

The sepsis modern service framework

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The 10 Year Health Plan & commitments

Setting a new strategic direction

September 2024: Lord Darzi's independent investigation into the state of the NHS

Now: the government launched the 10 Year Health Plan in July 2025 setting out bold ambitions for change

Next Steps: Delivery plan; Cancer Plan published; Workforce 10-year plan and MSFs to follow

The 10 Year Health Plan sets out a **bold** and **ambitious** new course for the NHS which is underpinned by science, technology, innovation, and diagnostics

The plan seizes opportunities provided by new technology, medicines and innovation to deliver better care for all patients and better value for taxpayers

It reinvents the approach to healthcare, to guarantee the NHS will be there for generations to come

Through the three shifts, we will personalise care, give more power to patients, and ensure that the best of the NHS is available to all

Hospital to Community

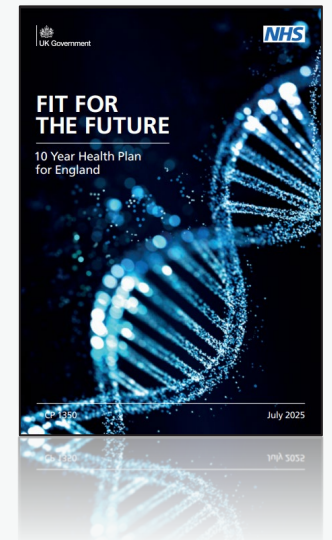
"Too many people end up in hospital, because too little is spent in the community"

Analogue to Digital

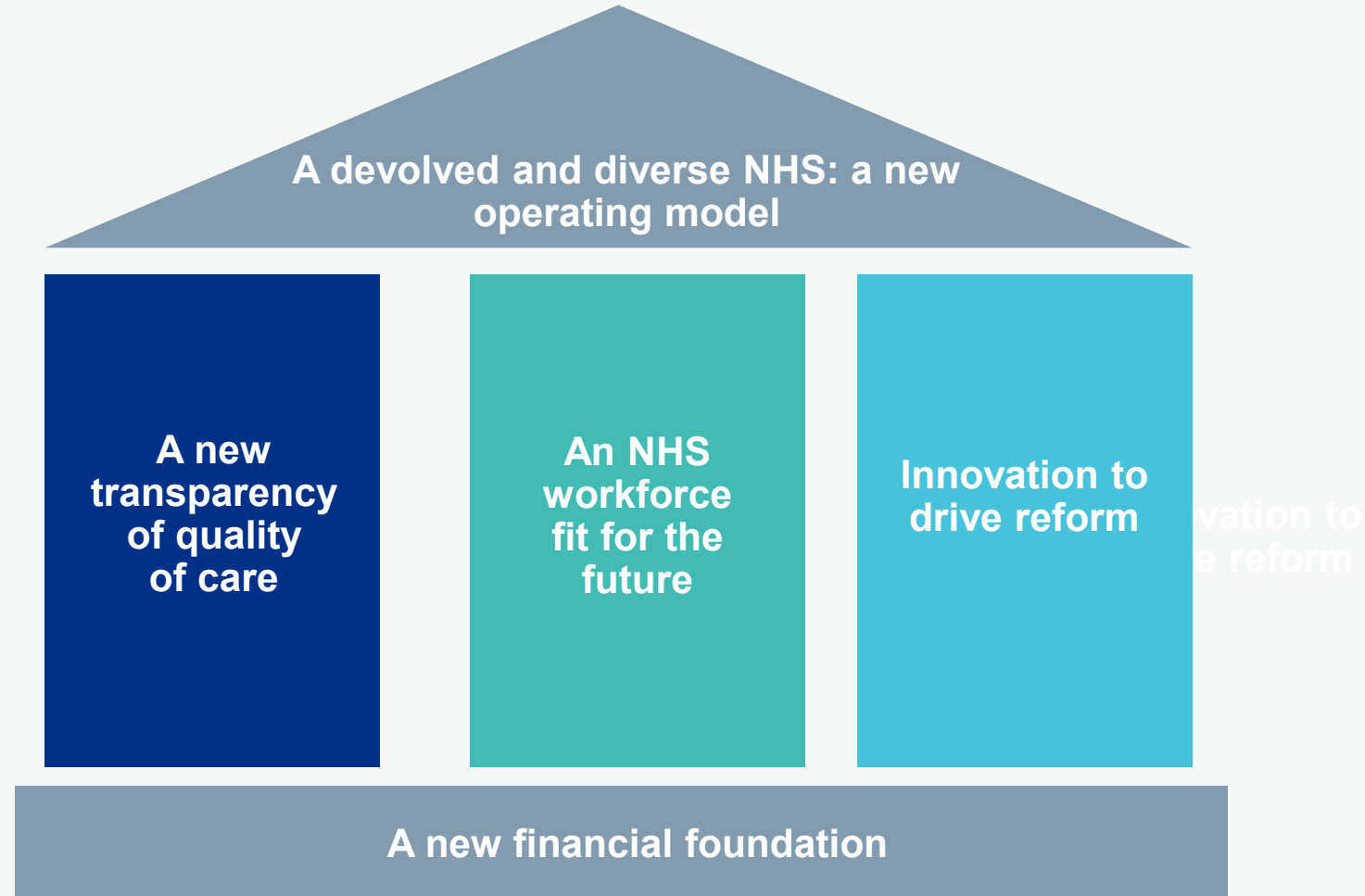
"Parts of the NHS are yet to enter the digital era"

Sickness to Prevention

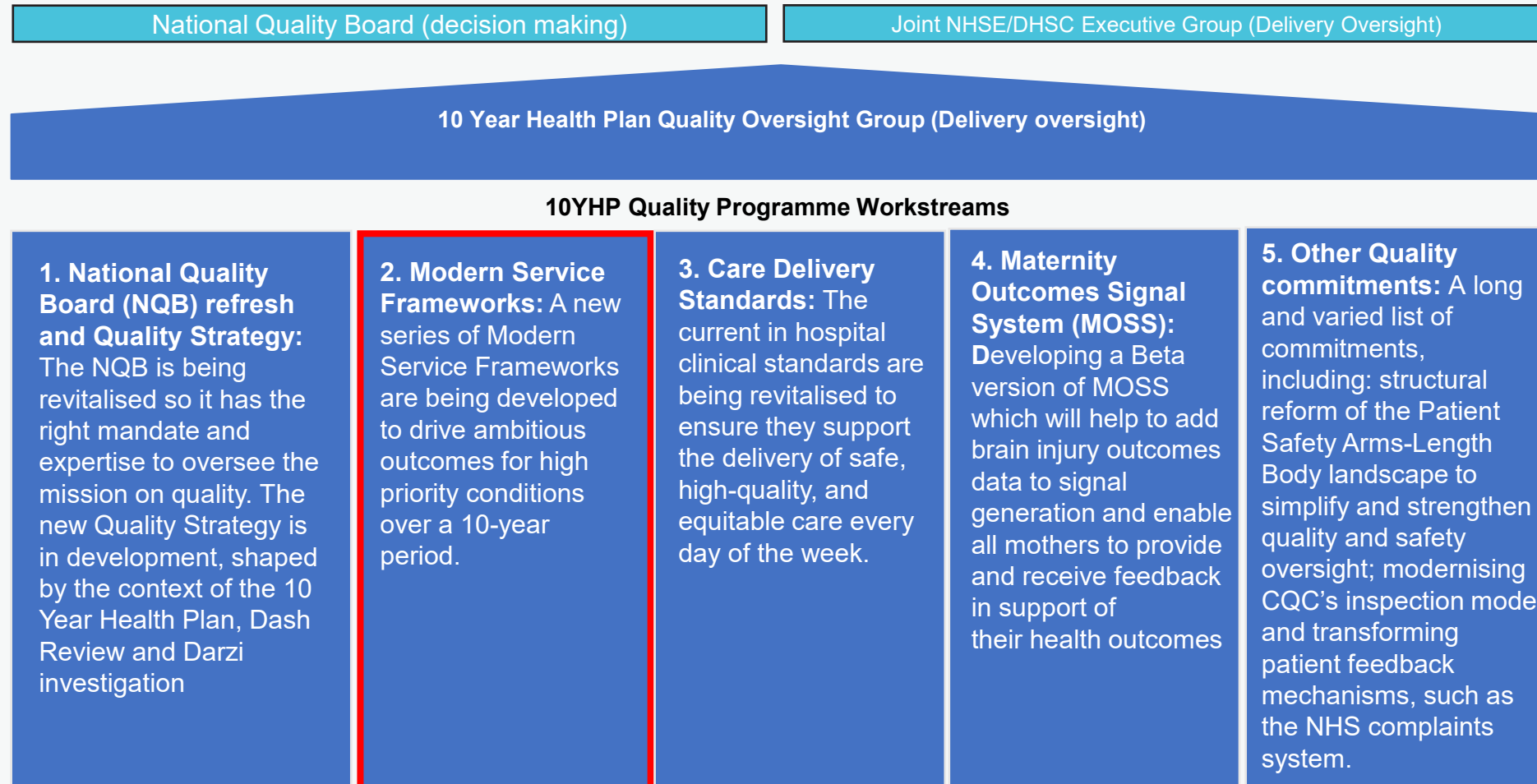
"Many of the social determinants of health...have moved in the wrong direction."



How change will happen – new operating model



Quality workstream and programme governance – high level



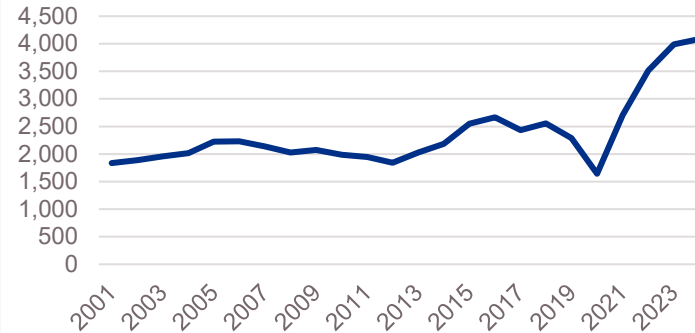


The challenge and “why now”

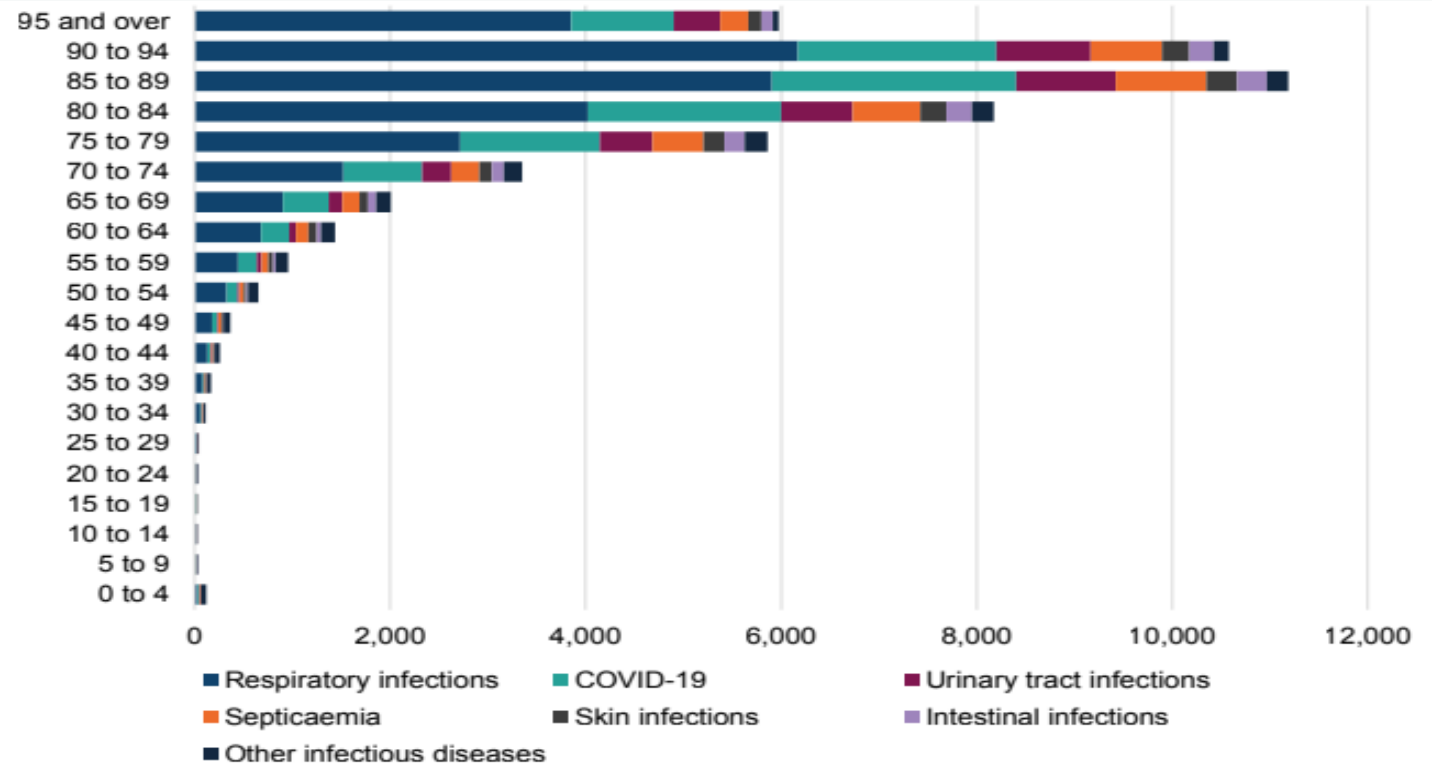
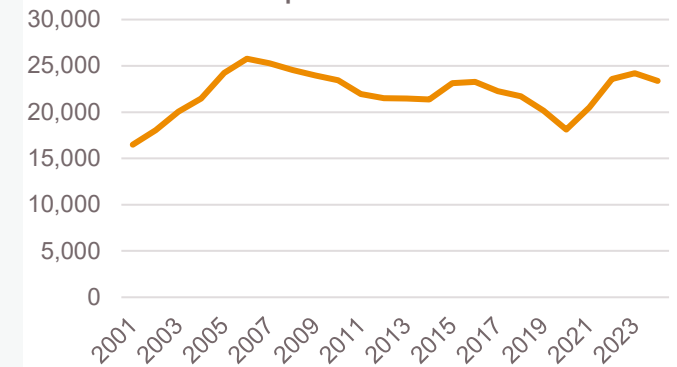
Sepsis

- Infection + dysregulated host response → organ dysfunction
- Infection is common
- Sepsis less so but it is potentially deadly – likely cause of most infection mortality
- Exact numbers with sepsis subject to expert discussion
- Prevalences, mortality and morbidity vary between groups – across the life course and within our diverse population

Number of deaths due to sepsis - ONS

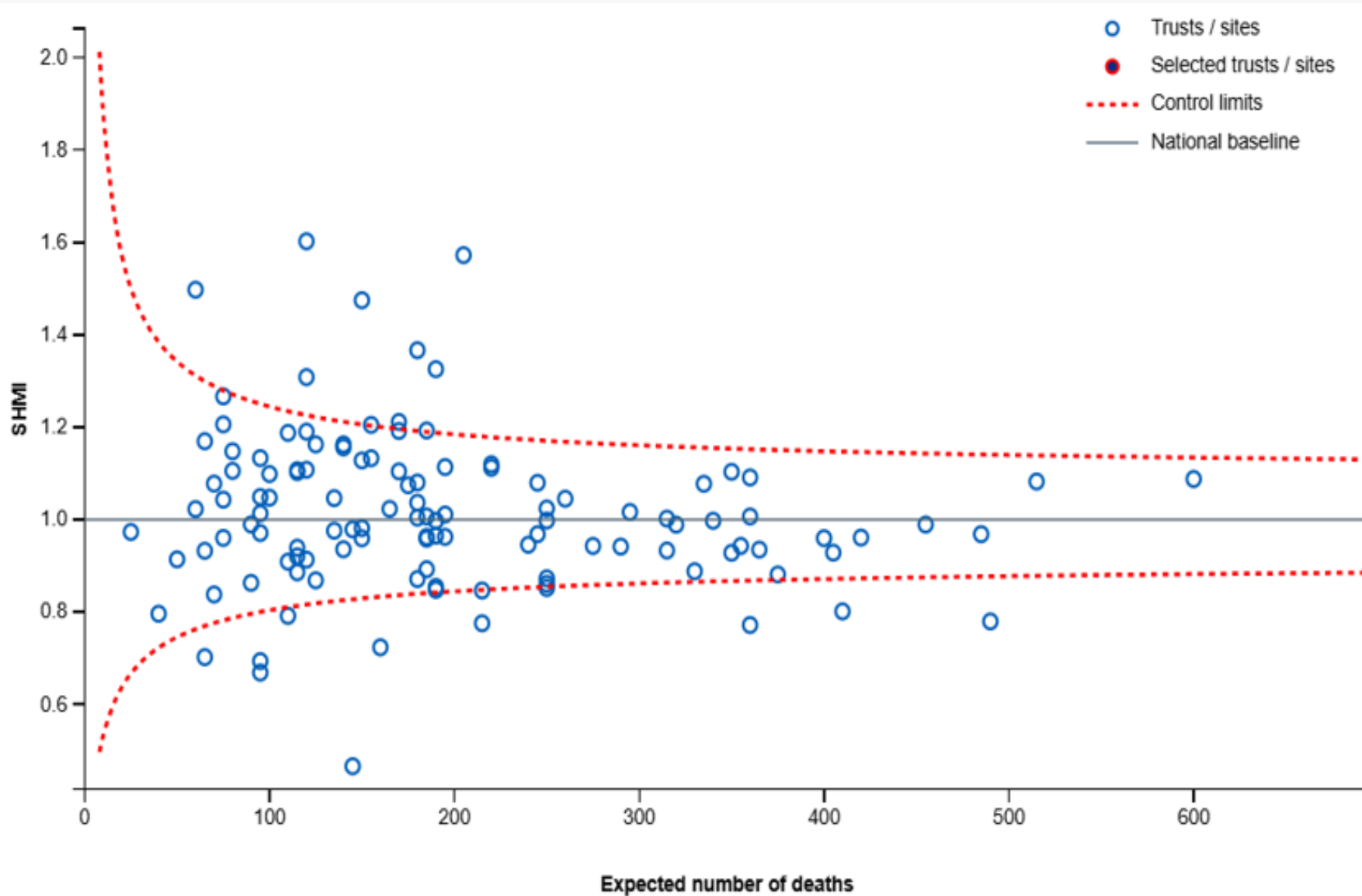


Number of deaths involving sepsis - ONS



Source: Office for Health Improvement and Disparities, based on mortality data from the Office for National Statistics

Organisational considerations



There is unwarranted variation in sepsis mortality data between trusts

There were over 150,000 emergency admissions related to sepsis in 2024/25 (likely an underestimate)

Infection generally is the most common reason for attending ED

Estimated to cost the NHS £2bn per year

Qualitative data from investigations, incidents, PFDs all demonstrate potential for improvement

The core areas of the Sepsis MSF

Outcome goal

A long-term ambition to reduce death, life-threatening complications and long-term impacts from sepsis and severe infection in all patient groups by 2035.

Innovation and research

A research and innovation action plan to advance diagnostics, prediction, monitoring and targeted interventions, accelerating the evaluation and adoption of technologies

Themes and actions

Six themes—structured around the PIER framework—each with priority actions that will improve prevention, identification, escalation and response across all settings, with a specific focus on addressing unwarranted variation and health inequalities.

Improvement and assurance

Strengthening data, audit and feedback; developing a single sepsis data repository; and using quality assurance mechanisms (including financial levers) to support consistent delivery of high-quality care and monitor progress over time.

Our approach to the future



Design of the MSF

- Structured around the **PIER framework** (Prevention, Identification, Escalation, Response) to define actions across all settings.
- Developed through **multi-disciplinary working groups** including primary/community, pre-hospital & ED, CYP, adult inpatient, maternity & neonatal, innovation, inequalities, and data.

Improving what we do

- Focus on **optimising existing pathways** and reliable delivery of best practice (diagnostics, early warning systems, escalation).
- National improvement programmes for **deterioration management**, acute pathway optimisation, and **training in sepsis, IPC and acute deterioration**.
- Creation of a **single national repository** for sepsis and severe infection data to support QI, research and tracking variation, enhanced **audit, feedback and surveillance**,
- Use of “hard” and “soft” levers to support adoption of evidence-based sepsis care.

Innovating for the future

- National Sepsis **Research and Innovation Action Plan**
- Working with partners **nationally and internationally**
- Focus on **digital innovation and AI, wearables, novel diagnostics (POCT, biomarkers), genomics (and other –omics)**
- **Exploring innovation infrastructure**, e.g. platform trials, biobanks etc.

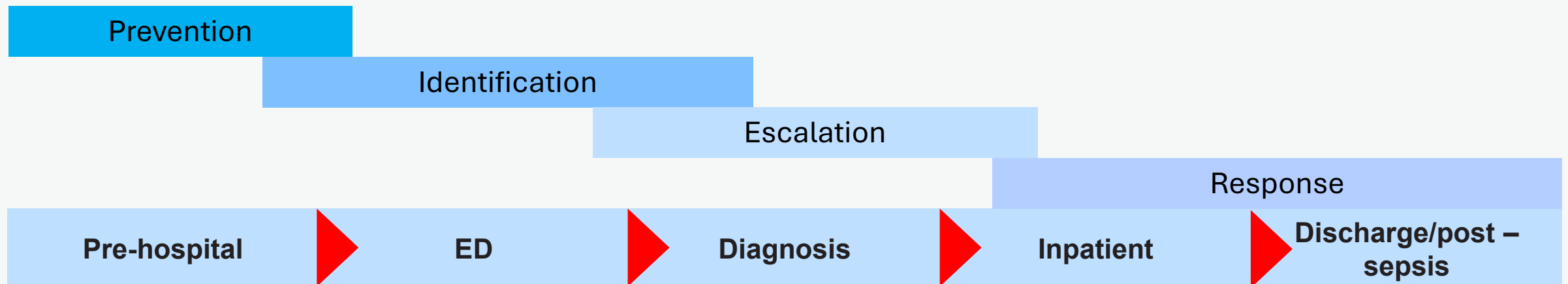
The pathway

We are using the PIER framework as our lens, considering:

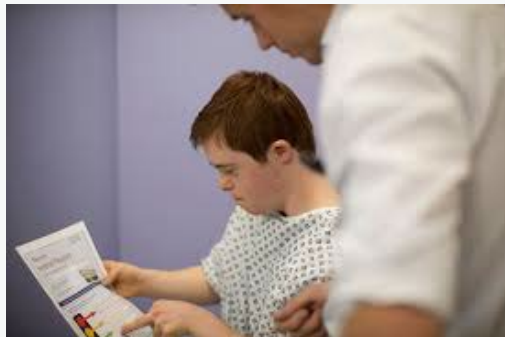
- Prevention
- Escalation
- Identification
- Response

PIER

This has already been successfully used as part of the Martha's Rule and Managing Deterioration programme. All workshops and working groups have been considering the following disease progression through the PIER lens (acknowledging that this is not a simple linear progression for all patients):



This illustrates the infection/sepsis pathway. Our ambition is to shift activity to the left



Which outcomes and which patients?

Definitions

- **Severe infection** – hospitalised with infection
- **Sepsis** – operational vs. clinical vs. academic definitions
- **Mortality**: inpatient mortality from sepsis / infection
- **Life-threatening complications**: at least single organ support on a critical care unit
- **Long-term impact**: including Days Alive and Out of Hospital (DAOH) at 1 year

Measures

- Unadjusted and adjusted
- Both absolute numbers and rates (Standardised Mortality Rate, Case Fatality Rate)
- Balancing metrics - AMS

Other relevant information

- Need to develop clear definitions for patients who are on active treatment pathways including potential for organ support vs. those who have some treatment limitations.

All patient groups

- Adults (>18y) on active treatment pathways
- Children (1 – 17y) on active treatment pathways
- Pregnant/peri-partum women
- Neonates
- Surgical vs. non-surgical
- Health inequalities groups:
 - All IMD quintiles
 - All ethnic groups
 - Biological sex / self-identified gender
 - MH patients
 - Patients with learning disabilities
 - Patients with physical disabilities

Themes and actions – improving what we do now

We have defined 6 themes and 14 actions which provide the architecture for the MSF

Theme	
A) A person-centred approach	<ul style="list-style-type: none">• Right person, right treatment• High tech and Low tech
B) Supporting our staff and our population to understand sepsis	<ul style="list-style-type: none">• What do the public need to know?• Right staff, right experience• Across health and social care
C) Prevention: optimised and equitable	<ul style="list-style-type: none">• Public health approaches• Infection development, transmission and progression
D) Identification: precise and accurate	<ul style="list-style-type: none">• Getting the basics right• Advancing diagnostics and prognostics
E) Escalation: rapid and reliable	<ul style="list-style-type: none">• Who, how, what?• Individualised approaches?• Resourcing requirements for provide safe effective care
F) Response: timely and effective	<ul style="list-style-type: none">• Right person, right treatment• Recovery and rehabilitation

Innovation and research and development

Innovation across the care pathway is critical to improving sepsis care, from prevention to earlier identification, clinical escalation and the response, both for patients suffering acute sepsis and longer-term consequences

- Alignment to the Big Bets:**
- **Patient centric experience** working with patients and charitable bodies to enhance innovation activity, training and care
 - **Innovation** working with NIHR, Health innovation networks and others to accelerated development and adoption
 - **New technology, wearables, and AI** to position data at the heart of sepsis clinical decision support delivered in new models of care including community
 - **Genomics and metagenomics** to detect patients with sepsis, inform ICU support, and treatment and to identify host factors of susceptibility to severity, deterioration and relapse, inclusive of working with the metagenomic respiratory centres and the infectious disease genomics network of excellence to deliver new, rapid genomics led care pathways
 - **Workforce development** for flexible provision and delivery utilising innovation and healthcare professionals in multiple settings for intervention when and where needed

Innovation Pillars and Research Priorities					
People	Prevention	Prediction	Diagnosis	Intervention	Monitoring
Staff, patients, carers Education and training Targeted communication	Vaccination Prevention of infection, transmission and severe illness	Individualised responses Objective measures for stratification	POCT and other diagnostics to identify infection/guide treatment, risk assessment and blueprints Metagenomics to identify causative agents	Post discharge care and survivorship, safety netting protocols and risk scoring tools Screening for causative agents of sepsis	Wearable devices - early warning and deterioration and clinical decision support
Clinician and patient and public involvement					
Industry partnerships to drive development					
Academic and funder partnerships to identify priorities and drive sepsis research and implementation					
Learning from international system partners					

Coming soon...

Thank you to....

- Dame Professor Sue Hill
- Dr Matt Fogarty
- Professor Vicki Chalker

- Allan Burge
- Sarah Tilford
- Priya Pillai
- Darcy Browne
- Alex Wilson
- Sara Geater

- Hundreds of stakeholders: Charities, Clinicians, Scientists, Funders, Commissioners

- Our patient and public partners