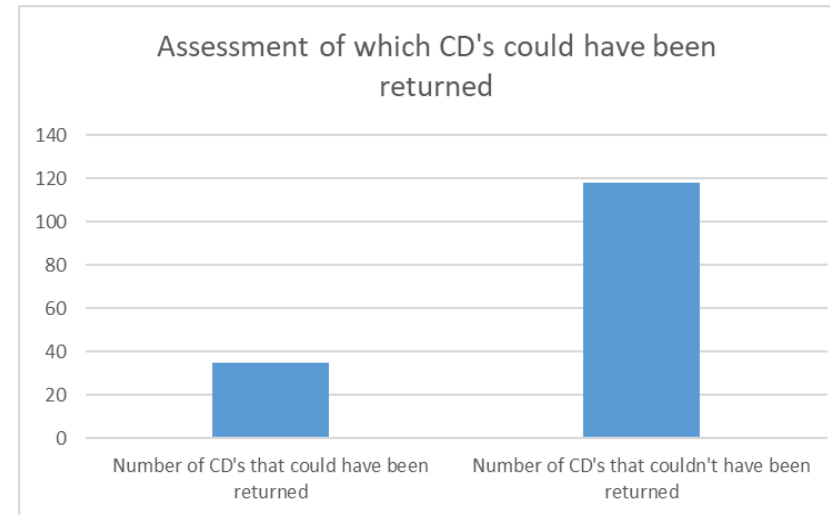
The drug cost was analysed based on pricing listed on the dispensing software ascribe



# Results



7.3% of CD's for destruction were not recorded in the destruction book.



22.9% of the drugs could have been returned rather than destroyed.

$$£60.32 + £80.52 + £178.36 = £319.20$$

Cost of CD's that could have been returned

Price of doop kits

Cost of labor

Total cost

£782.08

Total cost of all drugs destroyed



# Conclusion

Limitations with high cost drugs and reduced hospital admissions due to COVID including high risk patients

## **So what could be changed to improve compliance for returns?**

- Implementing more education around the topic of waste management and assessing CD returns
- Reviewing the policy
- Having a returns checklist on the CD cupboard door to improve adherence to the standards
- Help from technicians with returns
- Reviewing overprescribing of CD's themselves





# **Evaluating the Quality of Patient Follow-Up Post-Myocardial Infarction: An Audit of ACE inhibitor/ARB and Beta-Blocker Up-Titration in Primary Care**

Caitlyn Madden

Pre-Registration Pharmacist

Northumbria Healthcare NHS Foundation Trust

### Background

- ~1.4 million people alive in the UK today have survived a myocardial infarction (MI) (1).
- Cost of acute MI ~£4200 and acute heart failure (HF) exacerbation ~£3000 (2).
- NICE guidelines: An angiotensin-converting enzyme inhibitor (ACEi) or angiotensin receptor blocker (ARB) and a beta-blocker (BB) post-MI titrated to the maximum tolerated dose (3,4).
- Optimal doses (≥50%) shown to reduce mortality, morbidity and hospitalisation rates compared to suboptimal doses (<50%) (5–7).
- NICE standard maximum dose ACEi/ARB and BB to be achieved within 6 and 11 weeks of discharge, respectively.

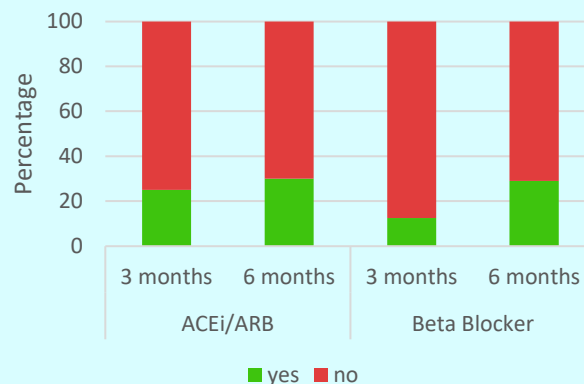
### Methodology

- Project setting: GP practice (patient population 19,000)
- Clinical system search conducted for patients coded with an acute MI in the previous 12 months.
- Data extracted from patient records to determine titration history.

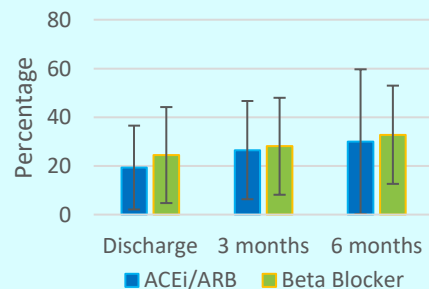
**Audit standard: Maximum dose ACE inhibitor/ARB and beta-blocker to be achieved within 6 and 11 weeks of discharge, respectively**

### Results

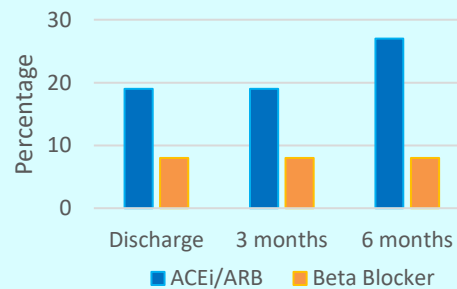
- 26 patients identified, 23 (88%) of which were eligible for and prescribed ACEi/ARB and BB therapy at discharge. Only 3 (12%) and 2 (8%) patients were at maximum doses of ACEi/ARB and BB, respectively.
- Of those not discharged on maximum doses, no patients achieved maximum doses of either ACEi/ARB or BB within 6 and 11 weeks, respectively. All patients failed to meet the audit standard.
- A HF nurse followed up 3 (12%) patients who all achieved maximum doses of ACEi/ARB and an increase in BB by 6 months.



**Fig 1.** Percentage of patients who received at least one attempted increase in their ACEi/ARB or BB dose 3 months and 6 months post-discharge. Excludes patients discharged on maximum doses.



**Fig 2.** Mean percentage of maximum BNF dose ACEi/ARB and BB patients were prescribed at discharge and at 3 and 6 months post-discharge. Excludes those discharged at maximum doses.



**Fig 3.** Percentage of patient on maximum BNF doses of ACEi/ARB and BB at discharge and 3 months and 6 months post-discharge. Includes those discharged on maximum doses.

### Discussion

- Appeared that patient's followed up by a HF nurse up were more likely to have their treatment optimised compared to those who were not; potentially causing differing hospitalisation and mortality rates
- Below average compared to previous research where on average between 46%-48% of the maximum dose of ACE inhibitor/ARB and between 34%-41% of the maximum dose of beta-blocker were achieved after 3 months (7).

### Conclusion

Up-titration of ACEi/ARB and BB in patient's post-MI was below the UK average reported in previous research. The average dose patient's received 6 months post-MI was below optimal doses shown to reduce hospitalisation and mortality rates. None of the patient's met the audit standard – no one received maximum dose ACEi/ARB and BB therapy within 6 and 11 weeks of discharge, respectively. Patient's followed up by HF nurses appeared to receive more intense therapy quicker. A quality improvement project is being established to develop processes to identify patients and support healthcare professionals with up titration.

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# **An Assessment of the Electronic Documentation of Medicine Reconciliation**

Sabrina Mahmoud

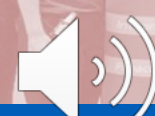
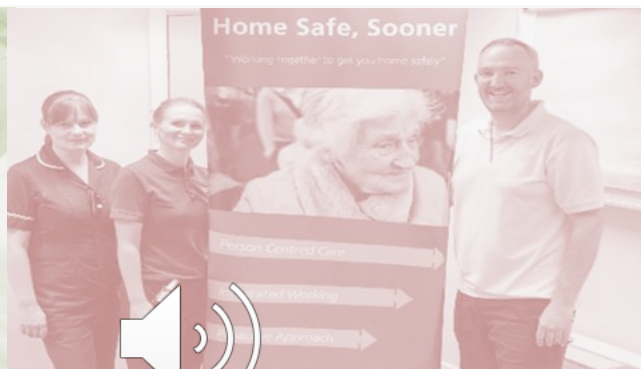
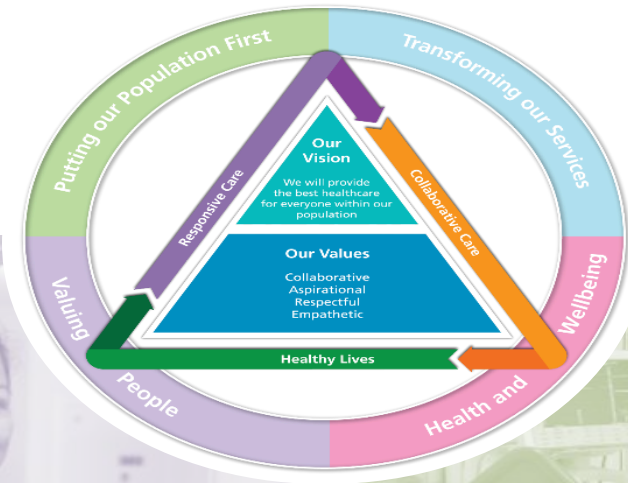
Pre-Registration Pharmacist

North Tees and Hartlepool NHS Foundation Trust

# An Assessment of the Electronic Documentation of Medicine Reconciliation



By Sabrina Mahmoud



## BACKGROUND

Medicines reconciliation (MR) on hospital admission aims to reduce the risk of harm due to medication omission or inappropriate prescribing



A medicines optimisation report, published by NICE in 2015, identified a **30-70%** unintentional variance between medications that patients were taking pre and post-admission. [1]

Accurate documentation of MR is crucial and an effective standard operating procedure (SOP) should facilitate this. [2]

### **Why did I choose this topic?**

The Trust changed from paper based MR to electronic MR and approved an SOP to facilitate this change however, since its implementation, there has been no review of its effectiveness



## OBJECTIVES



1.

ASSESS DOCUMENTATION OF  
MEDICINE RECONCILIATION ON  
THE TRUST'S ELECTRONIC  
NOTES ACCORDING TO TRUST  
SOP



2.

IDENTIFY COMMON PROBLEMS  
WITH RECORDING MR  
ELECTRONICALLY



3.

EVALUATE IF THE SOP  
REQUIRES REVIEW





## METHOD

- Retrospective study
- 2 different MR records from each adult ward were reviewed daily between 01/02/2021 and 05/02/2021.
- Ethical approval was not required
- case numbers were used to identify patients with complete medicine reconciliation at random
- each was audited by the author.

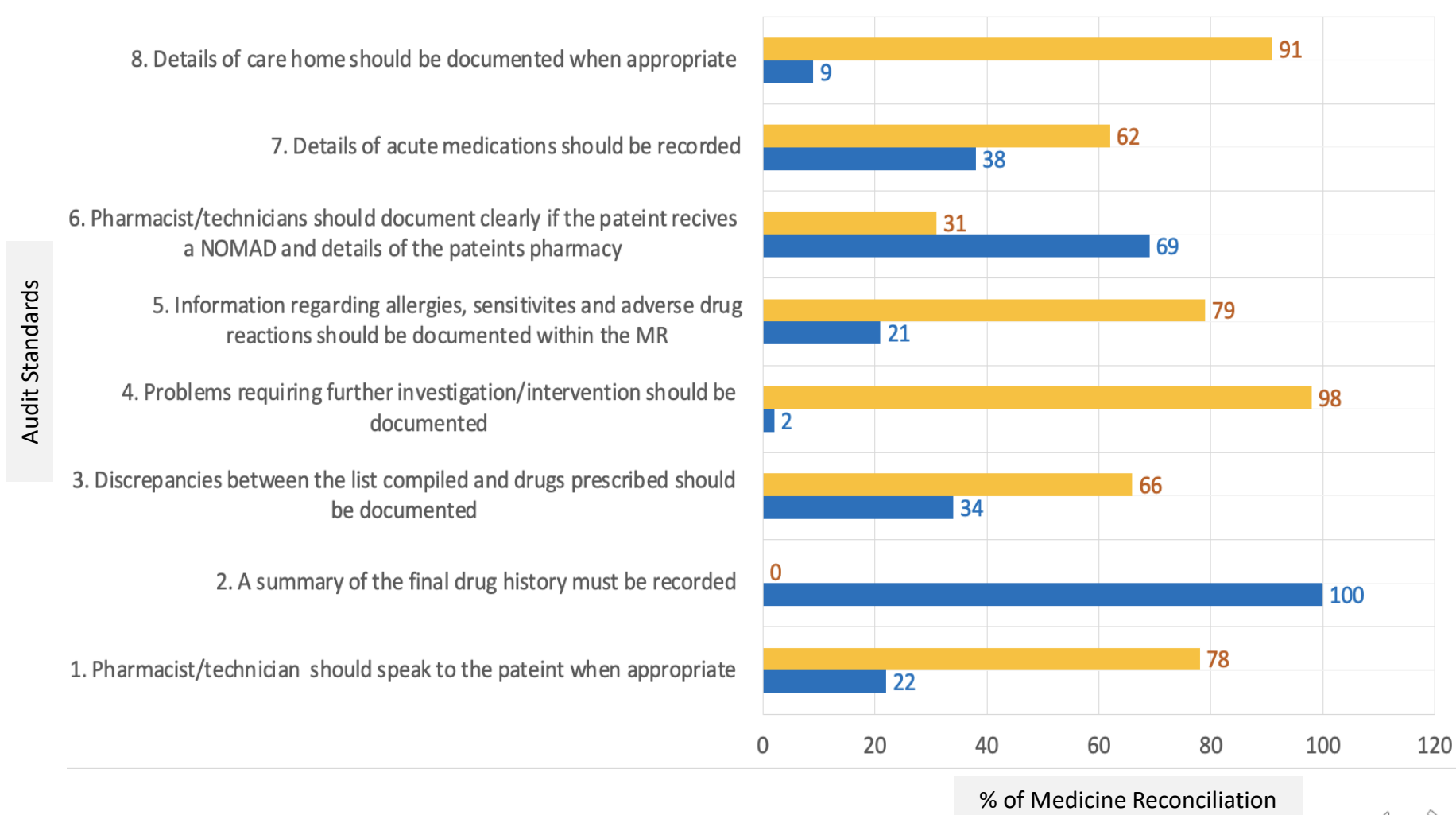


## AUDIT STANDARDS

1. Pharmacist/technician should speak to the patient when appropriate
2. A summary of the final drug history must be recorded
3. Discrepancies between the list compiled and drugs prescribed should be documented
4. Problems requiring further investigation/intervention should be documented
5. Information regarding allergies, sensitives and adverse drug reactions should be documented within the MR
6. Pharmacist/technicians should document clearly if the patient receives a NOMAD and details of patients pharmacy should be recorded
7. Details of acute medications should be recorded
8. Details of care home should be documented when appropriate



# RESULTS



## CONCLUSION

- The SOP states that discrepancies can be communicated either verbally or via documentation in the medical notes. Interestingly it also states that verbal communication is preferred to ensure timely action.
- Clear need to amend the current SOP to clarify necessary elements of MR documentation combined with re-launch followed by re-audit after 6 months.
- Stipulation between desirable and essential documentation criteria is also needed.
- These results are not a reflection of the quality of MR.
- The implementation of electronic recording is relatively new; therefore, the pre-existing SOP requires review and further clarity is required to determine which information must be documented.



### Considerations:

- Covid 19
- Winter pressures
- Verbal communication





# **Auditing the Prescribing of Oral Tetracycline's for the Management of Acne in Patients >12 Years Old in a GP Surgery**

Hannah McMillan

Pre-Registration Pharmacist

North Cumbria Integrated Care NHS Foundation Trust

# Auditing the prescribing of oral tetracyclines for the management of acne in patients >12 years old in a GP surgery

supervisor: Grahame Young

Hannah McMillan

Court Thorn Surgery

## Introduction

- Skin conditions account for 8% of antibiotic prescribing <sup>(1)</sup>.
- The GP practice is assessed by the CCG on the appropriate prescribing of antibiotics <sup>(2)</sup>.
- Acne management involves a stepwise approach shown in figure 1 <sup>(3)</sup>.
- **Topical treatment should always be co-prescribed with oral antibiotics to reduce the risk of antibiotic resistance<sup>(4)</sup>.**

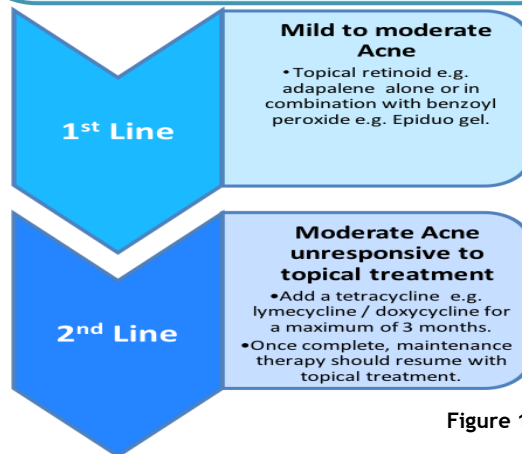


Figure 1

## Audit standard

100% of patients receiving oral antibiotics to treat acne are co prescribed a topical agent by 8/3/21

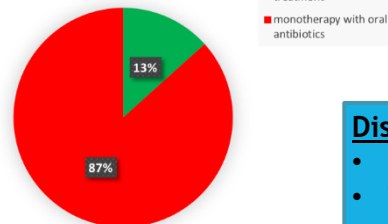
## References

- Santer. M, et al, Stemming the tide of antimicrobial resistance: implications for management of acne vulgaris, *British Journal of General Practice*, 2018, 68(667): 64-65. Online available at: <https://bjgp.org> [Accessed: 2/2/21]
- NHS, NHS Oversight Framework, 2019, 11-12, Online available at: <https://www.england.nhs.uk> [Accessed 9/3/21]
- Cunliffe. T, Acne: acne vulgaris, Primary Care Dermatology Society, 2020, Online available t: <http://www.pcds.org.uk> [Accessed 2/2/21]
- NICE, Acne vulgaris: CKS, 2020, Online available at: <https://cks.nice.org.uk> [Accessed 9/3/21]

## Method

- The EMIS patient database was used to identify patients prescribed oral tetracycline for acne within 6 months from the search date (28/01/21).
- It was identified whether a topical treatment was co-prescribed.
- The audit was part of the medicines review process therefore, no ethical approval was required.
- Patient information was partially anonymised and data collection forms were stored on a password protected device.

## Initial audit results



## Post intervention

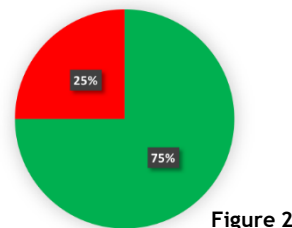


Figure 2

## Results

Of the 15 patients that were identified in the initial search, two were co-prescribed topical treatment (13%). Therefore **87% were not prescribed acne treatment according to NICE guidance.**

## Prescribing of Acne Treatment

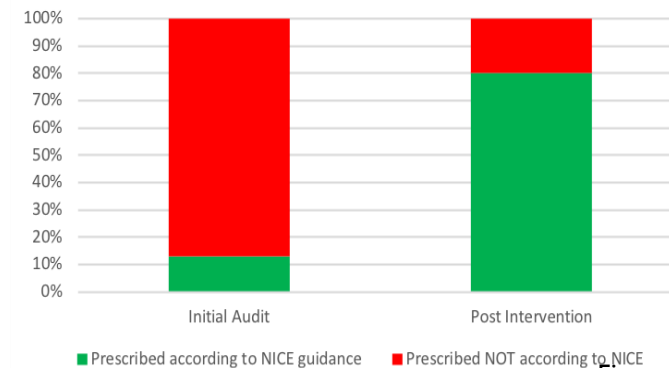


Figure 3

## Discussion

- **Intervention:**
- Telephone consultations to inform patients of the NICE guidance, assess whether oral antibiotics were still indicated and offer topical treatment.
- There was a **62% improvement** from the initial audit value post intervention (Figure 2)
- 33% of patients agreed to step down to maintenance topical therapy.
- As a result of the consultations, **80% of patients were prescribed treatment according to NICE guidance** (Figure 3).
- A Teaching session was provided to inform prescribers of the guidance.
- **Limiting Factors:** Unable to contact 1 patient, Previous intolerance to similar topical preparations.
- **Continued development:** implement system alerts to prescribe topical treatment with oral antibiotics and re-audit in 12 months.





# Q&As with the Pre-Registration Pharmacist Finalists



# Comfort Break and Virtual Poster Viewing

<https://bit.ly/GNPRC9Jul2021>



# Comfort Break and Virtual Poster Viewing

<https://bit.ly/GNPRC9Jul2021>



# Integrated Medicine in the Digital Age

Professor Graham Evans

Chief Information and Technology Officer/SIRO, North Tees

and Hartlepool NHS Foundation Trust

Chief Digital Officer NENC, Integrated Care System

Honorary Professor, Teesside University



North East North Cumbria Integrated Care System

# *“Integrated Medicine in the Digital Age”*

## **Professor Graham Evans**

Chief Digital Officer  
NENC ICS

Chief Information and Technology Officer  
North Tees and Hartlepool NHS Foundation Trust



### **Contact details:**

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Telephone: +44 (0) 1642624793

Twitter: [@DrGrahamEvans](https://twitter.com/DrGrahamEvans)



- Context
- NENC ICS Digital Strategy - headlines
- Medicine in a digital age – spotlight Pharmacy
- Case study
- Questions?



# Context – NENC Integrated Care System



## Our evolution

### Working together as one Integrated Care System (ICS) across the North East and North Cumbria

Our integrated care system is made up of four integrated care partnerships (ICPs):

#### North Cumbria ICP - population: 325,700

##### NHS Clinical Commissioning Groups (CCGs):

- North Cumbria CCG
- NHS Foundation Trusts:
  - North Cumbria Integrated Care NHS Foundation Trust

- Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust
- North West Ambulance Service NHS Foundation Trust

##### Council area:

- Cumbria



#### Tees Valley ICP - population: 707,000

##### NHS Clinical Commissioning Groups (CCGs):

- Darlington CCG
- Hartlepool and Stockton CCG
- South Tees CCG (to become one single 'Tees Valley CCG' from April 2020)

- NHS Foundation Trusts:
  - County Durham and Darlington NHS Foundation Trust
  - North Tees and Hartlepool NHS Foundation Trust

- South Tees Hospitals NHS Foundation Trust
- Tees, Esk and Wear Valleys NHS Foundation Trust
- North East Ambulance Service NHS Foundation Trust

##### Council areas:

- Darlington
- Hartlepool
- Middlesbrough
- Redcar and Cleveland
- Stockton on Tees Borough

#### North Cumbria ICP

Population: 325,700

#### North of Tyne and Gateshead ICP

Population: 1,078,500

#### North of Tyne and Gateshead ICP - population: 1,078,500

##### NHS Clinical Commissioning Groups (CCGs):

- Northumberland CCG
- North Tyneside CCG
- Newcastle Gateshead CCG

##### NHS Foundation Trusts:

- Northumbria Healthcare NHS Foundation Trust
- Newcastle Upon Tyne Hospitals NHS Foundation Trust

- Gateshead Health NHS Foundation Trust
- Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust
- North East Ambulance Service NHS Foundation Trust

##### Council areas:

- Northumberland
- North Tyneside
- Newcastle
- Gateshead

#### Durham, South Tyneside and Sunderland ICP - population: 997,000

##### NHS Clinical Commissioning Groups (CCGs):

- South Tyneside CCG
- Sunderland CCG
- Durham Dales, Easington and Sedgfield CCG\*
- North Durham CCG\*

- NHS Foundation Trusts:
  - South Tyneside and Sunderland NHS Foundation Trust

- County Durham and Darlington NHS Foundation Trust
- Cumbria, Northumberland, Tyne and Wear NHS Foundation Trust
- North East Ambulance Service NHS Foundation Trust

##### Council areas:

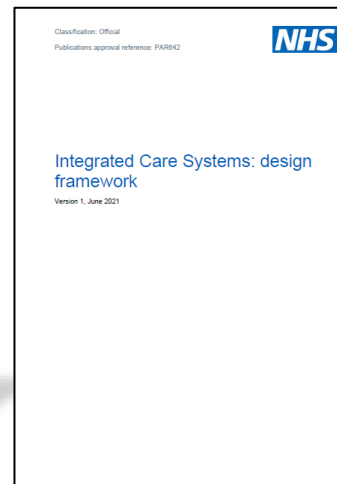
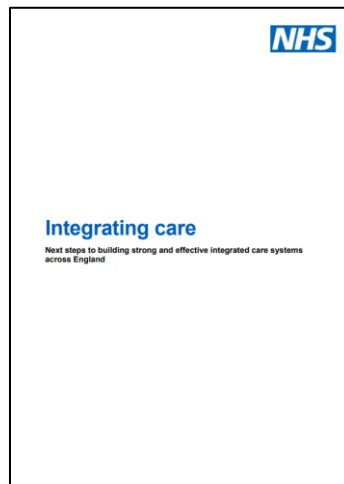
- South Tyneside
- Sunderland
- Durham

#### Durham, South Tyneside and Sunderland ICP

Population: 997,000

#### Tees Valley ICP

Population: 707,000



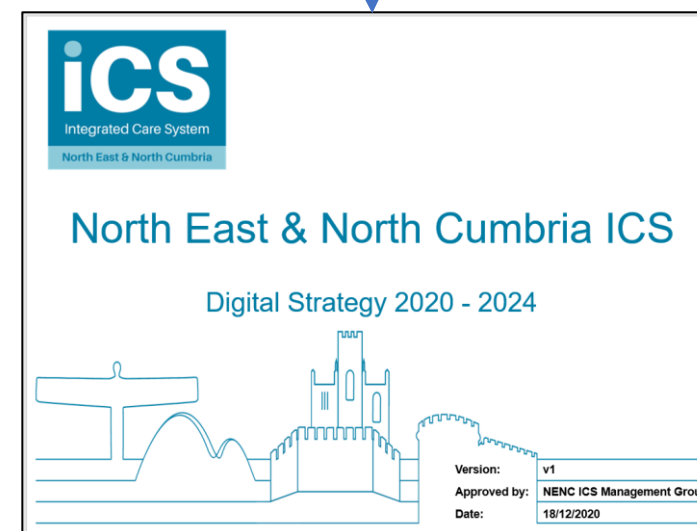
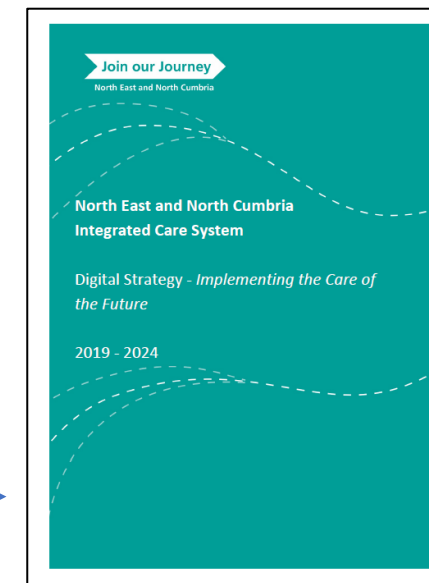
- **Largest ICS in England**
  - Population of 3.2M
  - 4 X ICP's
- **Legacy of collaborative working**
  - Regional (NESHA)
  - FT landscape
- **Digital is one of 6 ICS priorities**
  - Digital Care Programme (DCP)
  - Digital strategy and roadmap
  - CIO Network
  - Flagship Programmes
- **Chief Digital Officer (CDO) – Role**
  - Support DCP – SRO
  - Direct NENC ICS Digital Strategy
  - Coordinate delivery





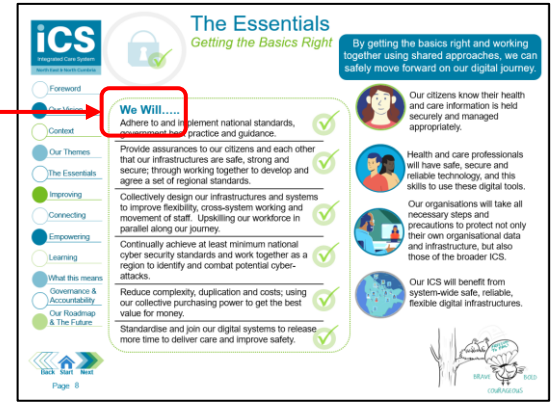
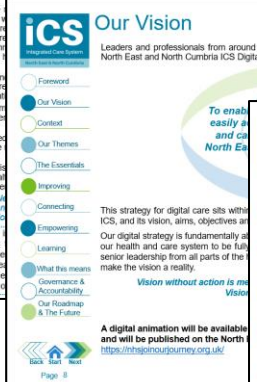
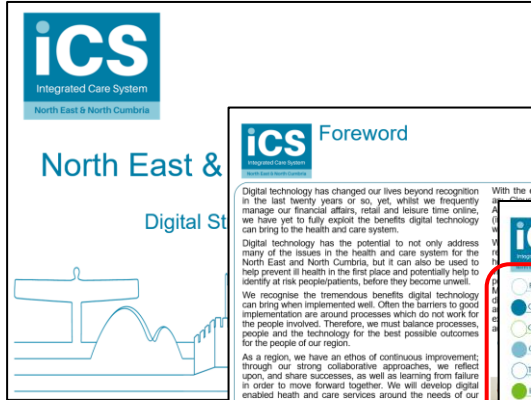
## NENC ICS Priority Workstreams

1. Improving population health and preventing ill health
2. Optimising health services – specifically through ensuring high quality standards across all services and delivering safe and sustainable care in the most appropriate setting
3. **Digital transformation** – making the best use of technology, data and IT to ensuring efficient and effective services
4. Workforce transformation – identify how doctors, nurses and other health and care professionals can work across organisations and sites, particularly hospital and community services; support and train staff to work differently; retain our existing workforce and jointly address recruitment challenges.
5. Mental health – improve access to services and standards of care.
6. Learning disabilities – improve quality of care, waiting times and outcomes for patients.



# Digital strategy approach/format

<https://nhsjoinourjourney.org.uk/what-we-are-doing/priorities/digital-care/digital-strategy/>



Dynamic Navigation

We will do....

What we have done...

We Will....

What we've already done...

**The Essentials**  
Getting the Basics Right

By getting the basics right and working together using shared approaches, we can safely move forward on our digital journey.

- Our citizens know their health and care information is held securely and managed appropriately.
- Health and care professionals will have safe, secure and reliable technology, and the skills to use these digital tools.
- Our organisations will take all necessary steps and precautions to protect not only their own organisational data and infrastructure, but also those of the broader ICS.
- Our ICS will benefit from system-wide safe, reliable, flexible digital infrastructures.

**We Will....**

- Adhere to and implement national standards, government best practice and guidance.
- Provide assurances to our citizens and each other that our infrastructures are safe, strong and secure, through working together to develop and agree a set of regional standards.
- Collectively design our infrastructures and systems to improve flexibility, cross-system working and movement of staff. Upskilling our workforce in parallel along our journey.
- Continually achieve at least minimum national cyber security standards and work together as a region to identify and combat potential cyber-attacks.
- Reduce complexity, duplication and costs, using our collective purchasing power to get the best value for money.
- Standardise and join our digital systems to release more time to deliver care and improve safety.

**The Essentials**  
Getting the Basics Right

Because we had the basics right, we were able to respond at pace to the COVID-19 Pandemic.

We worked together to solve new problems; delivering digital solutions to our region.

Local authorities and health working in information security have been sharing alerts and experiences since 2013.

Information Security for the North East - the North East's public sector WARP (Warning, Advice and Reporting Point), currently brings together all 12 north east councils with colleagues from local NHS organisations, Foundation Trusts, NHS Counter Fraud Authority and NHS Blood and Transplant.

**We've worked together to implement a regional Cyber Response Approach**, ensuring all organisations follow an appropriate methodology that focusses equally upon:

**People, Process and Technology.**

**Free public WiFi**

We're providing free WiFi in our public buildings, to help our citizens to stay connected....

# Digital strategy approach/format

**ICS Governance & Accountability**  
 Following an internal review with senior leaders from across the health and care system in the North East and North Cumbria – the way regional digital programmes are managed is changing.

**ICS Our Roadmap**  
 Digitally enabled Population, System and Organisations

**ICS Keeping our eyes on the Future**  
 We are evaluating and delivering digital systems and services that are most likely to positively change health and care outcomes and experiences over the coming years. As a consequence of digital and technology 'mainstreamisation', a number of such technologies are already in people's many pockets, on their wrists as well as, within local GP surgeries, hospitals, care homes and wider communities.

**ICS Supporting and Related Strategies**  
 To deliver our regional vision and Digital Strategy, partners from across our region have developed supporting, complementary and related Digital Strategies.

**Vertical Alignment**

- ICS Digital Governance review new arrangements in place.
- Future-proofed

- ICS Digital Roadmap
- Lots delivered, COVID helped
- More to do – future opportunities

- Miniaturisation driven evolution
- Digital by default
- Solid foundations essential

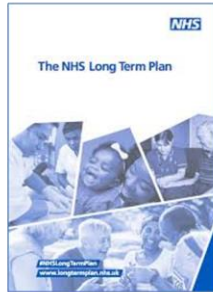
- Regional strategic direction
- Domain & place/ICP delivery plans
- ICP/Place/Organisational alignment



# NHS Long Term & People plans

## Digital Interactions

- Consultations
  - Digital first access to primary care
  - ‘Digital models’ to reduce outpatients\*
  - Video consultations\*
- Apps- NHS App- Becomes ‘front door’
- Personalisation - Self-Care / Remote monitoring\*
  - Increased use of apps (diabetes / respiratory / maternity / online therapies)

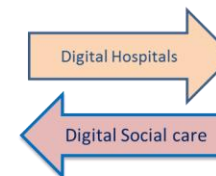


**\* Examples of rapid adoption to COVID response**



## Digital Infrastructure

- All trusts fully digitised by 2024
- Standards: info sharing and Cyber security
- Development of shared records (GNCR)



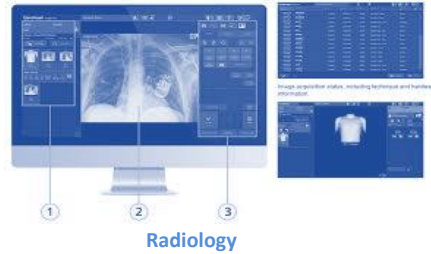
Trust	GNCR	ENHANC
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10





# ICS – Strategic digital programmes

## Optimising Health Services - Diagnostics



<p><b>Respiratory Remote Screening Application</b> A system to identify, triage and provide treatment for high risk respiratory patients</p>	<p><b>Digital Care Home</b> Electronic referrals for those who need urgent care</p>	<p><b>INR Self-Testing Service</b> Enhancing care for patients on warfarin</p>
<p><b>Undernutrition Service</b> An award winning digitally enabled care pathway for those at risk of undernutrition</p>	<p><b>Gestational Diabetes Service</b> Home monitoring for expectant mothers with gestational diabetes</p>	<p><b>Falls Prevention Service</b> A digitally enabled care pathway to help those at risk of falls</p>



Many other priority digitally enabled health and care programmes evolving



## □ Digital dependency

- *Unintended consequences*

- ICS Next steps
- ICS Design Framework
- Planning guidance

- *Digital is not an option, but a necessity*



*"Think like a patient, act like a taxpayer"*

Sir Simon Stevens 2014







## *What is the problem we are trying to fix?*



### **Paper-Based Systems and Records**

- Cannot meet the demands of modern healthcare service
  - Present inherent risk for patient safety
    - Introduce costly inefficiencies
  - Provide poor visibility for performance
- Distance patients from decision making and ownership



## *What is the problem we are trying to fix?*

- 10% of hospital patients are known suffer an adverse drug error
- 1,200 lives could be saved per year
- Each adverse error can extend patient stays by 8.5 days
- Direct costs to the NHS > £500m
- Significant year on year increase in reported adverse drug errors
- c. 76% attributable to acute care

Sources:  
A Spoonful of Sugar | Audit Commission (2001)  
Safety in Doses | NPSA (2009)



- Illegible, ambiguous, incomplete drug charts
- Time wasted locating charts and deciphering information
- Missed / late doses
- Poor and inconsistent allergy recording / checking
- Poor communication between clinicians regarding changes or additional doses (e.g. stat meds)
- Medication charts not re-written in a timely manner
- Poor visibility of performance and outcome data





# A familiar sight



Date 12.1.99						3215661					
Time	Insulin	Dose	Route	Ordered By	Given By	Time	Insulin	Dose	Route	Ordered By	Given By
0100	04.00	12.00	13.30	14.30	16.50	12.19	Humulin M2	26U	SC	SC	SC
Blood Glucose	6.7	3.3	2.6	16.5	10.4						
Urine Glucose				2.78							
Urine Ketones				NEG							

Date 12.1.99						121					
Time	Insulin	Dose	Route	Ordered By	Given By	Time	Insulin	Dose	Route	Ordered By	Given By
1930	22.00	02.00	03.00	04.00	06.00	12.19	Humulin M2	26U	SC	SC	SC
Blood Glucose	2.3	3.1	1.3	5.3	7.5	18.00	Humulin M2	6U	SC	SC	SC
Urine Glucose											
Urine Ketones											

Date 13.1.99						18.00					
Time	Insulin	Dose	Route	Ordered By	Given By	Time	Insulin	Dose	Route	Ordered By	Given By
1200	1730	22.00	01.00			18.00	Humulin M2	6U	SC	SC	SC
Blood Glucose	18.0	8.7	6.3	10.5							
Urine Glucose											
Urine Ketones											

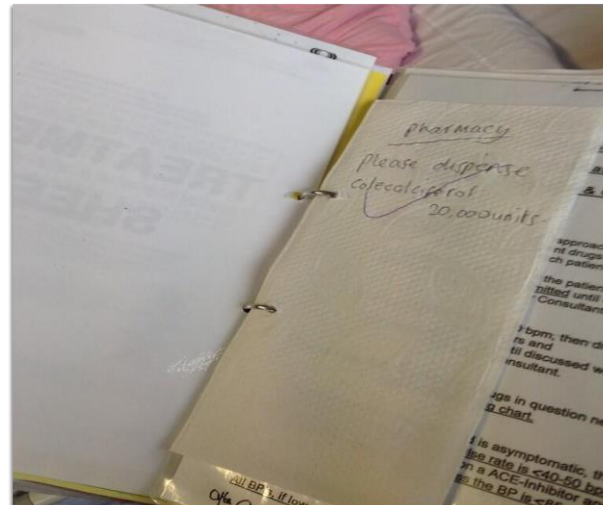
  

Date 14.1						02.00					
Time	Insulin	Dose	Route	Ordered By	Given By	Time	Insulin	Dose	Route	Ordered By	Given By
05.00	1200	1250	17.30			02.00	Humulin M2	26U	SC	SC	SC
Blood Glucose	9.1	20.5	19.8	6.5		18.00	Humulin M2	6U	SC	SC	SC
Urine Glucose				28.7							
Urine Ketones				NEG							

Date 15.1.99						15.00					
Time	Insulin	Dose	Route	Ordered By	Given By	Time	Insulin	Dose	Route	Ordered By	Given By
1.10	2.20	23.00	00.00	01.30	02.30	15.00	Humulin M2	30U	SC	SC	SC
Blood Glucose	1.1	6.1	6.1	3.1	3.1						
Urine Glucose	0.20	04.00	05.00	06.00	02.00						
Urine Ketones	15.6	13.1	10.8	10.0	9.0						

\* ERROR should be A unit



'He wrote in a doctor's hand, which from the beginning of time has been so disastrous to the pharmacist and so profitable to the undertaker'

Mark Twain 1835 -1910



## *“So, what has digital done for Medicine?”*



### Case study - NHS North Tees and Hartlepool NHSFT (NTHFT)

NTHFT have a history for digital medicines innovation, NTHFT where an early adopter to deploy a solution for ward-based pharmacy techs using the software of COWs and to have ward-based pharmacy tech services, a key recommendation from the defining - **Spoonful of Sugar report**.



## Local context

- 326 million annual turnover
- 400,000 + population
- 5,600 staff delivering safe and high quality services
- 2 main Hospitals and a Community Hospital
- 3 Local Authorities
- 1 main clinical commissioning group  
1 specialist clinical commissioning body
- 3 Care Groups – Healthy Lives, Responsive & Collaborative

**You Matter We Care**

**NHS**  
North Tees and Hartlepool  
NHS Foundation Trust

## You Matter We Care

**Corporate Strategy 2020-25**

## Joining-up Our Strategies

As a progressive and forward thinking Foundation Trust we make sure that our strategic direction, and the decisions we take to inform our future direction, are based on sound, practical evidence not only from within the Trust but from other external sources such as strategic partners and clinical and non-clinical stakeholders.

That is why we focus on key areas such as improving our financial position, the people that work for us, the safety and quality of care, our estates and digital maturity and the research and development to help us make bigger and better improvements in our healthcare.

We have aligned our supporting strategies that have helped to influence and shape our direction

**You Matter We Care**

## North Tees and Hartlepool NHS Foundation Trust

### Digital Strategy 2020 - 2025

**Excellence as our Standard** Collaborative | Aspirational | Respect | Impact

Good

### Digital Maturity

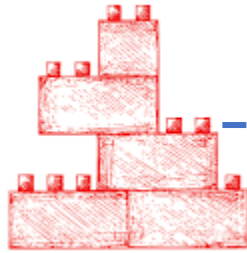
- Vision
- Ambition
- Delivery

### Baseline

STAGE	NHSX Analyser EMRAM EMR Application Modernisation Capabilities
7	Complete EMR, External EMR, Data Analytics, Governance, Disaster Recovery, Policy and Security
6	Technology Enabled Workflow, Blood Products, and Patient EMR, Interoperability, Data Reporting, EMR/EMR
5	Patients disconnected using structured integration, Structured Data Population
4	EMR with EMR, Nursing and Allied Health, Documentation, Basic Workflow Continuity
3	Working and EMR Health, Documentation, EMR, Basic Blood Security
2	EMR System Implementation, Basic Security
1	Workflow, Governance, Processes and Policy/Change/Compliance, System EMR, Single user EMR/Single Organisation
0	All Data disconnected/Unusable



# North Tees and Hartlepool NHS FT



## DIGITAL PROGRAMME PLAN (Q2)

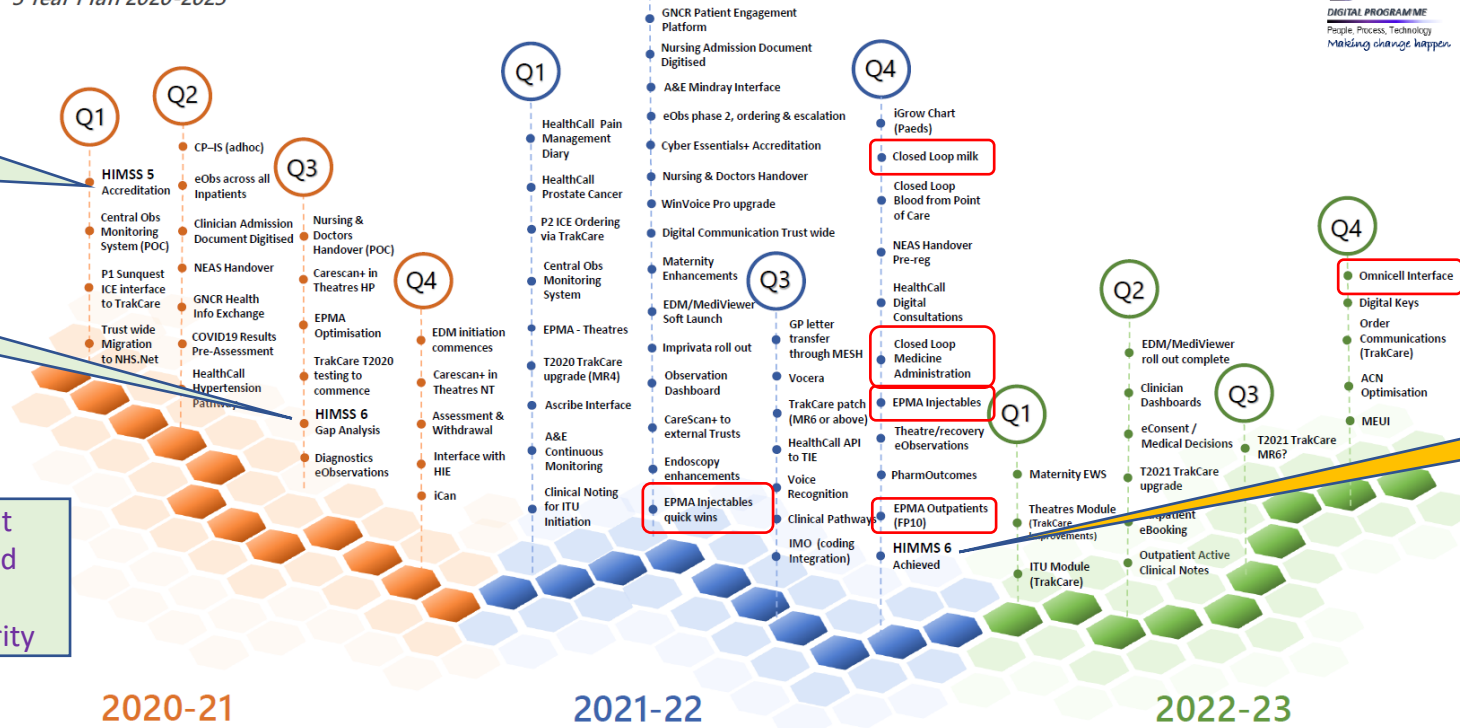
3 Year Plan 2020-2023



Outcome of GDE/FF Programme  
HIMSS Level 5  
National Digital Leader


HIMSS Level 6  
Gap analysis undertaken

Several years of significant technology investment and delivery  
Good level of Digital Maturity



HIMSS Level 6 Target





InterSystems.com

**Summary**

**CUSTOMER**  
North Tees and Hartlepool NHS Foundation Trust

**CHALLENGE**  
Improve inefficiencies of paper medication records

**OUTCOME**  
Access to vital prescribing information in seconds, supported by FDB Multilex medication clinical decision support

**North Tees and Hartlepool NHS Foundation Trust**

**Joining the dots to improve care - Inside North Tees' adoption of the TrakCare EPMA**

North Tees and Hartlepool NHS Foundation Trust, which employs over 5,600 staff and has a 570-bed capacity, was the first English NHS Trust to deploy the InterSystems' TrakCare electronic patient record, in 2015. Since then, the Trust has been using TrakCare to help it achieve its digital health ambitions. Having built on these firm foundations, the Global Digital Exemplar 'Fast Follower' Trust is starting to realise the multiple clinical and efficiency benefits that come with digital transformation.

The Trust has recently completed the roll out of a new electronic prescribing and medications administration (EPMA) module to all inpatient and emergency wards, marking the next stage in the Trust's ambitious digital journey.

Described by Dr Graham Evans, the Trust's Chief Information and Technology Officer as "one of the biggest transformational changes we will implement as part of our EPR programme," the successful adoption of the EPMA is changing and improving the way clinicians work, cutting red tape and improving outcomes for the 400,000 people who the trust cares for every year. Consultant Physician Dr Jay Vasani and Senior Clinical Matron Claire Ranson describe the impact the new EPMA is having on patients and professionals at one of the UK's most technologically advanced hospitals.

**Winner is North Tees and Hartlepool NHS Foundation Trust and InterSystems**

**Best use of EPMA**



**NHS trust saves its nurses nearly 20,000 hours a year through ePMA**

hubpublishing.co.uk

**fdb** First Databank | **FDB Multilex** | Case Study North Tees & Hartlepool NHS Foundation Trust

**North Tees & Hartlepool NHS Foundation Trust realises clinical and efficiency benefits**

**ELIMINATION OF ERRORS/INCIDENTS**

**70%**  
Reduction of incidents in relation to illegible, lost or incomplete patient Kardex  
Incidents in relation to illegible, lost or incomplete patient Kardex were predicted to reduce 50% in the first year. The Trust actually reported a reduction of 70% in incidents and predict 100% in year two with the paper record being completely removed from use on the IP wards.

**IMPROVED PATIENT SAFETY**

**20%**  
Reduction of missed and/or omitted dose incidents  
Missed and/or omitted dose incidents have reduced by 20% within the first year of implementation, with an overall expected improvement of 80% before the end of year two.

**REDUCTION IN TIME**

**19,345**  
Hours saved per annum  
Nursing staff have been able to reduce the time taken to complete the inpatient drugs rounds. From this financial year and with ePMA being fully imbedded in these areas, the time saved per annum is 19,345 hours which is to be reinvested into direct patient care and supporting the Trust's Alternative Workforce Model Initiative.

**REDUCING THE TRUST'S SECONDARY CARBON FOOTPRINT**

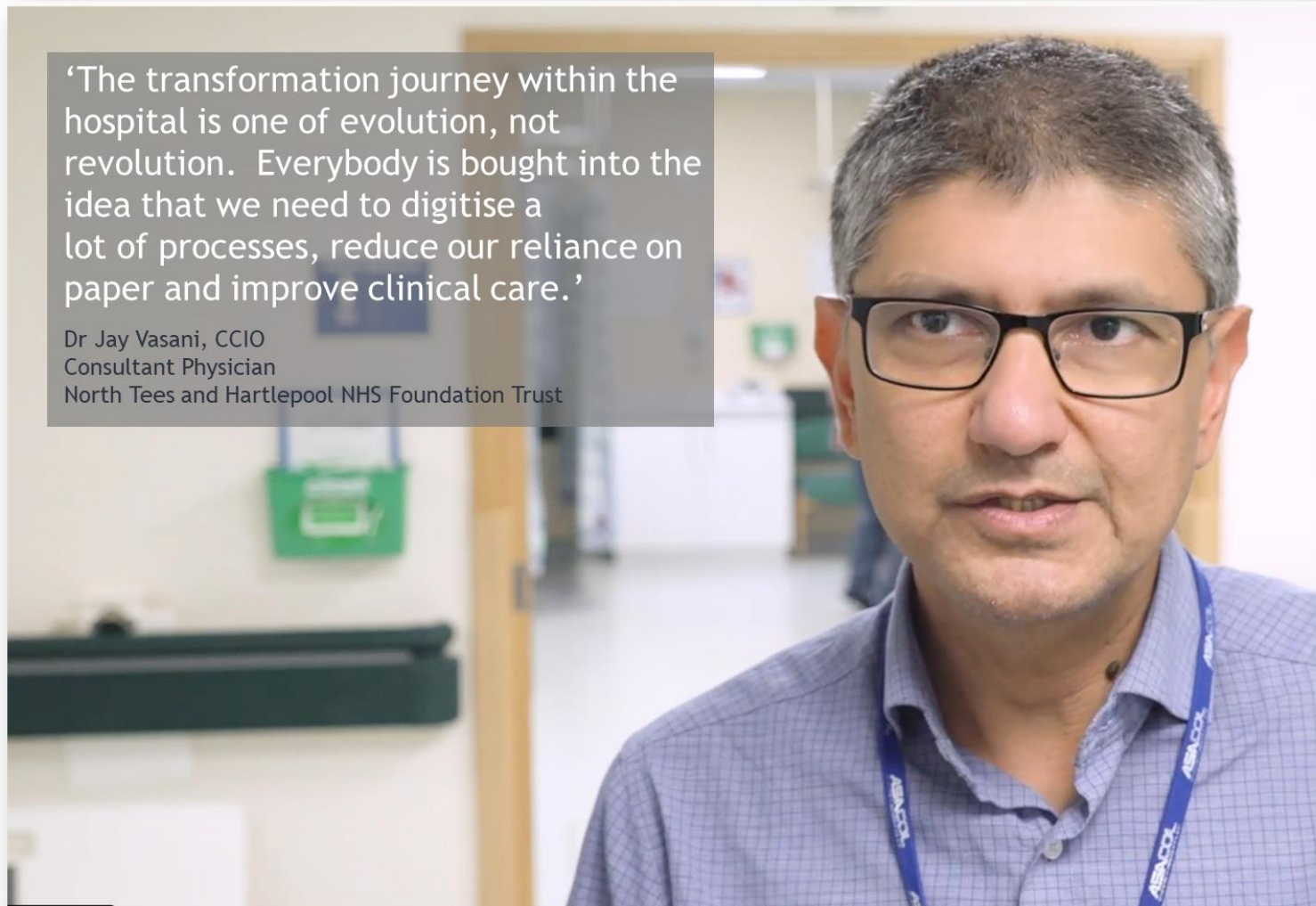
**23.3 TONNES**  
Reduction of CO2e emissions to date  
The Trust is reducing the secondary carbon footprint by 6.70 tonnes of CO2e per annum in relation to digitisation of the patient medicines record (23.3 tonnes of CO2e saved to date)





‘The transformation journey within the hospital is one of evolution, not revolution. Everybody is bought into the idea that we need to digitise a lot of processes, reduce our reliance on paper and improve clinical care.’

Dr Jay Vasani, CCIO  
Consultant Physician  
North Tees and Hartlepool NHS Foundation Trust

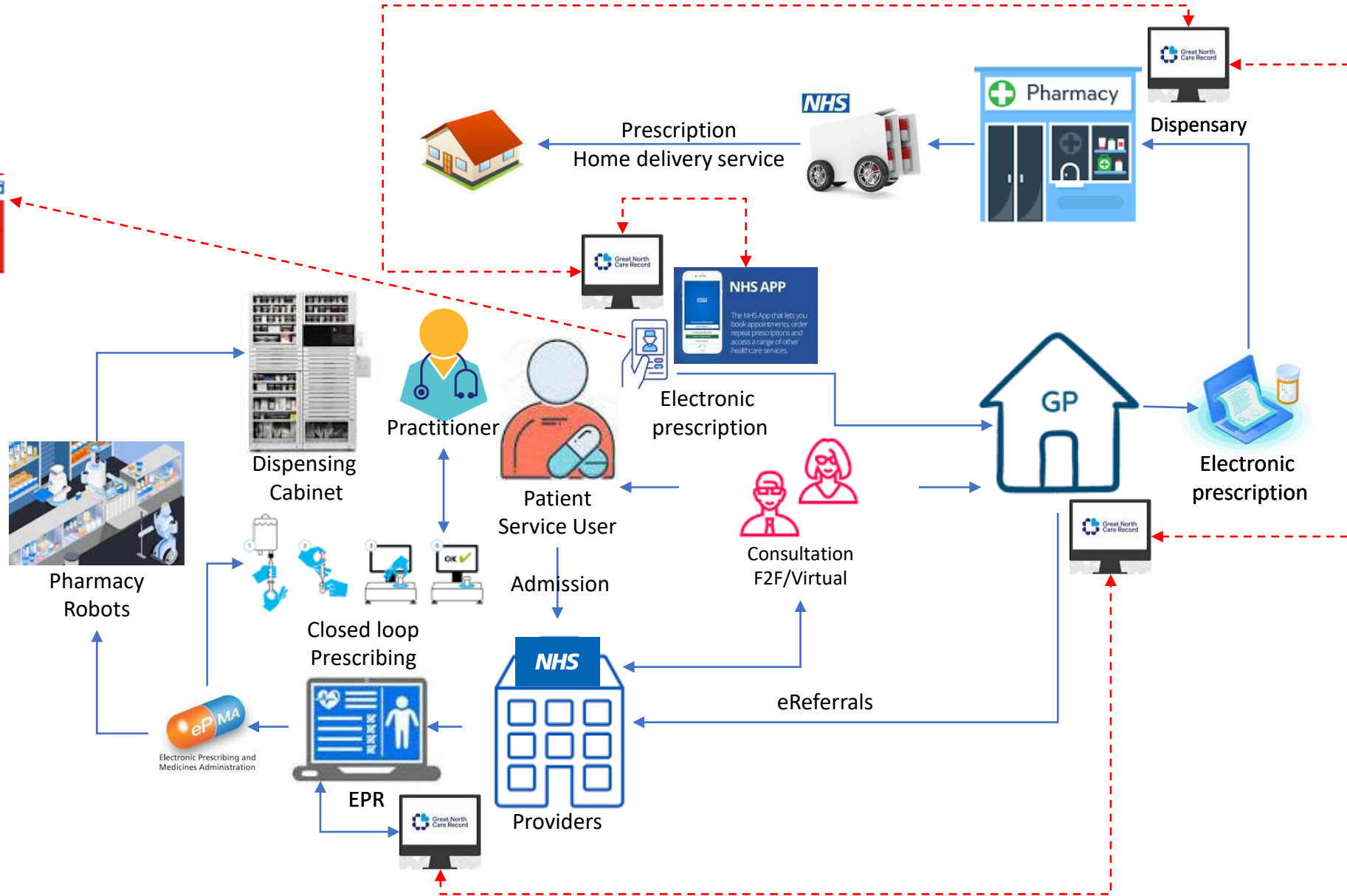




# Aligning patient, practitioner, organisation and system?

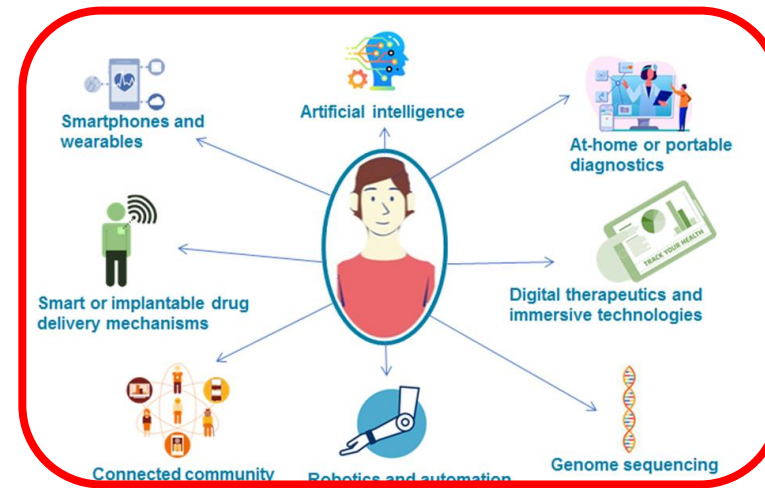
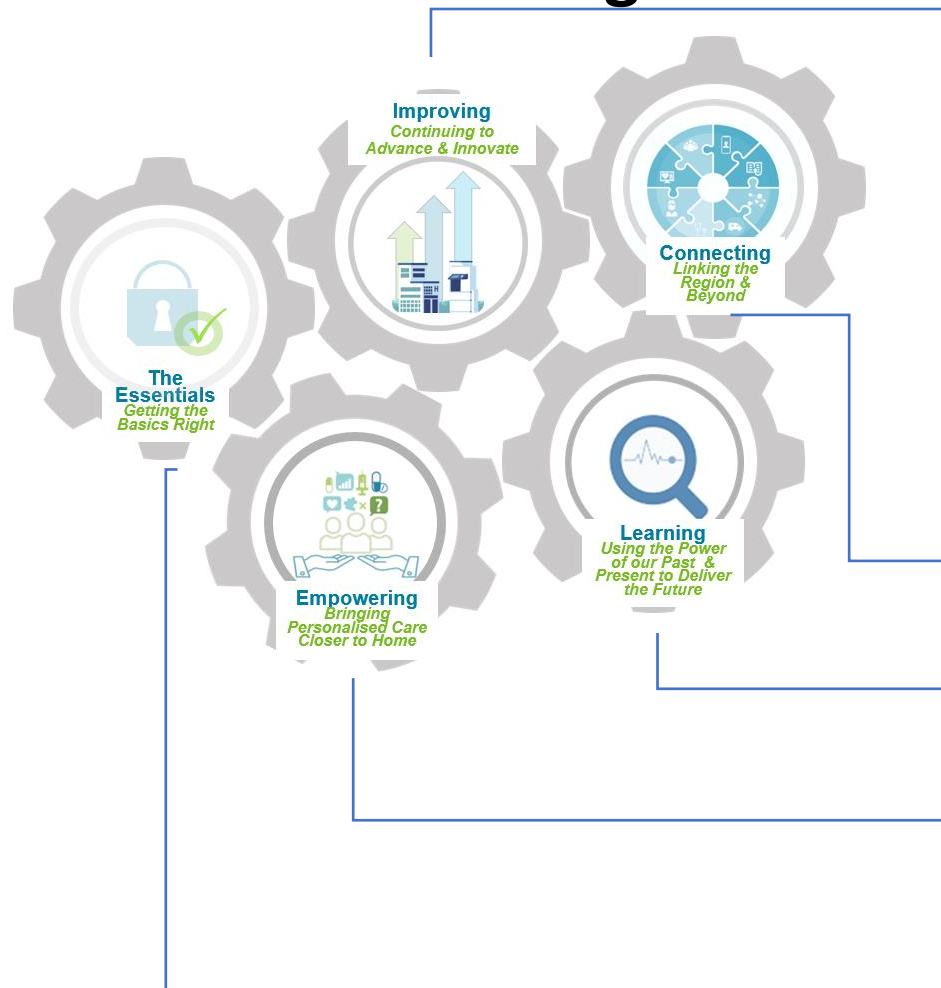
**Service Quality**

- PROMS
- F&FT



# “What *could* digital *do* for medicine/pharmacy services?”

## NENC ICS Strategic themes



- Innovation
- Connectivity
- Thought leadership
- Digital equity
- Pipes & wires
- Security

*‘Don’t do the same things better, do better things…….’*



Thank you  
&  
Questions?





# Breakout Session

**Once the rooms open you will be automatically moved to your chosen room.**

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# Taking the Pharmacy Workforce Forward in a Digital World

Dr Jane Brown  
Pharmacy Dean  
Health Education England

# Taking the pharmacy workforce forward in a digital world

**Dr Jane Brown FRPharmS**

**Pharmacy Dean – North School of Pharmacy &  
Medicines Optimisation, Health Education England**

*The main thing that worries me is  
technology.....*

Mrs K.B. (81 years)

# What do we mean by *digital*?

- Technology?
- E-prescribing
- Robotic dispensing
- E-transfer of information
- Virtual consultations (phone / video)
- Electronic patient records (with patient access)
- Decision support tools
- Simulation / technology enhanced learning



# Digital activity accelerated by the pandemic

- Virtual:
  - Learning
  - Consultations
  - Meetings
  - Conferences
  - Team briefs / away days
  
- Working from home:
  - Reduced commute
  - Work / life balance
  - Home schooling

# The aims.....

- Provide digital services and tools to give people more control over their own health and the care they receive from the NHS
- Give health and care staff the technology they need to help them complete administrative tasks more quickly, freeing up time to spend with patients

# Challenges

- Access to IT / clinical systems
- Wifi
- Access to on-line resources
- Use of trusted information resources
- Clunkiness of some systems
- Different techniques required
  - Consultation / communication skills
  - Educator skills
- Loss of personal connections
- Digital literacy / capability

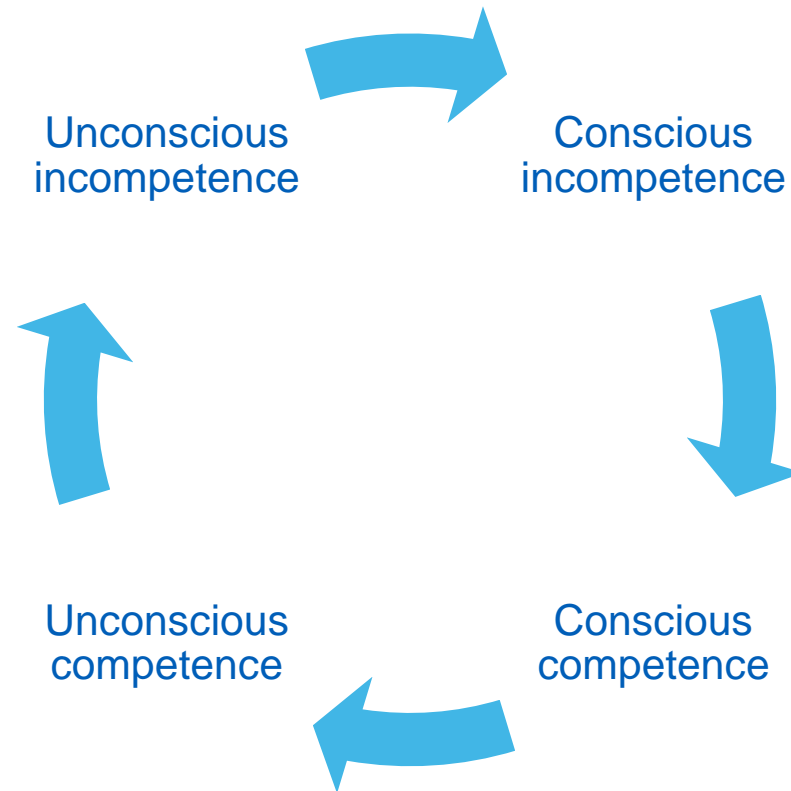
# What is digital literacy?

*“Digital literacies are those capabilities that fit someone for living, working, learning, participating and thriving in a digital society.”*

# Think about ....

- Health and care workers
- Patients / carers / public

# Conscious Competence Learning Model



# Health and Care Digital Capabilities Framework

1. Communication, collaboration and participation
2. Teaching, learning and self-development
3. Information, data and content literacies
4. Creation, innovation and research
5. Technical proficiency
6. Digital identity, wellbeing, safety and security

<https://www.hee.nhs.uk/sites/default/files/documents/Digital%20Literacy%20Capability%20Framework%202018.pdf>

# CPPE - How digital technology can transform care

- On completion of all aspects of this learning programme you should be able to:
  - describe digital healthcare and how is it relevant to your practice and users of your service
  - recognise how digital technologies can improve patient safety
  - identify the various data sources that can be used to support your practice and enable people to self-manage their long-term conditions
  - discuss how digital technologies can transform and enhance healthcare
  - signpost people to appropriate digital resources to optimise their healthcare

<https://www.cppe.ac.uk/programmes/l/digital-e-01>



***This is about people not  
computers***



# Comfort Break and Virtual Poster Viewing

<https://bit.ly/GNPRC9Jul2021>



# Breakout Session

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# ★ Awards ★

## **1<sup>st</sup> Place: Pre- Registration Poster**

Presented by

Anne Henry, Advanced Pharmacist Training Programme Director - North East, and  
Kay Fenwick, Pre-Registration Pharmacist Training Programme Director – North East  
Health Education England

## **1<sup>st</sup> Place: Pre-Registration Presentation**

Presented by Jessica Hardisty, Associate Dean, Pre-Registration Training  
Health Education England

## **1<sup>st</sup> Place: Open Poster Call**

Presented by Will Horsley, Pharmacy Lead for Specialised Commissioning  
NHS England & Improvement



# 1<sup>st</sup> Place: Pre-Registration Poster

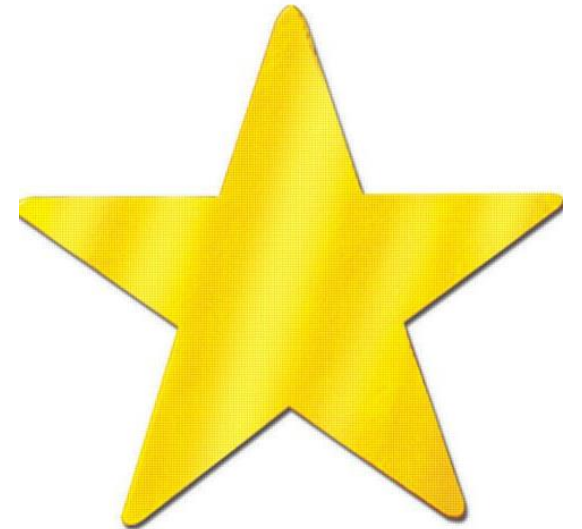
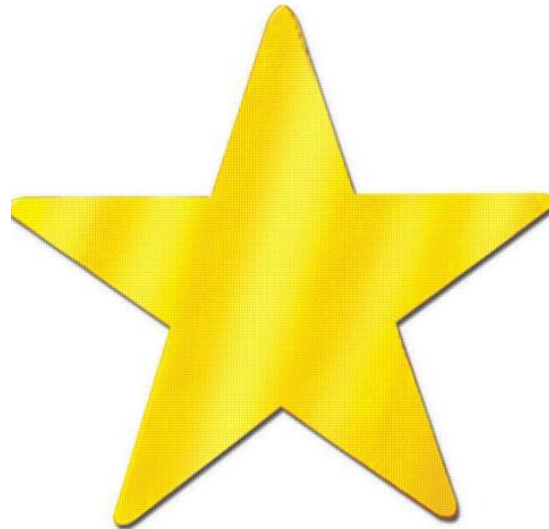
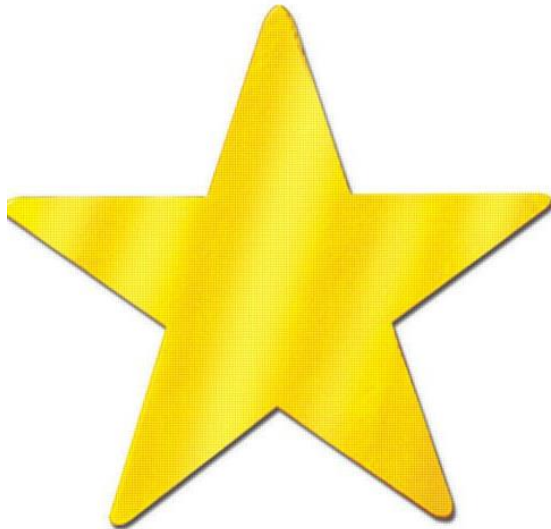
Presented by

Kay Fenwick, Pre-Registration Pharmacist Training Programme Director – North East  
Health Education England

# 1<sup>st</sup> Place

Megan Blenkinship

Investigating the effects of Covid-19 on high INR readings





# 1<sup>st</sup> Place: Pre-Registration Presentation

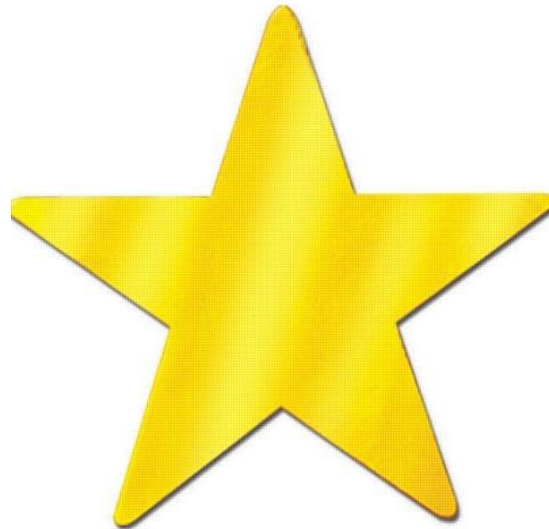
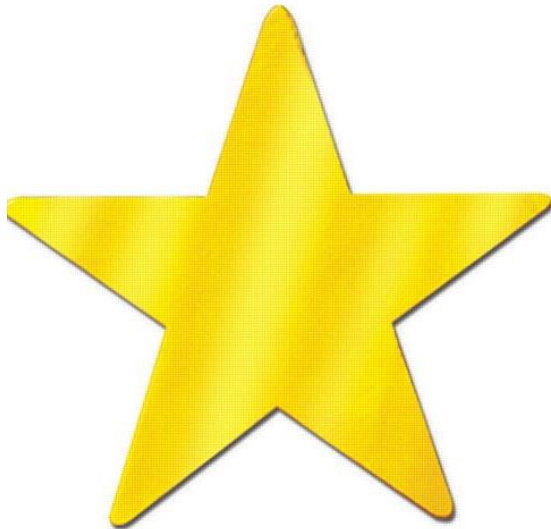
Presented by  
Jessica Hardisty, Associate Dean, Pre-Registration Training  
Health Education England



# 1<sup>st</sup> Place

Hannah McMillan

Auditing the prescribing of oral tetracycline's for the management of acne in patients >12 years old in a GP surgery





6

# 1<sup>st</sup> Place: Open Poster Call

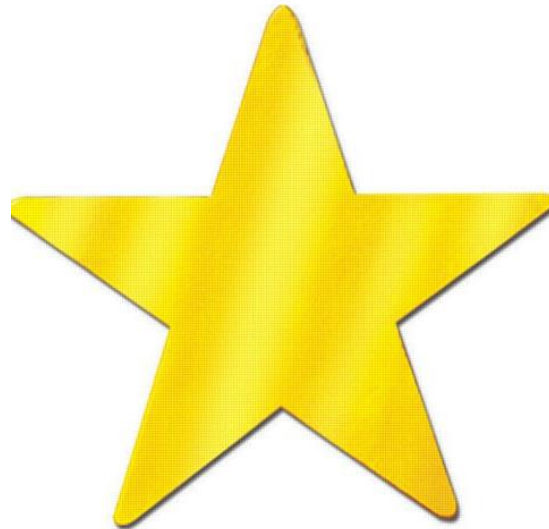
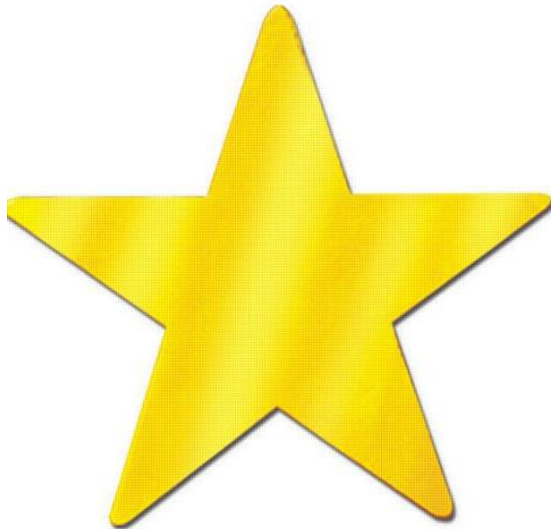
Presented by

Will Horsley, Pharmacy Lead for Specialised Commissioning  
NHS England & Improvement

# 1<sup>st</sup> Place

Rachel Nealen

“Healthy Living Pharmacy’ and ‘Making Every Contact Count’- what will be the legacy of COVID-19?”





# Closing Remarks

Dr Wasim Baqir

National Pharmacy Advisor: Pharmacy Integration Programme  
Primary Care, Community Services and Strategy Directorate  
NHS England and Improvement



# Thank you for joining us and have a lovely evening

- Speaker presentations will be circulated following the event.
- The event has been recorded and will be shared.
- A short survey will be circulated, please take a couple of minutes to complete it as your feedback is important to us.
- To be notified of details of next years conference, follow us on Twitter @GtNorthPharmRes