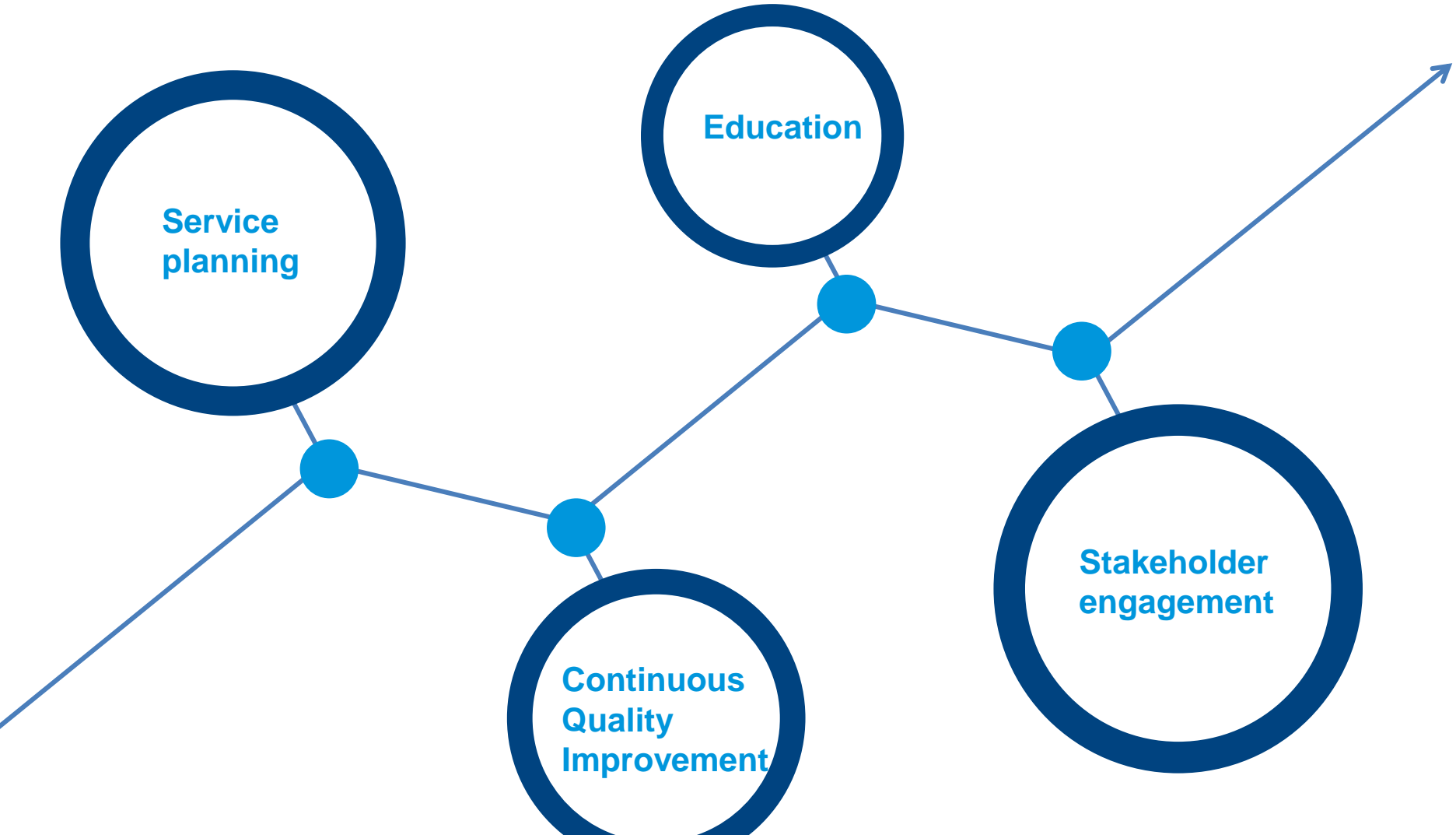




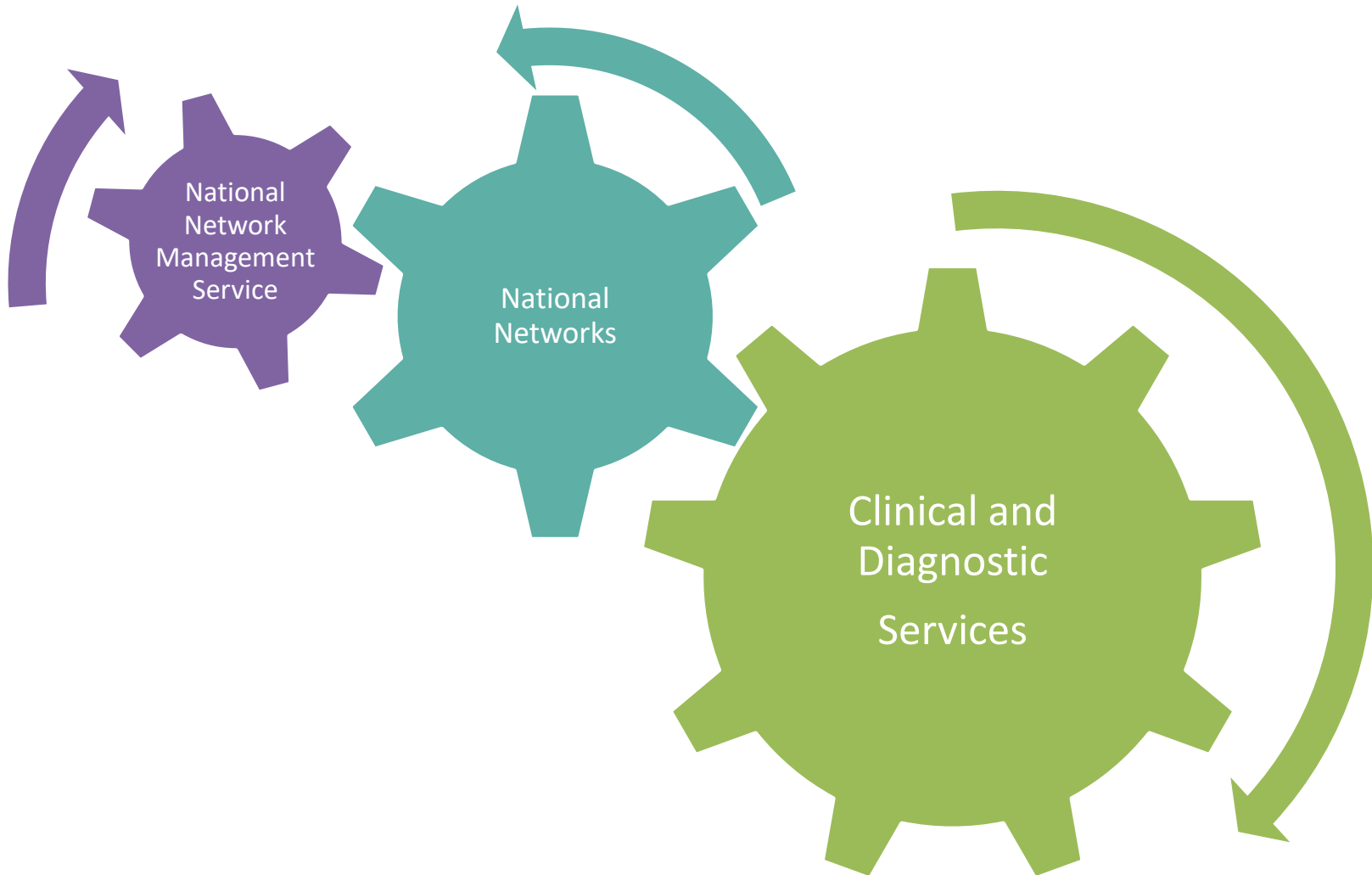
**National  
Managed  
Diagnostic  
Networks**

# Who we are and what we do

To drive up quality of service

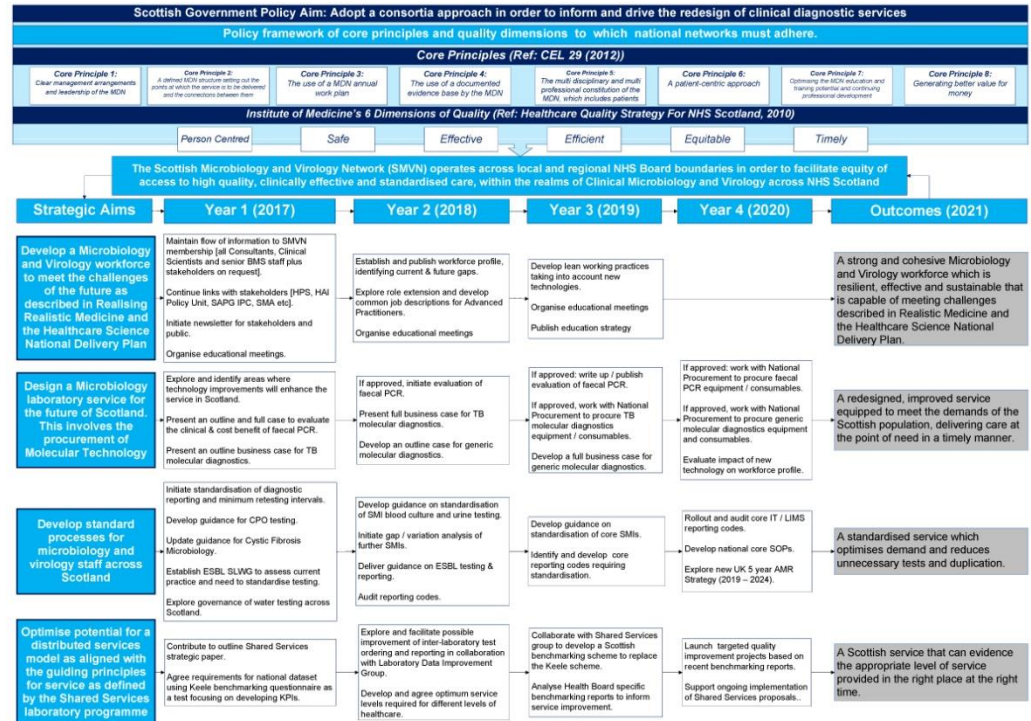


# Maximising the impact of national networks



# Making a Difference - Monitoring

- Benchmarking
- 5 year workplans
- Annual reports
- Annual performance review
- 3 – 5 year external review, linked to continuation of funding



A large teal arc curves from the top left towards the bottom right. A solid blue circle overlaps the bottom right end of this arc.

**Scottish Clinical  
Biochemistry  
Managed  
Diagnostic  
Network**

National Managed Diagnostic Network





**“ The Scottish Clinical Biochemistry Managed Diagnostic Network (SCBMDN) aims to enable sharing of best practice, innovation and improvement. It sets out to achieve harmonisation where possible and provide a forum for the introduction and evaluation of new and developing concepts. ”**

# Workgroups

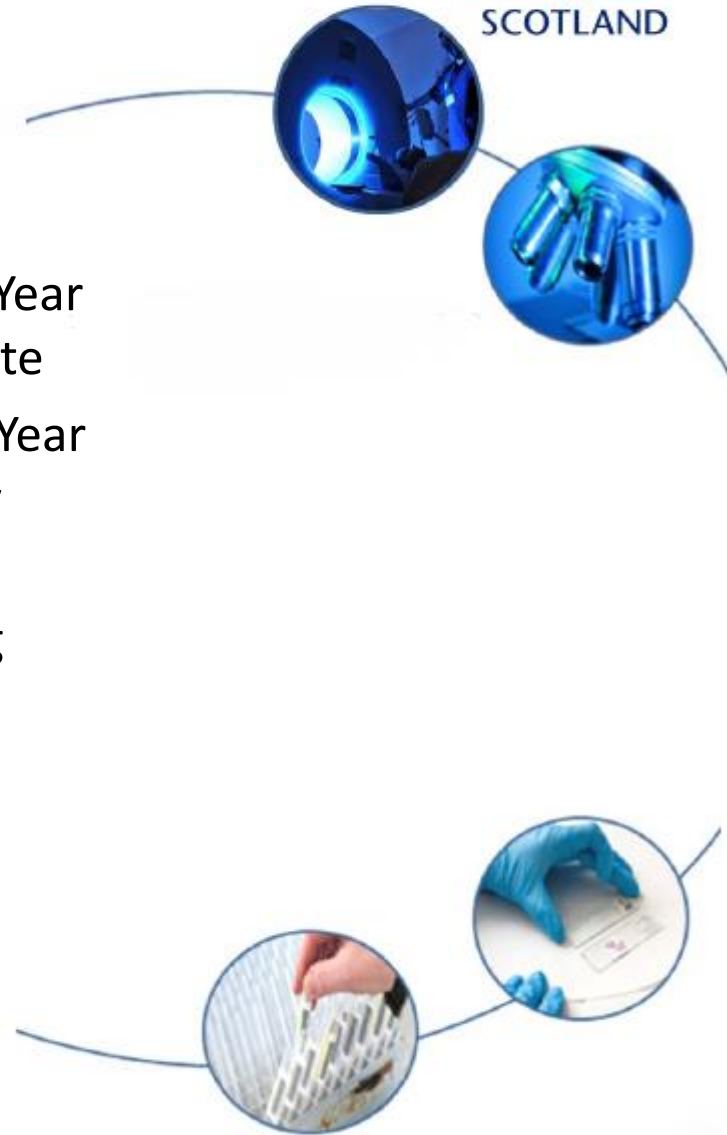
Currently SCBN has the following workgroups:

- Innovation and Demand Optimisation
- Data
- Cancer
- Standardisation
- Education and Training



# 5 Year Plan

- Annual Report, 12 month Workplan and 5 Year Workplan are published on the SCBN Website
- SCBN was the first network to develop a 5 Year Workplan - this model has been adopted by other networks
- 5 Year Workplan has been developed using SMART objectives (Specific, Measurable, Achievable, Realistic and Time-Oriented)
- Links with the work carried out by the workgroups





# Workgroup Achievements

- Innovation and Demand Optimisation:

- Produced guidance on Thyroid testing, FSH testing in Menopause, Vitamin D Testing, U&Es in Primary Care,
- Developing Innovation Dashboard – to be published on SCBN website

- Data Group

- First published SCBN Data Benchmarking Report for all of Scotland (2017-18 data)
- Collection of 2018-19 Benchmarking data is underway
- Atlas of Variation



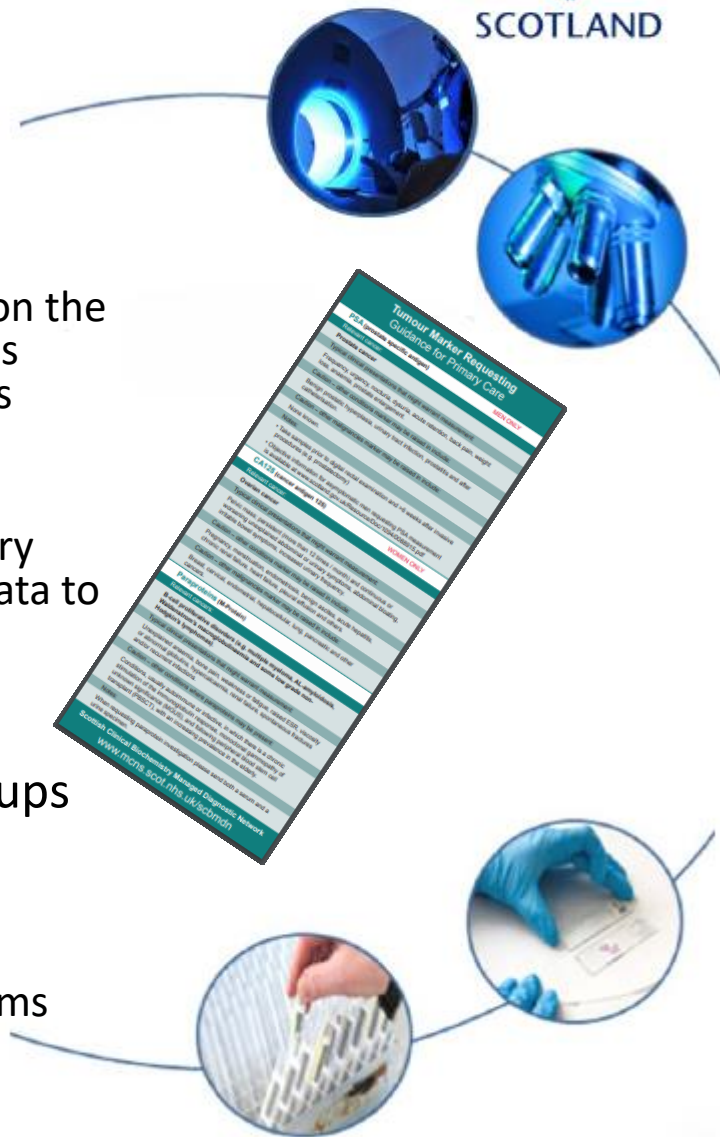
# Workgroup Achievements

- Cancer

- Published Tumour Marker bookmark - guidance on the use of tumour markers for the non specialist and is included in the Scottish Cancer Referral Guidelines
- CA125 Pilot Audit was presented as last year's Education Day
- CA125 Nation Audit is underway – all biochemistry data has been collected and waiting on Imaging data to complete audit. Will be presented at this years Education Day

- Standardisation and Education & Training Groups

- New groups that have had initial meeting
- Standardisation - work will be informed by the National Standardisation group
- Education & Training – looking at ongoing problems with STP funding and the development of online training and education



# Education and Feedback

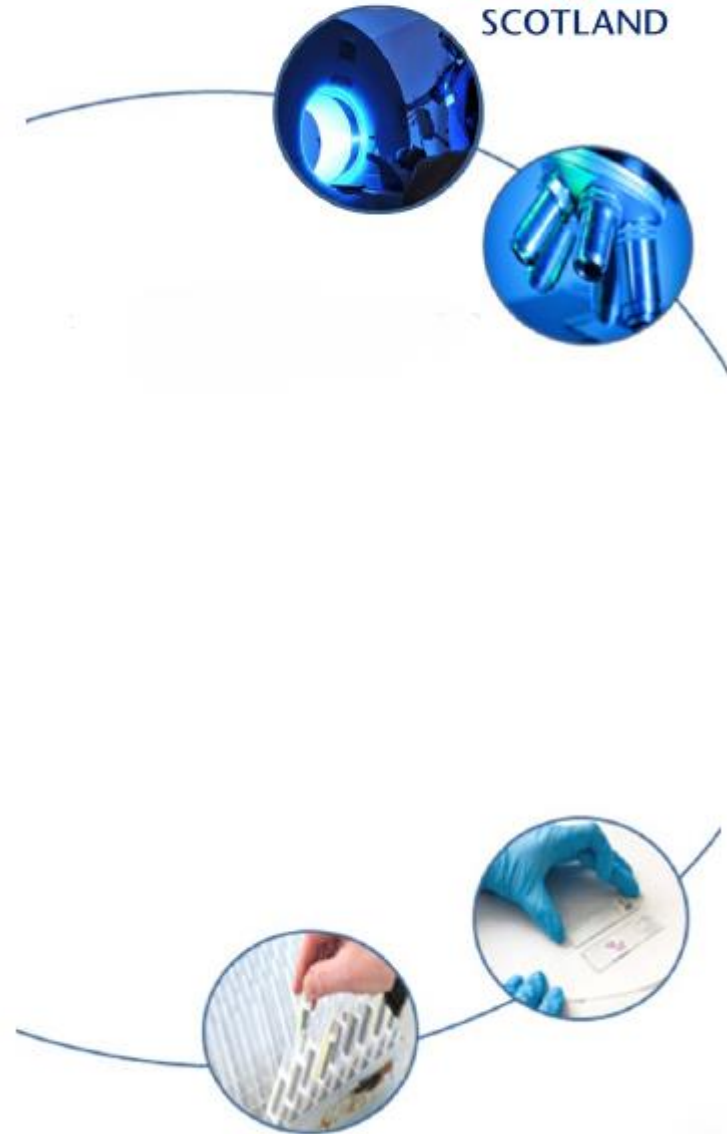
- Annual Education Day was held in COSLA last September – next one 6<sup>th</sup> Sept 2019!
- Last year – talks on iLFT, Calprotectin, CA125 pilot audit, GPs and cancer referrals, Diagnosis of Myeloma
- This year – talks on C Peptide business case, CA125 National Audit, Data / Atlas of Variation, Quality Improvement, Trainee Presentations – Audit Projects
- Over 70 attendees
- Good feedback (evaluated by IMS)
- Continued use of the website and twitter to promote the SCBN



# External Groups

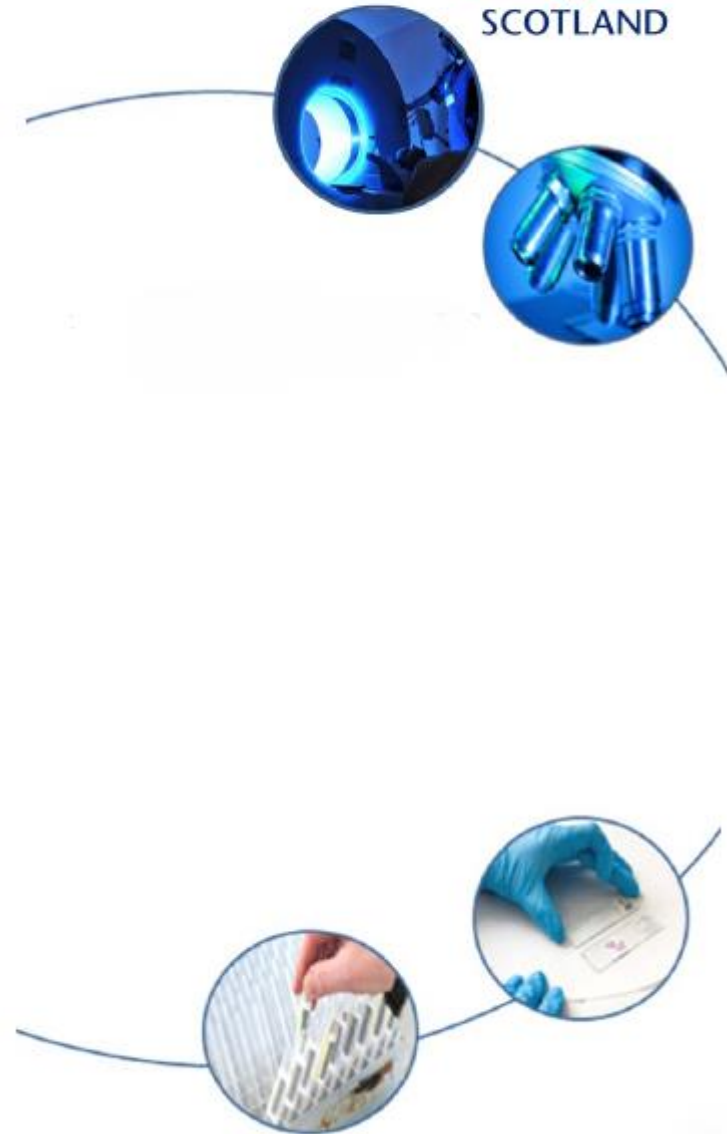
Currently SCBN has representatives working with:

- National Laboratories Programme
  - Distributed Services Model
  - IT Working Group
  - Data Group
- NSS Demand Optimisation Group
- SGHD Healthcare Science National Delivery Plan
  - BNP
- Scottish Health Technologies Group
  - Evaluation of markers of liver fibrosis
- NHS Education Scotland
- Modernising Outpatients Programme
- SGHD Performance & Delivery Directorate
  - Use of qFIT in Symptomatic Patients



# Other Achievements

- C Peptide Business Case – approved by Diagnostic Steering Group and Laboratories Oversight Board
- Engaged with all the Health Boards of NHS Scotland to ensure representation
- First network to develop a 5 Year plan
- Implementation of a regional service for Biologic Drugs with NSD
- Built links with other networks for audit purposes and service developments



# Future Role

- National Laboratories Programme have developed a blueprint of Laboratory Service Development: Distributed Services Model
- Clearly indicates a need for National oversight – could this be via the DSG?
- Indicates a large number of process, organisation and technology changes. Role for the SCBN in many areas
  - Work already being undertaken
  - Work currently being planned
  - Coordination
  - Aligned working
  - Partnership working
- Maintaining and Developing the Diagnostic Networks becomes vital for future efficient working in Laboratories in Scotland





**Visit our website:  
[www.mcns.scot.nhs.uk/scbmdn](http://www.mcns.scot.nhs.uk/scbmdn)**

**Contact us at:  
[nss.SCBMDN@nhs.net](mailto:nss.SCBMDN@nhs.net)**

**Or tweet us @NMDNScot**

**Scottish  
Clinical  
Biochemistry  
Managed  
Diagnostic  
Network**

**#biochemistrycommunity**



# Haematology and Transfusion Scotland (HaTS)

National Managed Diagnostic Network





# HaTS Vision:

**HaTS has been recently nationally commissioned.**

**HaTS will facilitate service redesign and care pathway improvement, including streamlining processes, reducing unwarranted variation, optimising practice and transforming roles to meet future service needs in the Scottish Haematology Service.**

**Haematology  
and  
Transfusion  
Scotland  
Managed  
Diagnostic  
Network**

# Introduction

- The Haematology and Transfusion Scotland Diagnostic Network was newly inaugurated on the 1<sup>st</sup> April 2019.
- The HaTS network can provide a formal representation for the Haematology and Transfusion community across Scotland.
- Provides a forum for the Haematology and Transfusion community to work together by bringing together the relevant stakeholders and utilising the widespread scientific expertise across Scotland.
- There are various national and regional strategic programmes and initiatives that require support and information that the network can provide.
- Without the support of the HaTS network the people of Scotland ultimately receive a poorer service that fails to meet the Institute of Medicines Dimensions of Quality and means national programmes such as Realistic Medicine are not able to produce the best results.



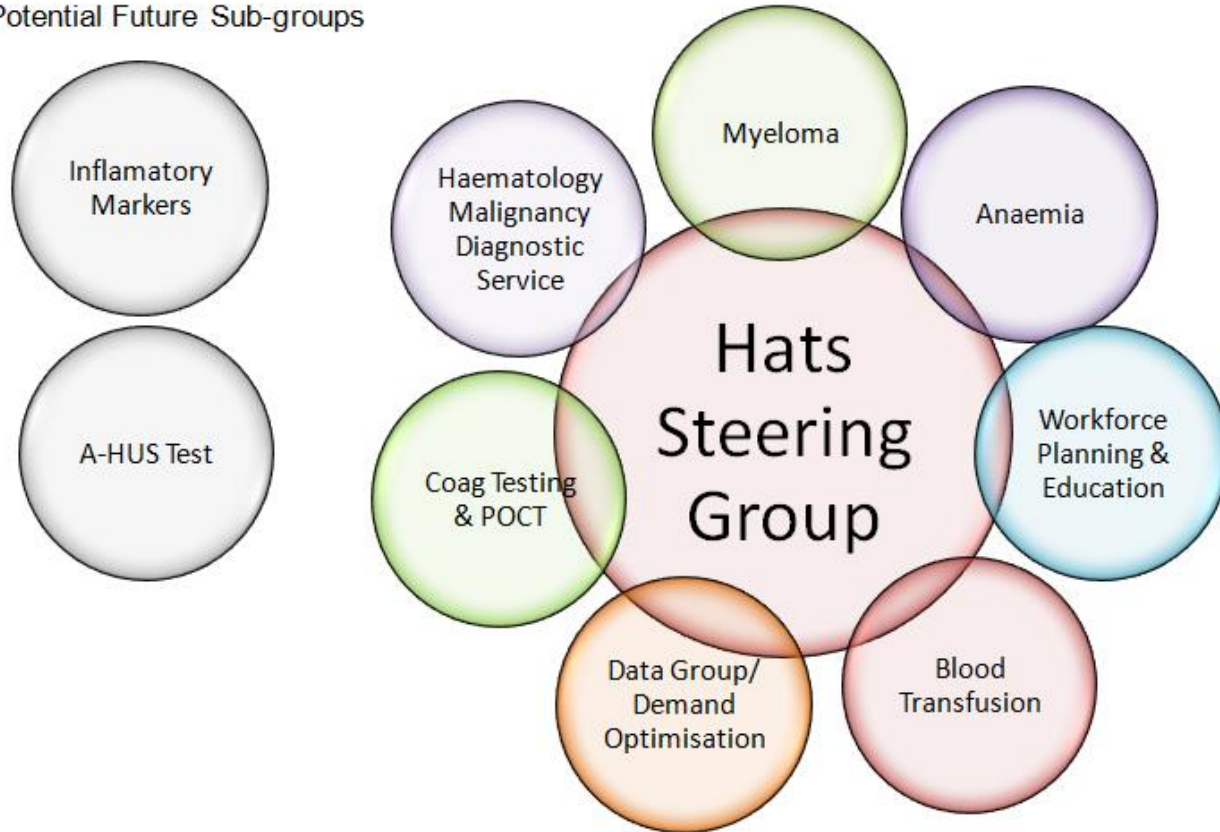
# Inaugural Meeting

- The network had a inaugural meeting at Stirling on the 29<sup>th</sup> May 2019 to start the work of developing the network's annual and five year work plans.
- Representatives were also canvassed for the various sub groups



# HaTs Sub Groups Graphic

Potential Future Sub-groups



# Initial Key HaTS Objectives

- Finalise the B12/Folate national testing guidance developed and publish on the website. This supports the demand optimisation work being undertaken at a national level. When complete it will improve the investigation of B12/Folate deficiency across Scotland which is an outcome that arose from patient feedback.
- The Data subgroup will conduct a review of Haematology and Transfusion repertoire across Scotland and where possible develop standardised definitions, reference ranges, test profiles and units.



# Initial Key HaTS Objectives

- Identify and develop demand optimisation projects for future work that will lead to a reduction in unnecessary testing and promote optimal test requesting.
- Working in conjunction with other diagnostic networks and relevant stakeholders develop a myeloma strategy for Scotland. Review the provision of serum free light chains vs Bence Jones Protein Electrophoresis.



# Initial Key HaTS Objectives

- Improve liason between laboratory and clinical blood transfusion communities.
- Develop and implement a national policy on the management of red cell antibodies in pregnancy.
- Support the workforce and education group to conduct a review of current workforce provision as well as future requirements. Scoping the potential to of digital technologies such as establishing a national morphology training programme or developing transformational roles for scientists to deliver the identified outcomes



**Visit our website:  
[www.hats.scot.nhs.uk](http://www.hats.scot.nhs.uk)**

**Contact us at:  
[nss.hats@nhs.net](mailto:nss.hats@nhs.net)**

**Or tweet us [@NMDNScot](https://twitter.com/NMDNScot)**

**Haematology  
and  
Transfusion  
Scotland  
Managed  
Diagnostic  
Network**





# Scottish Pathology Network

National Managed Diagnostic Network



# SPAN Workplan

- BMS Dissection – National Training School
- Digital Pathology
- Lung cancer pathways

# BMS Dissection

- Baseline: 21% BMS dissection hours
- Training schools 2018 and 2019
- Impact of 2018 school:
  - 11 participants
  - Excellent feedback
  - 60% have progressed from basic dissection
  - Anecdotal feedback of reduction in medical dissection hours (awaiting confirmatory data)

# BMS Dissection

- Additional benefits/impact:
  - Increased job satisfaction
  - Cost effective use of staff resource
  - Increased career opportunities for BMS staff (eg Advanced Practitioner role)
  - Improved workflow
  - Improved quality/compliance

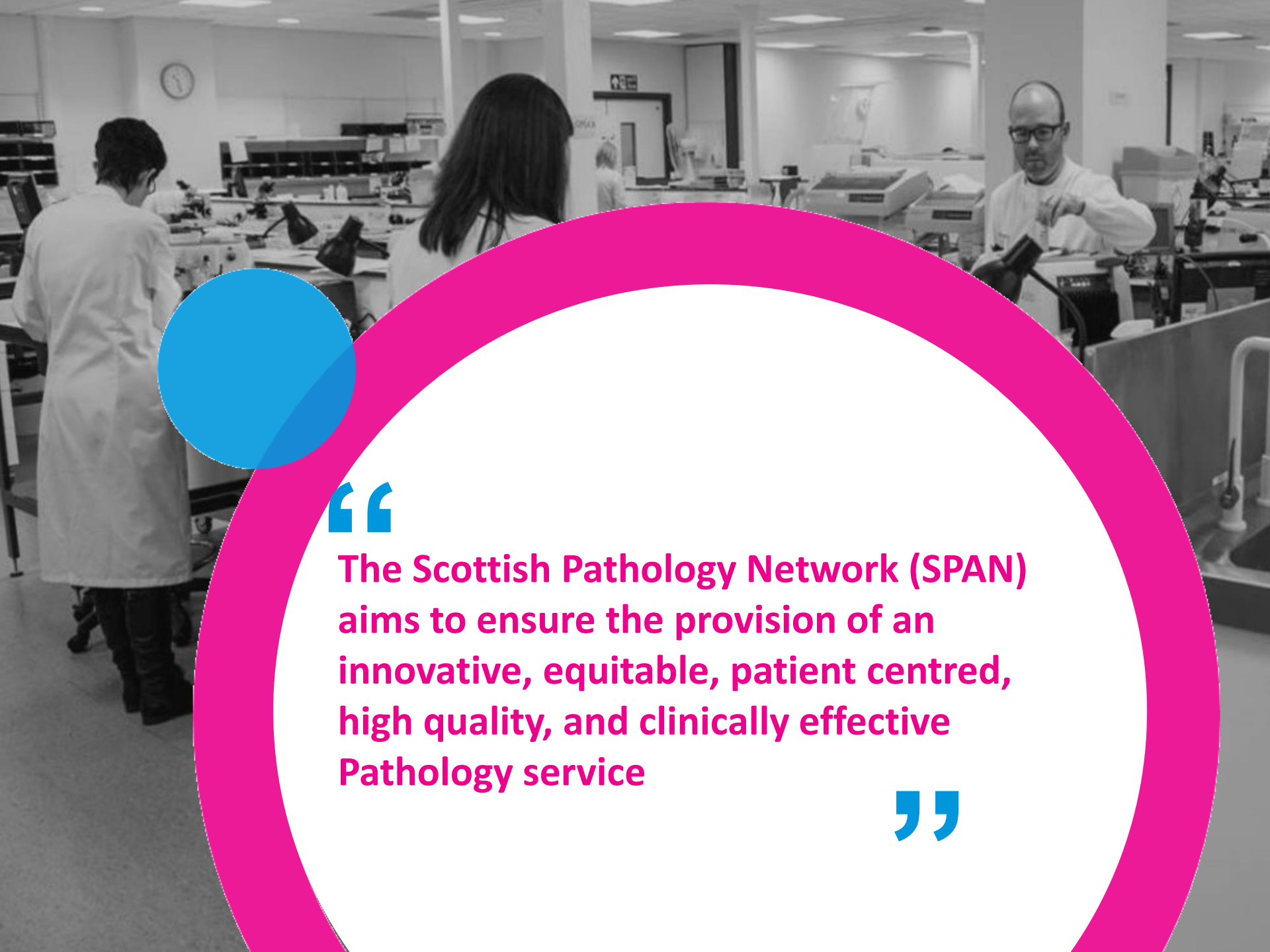
# **Digital Pathology**

## **Predicted Outcomes**

- Enabling increased specialist reporting,
- Automated reporting
- Expert opinion
- Supporting on-call services
- Improving the patient pathway outcomes
- Reduce turnaround times

# Improving Patient Pathways Lung Cancer

- Introduction of emerging diagnostic tests
- Improves patient management – tailored treatment options
- Increase life expectancy/quality
- Reduced costs eg chemotherapy
- Examples are PDL-1 and ROS-1



**The Scottish Pathology Network (SPAN) aims to ensure the provision of an innovative, equitable, patient centred, high quality, and clinically effective Pathology service**





Visit our website:  
[www.pathology.scot.nhs.uk](http://www.pathology.scot.nhs.uk)

Contact us at:  
[nss.SPAN@nhs.net](mailto:nss.SPAN@nhs.net)

Or tweet us [@NMDNScot](https://twitter.com/NMDNScot)

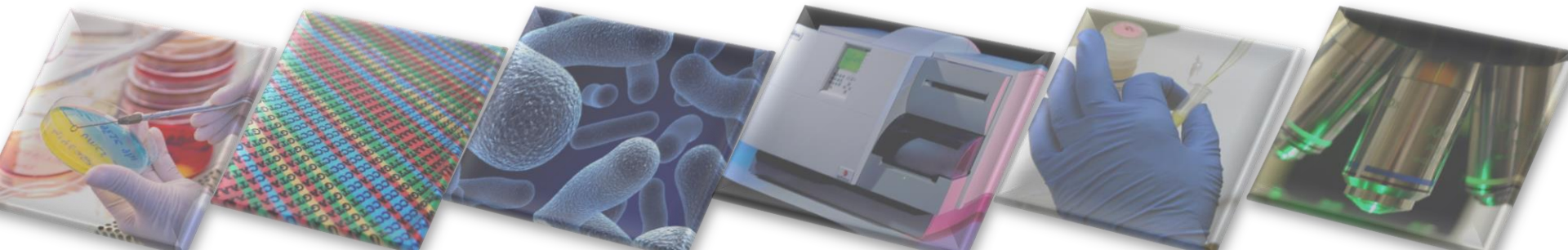


Scottish  
Pathology  
Network





# Scottish Microbiology and Virology Network (SMVN)



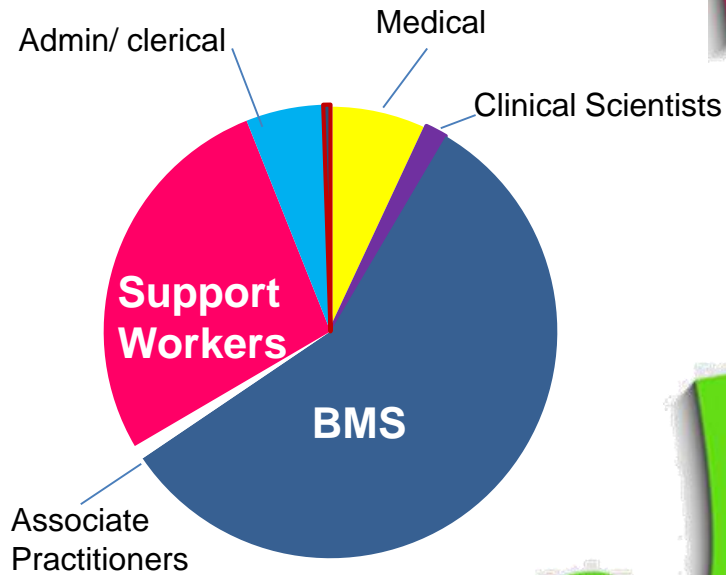


**“The Scottish Microbiology & Virology Network (SMVN) aims to operate across local and regional NHS Board boundaries in order to facilitate equity of access to high quality, clinically effective and standardised care, within the realms of Clinical Microbiology and Virology, across NHS Scotland.”**

**Bacteriology**

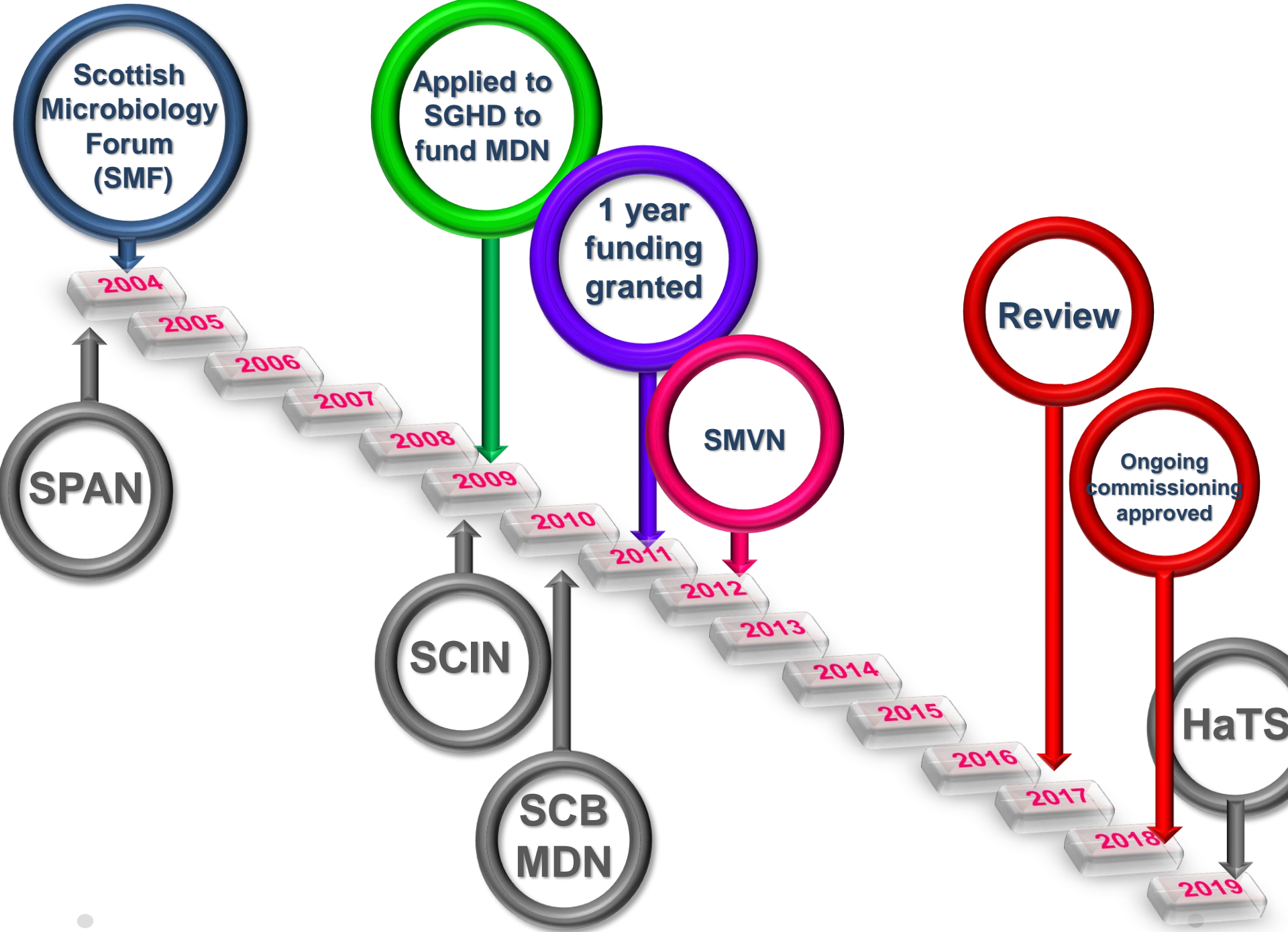
**Virology**

**c.1,000 staff across  
NHS Scotland**



**Parasitology**

**Reference  
Laboratories**



# SMVN

**Clinical Lead:** Dr M. Connor (1 PA (session) / week)  
**Manager:** Dr F. MacKenzie (0.5 FTE)

## Steering Group (n= 41)

**Health Boards:** Lead Consultants, Lead BMS  
Microbiology and Virology Specialty Advisors  
Infection Control Doctor  
Health Protection Scotland / SHPN  
SGHSC HAI policy unit  
Scottish Reference Laboratories  
Clinical Scientist Representative  
SMVN AST Group / SAPG representative

Scottish Clinical  
Virology  
Consultants Group

Operational  
Group (SMOG)

PCR User's Group

Cystic Fibrosis  
Microbiology Group

Scottish Diagnostic  
Virology Group

AST AMR Group

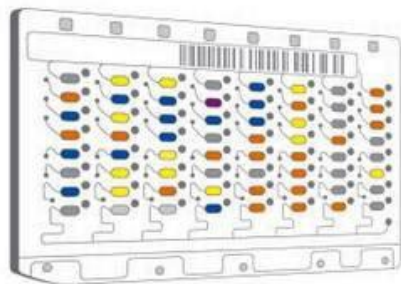
Mycobacterial  
Services Group

Enteric PCR  
Group

# EARLY / CONTINUING SUCCESSES

## Antimicrobial Susceptibility Testing (AST)

- Automated testing: single supplier of equipment and consumables.
  - National contracts for equipment (2007) and consumables (current).
  - Scottish bespoke antibiotic testing panels.
  - Equipment software customised for Scotland (EUCAST interpretive criteria).
  - Standardisation of disc diffusion testing
  - New threat: carbapenemase producing organisms (CPO)
- Standardised testing, reporting, test & report codes
- Close collaboration with HPS (ECOSS)



# LATEST SUCCESS



## Molecular Diagnostics for Rapid Detection of TB

### CURRENT

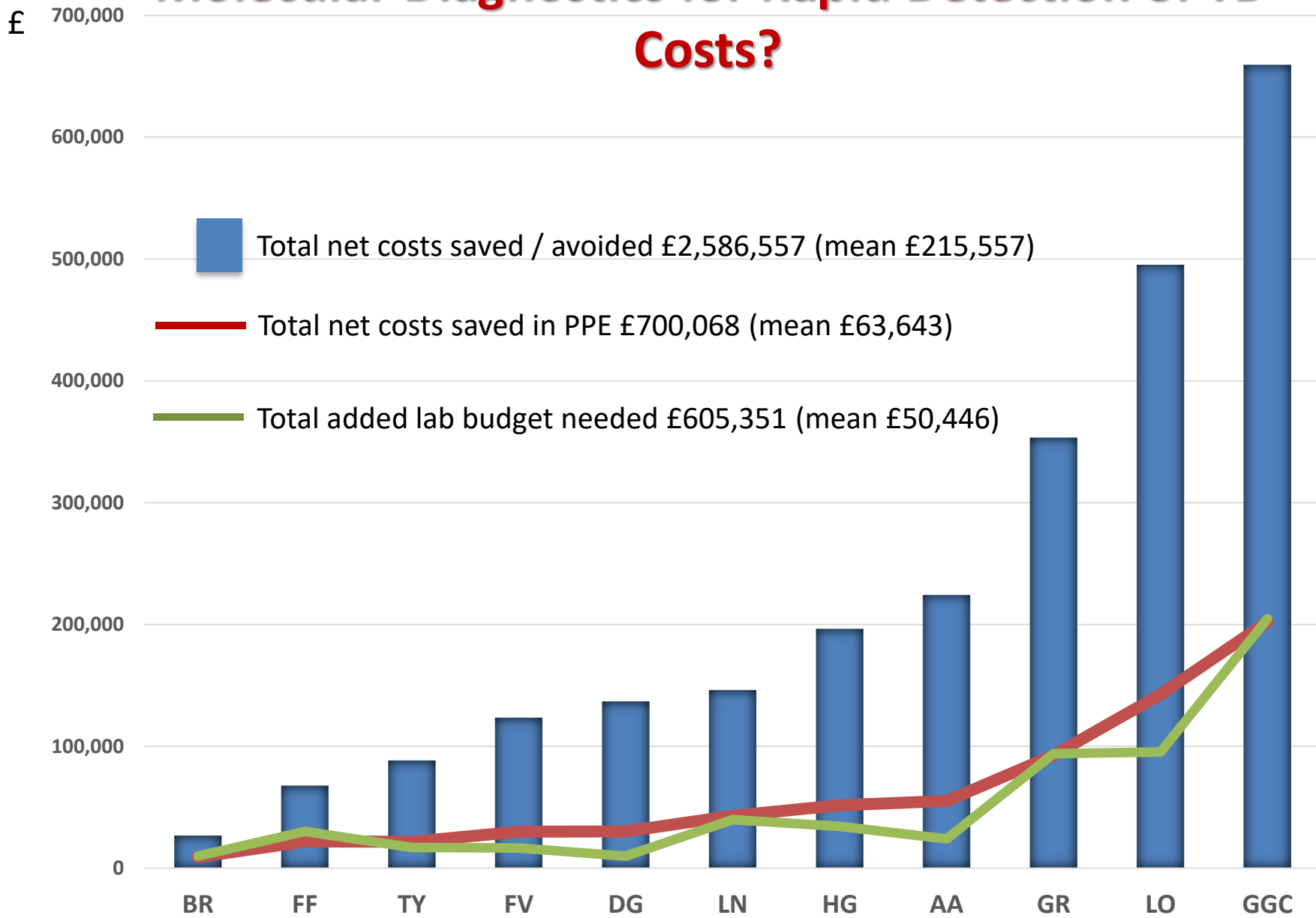
- Gold standard test = culture  
Up to 12 weeks for a result
- Screen = smear  
Sensitivity 46-78%, specificity 50%  
Inexpensive test  
Highly skilled staff needed

### FUTURE

- Gold standard test = culture
- Screen = molecular test  
Triaged samples, high probability of TB  
Excellent sensitivity & specificity  
Relatively expensive test  
No special skills needed
- Screen = smear  
All other samples, low probability of TB



# Molecular Diagnostics for Rapid Detection of TB Costs?





# COMMUNICATION / EDUCATION

## NEWSLETTER



**SMVN** 

### Spring 2018 Newsletter

**SMVN Membership**

Scottish Microbiology & Virology Network (SMVN) members include all staff, of all grades, working in a Medical Microbiology or Virology department in NHS Scotland. Membership is automatic and there is no application process.

Most communication takes place with the SMVN Steering Group which includes the Microbiology / Virology Clinical Lead and Lab Manager from each Health Board area. These representatives are responsible for representing the views of the Health Board and for reporting information back to their Health Board.

Information is posted on the SMVN website: [www.smnv.scot.nhs.uk](http://www.smnv.scot.nhs.uk). Of particular importance, there is a members' area on the website which includes up-to-date information on SMVN guidance, alert notices, minutes of SMVN sub-group meetings, information from key stakeholders, feedback from SMVN representatives on external groups and information on governance and national agendas. Anybody who works in a Medical Microbiology or Virology department in NHS Scotland may access the members' area with the password. Please ask your Laboratory Manager for the password or contact the SMVN Programme Support Officer [emily.ross3@nhs.net](mailto:emily.ross3@nhs.net).

Information is also E-mailed to a circulation list made up of Consultants and senior Clinical Scientist and BMS staff. There is an expectation that Lead Clinicians and Laboratory Managers cascade relevant information to their department. Anybody may request to be added to the circulation list by contacting the SMVN Manger.

Dr Fiona MacKenzie  
([f.mackenzie@abdn.ac.uk](mailto:f.mackenzie@abdn.ac.uk))  
[www.smnv.scot.nhs.uk](http://www.smnv.scot.nhs.uk)

**SMVN Support**

The SMVN has a Clinical Lead who is appointed for a three year term of office.

Dr Gillian Orange came to the end of her tenure as SMVN Clinical Lead at the end of April 2018 at which point she also retired from the NHS. Sincere thanks are extended to Gillian for leading the SMVN so well over the past three years. We wish her all the very best in the next chapter of her life.


The SMVN welcomes Dr Martin Connor, NHS Dumfries and Galloway, (below) as its new Clinical Lead. Martin took up this role on 1 April 2018 and we look forward to working with him.



The SMVN Manger is Dr Fiona MacKenzie, who works for the network on a 0.5 FTE basis.

The Clinical Lead and Manger are supported by the National Network Management Service, in particular by Emily Ross (Programme Support Officer), Liz Blackman (Senior Programme Manager) and Claire Lawrie (Information Management Service Programme Manager).


## POSTERS



### Standardisation of Cystic Fibrosis Microbiology testing in Scotland

Dr Fiona M. MacKenzie, Scottish Microbiology & Virology Network (SMVN) Manger  
*on behalf of the SMVN CF subgroup*

Infection of the airways remains the primary cause of morbidity and mortality in persons with Cystic Fibrosis. The aim was to standardise CF Microbiology across Scotland to support optimum delivery of care.



**Background**

Scottish CF Microbiology is largely carried out in labs associated with the 5 Specialist Cystic Fibrosis (CF) Centres in Glasgow, Edinburgh, Aberdeen, Dundee & Inverness. CF Microbiology is complex and challenging and service delivery has varied across Scotland.

**Methods**

The SMVN consulted with the Paediatric CF Network and the adult CF Physicians to support standardised delivery of care.

The SMVN reviewed the available guidelines and literature.

**Culture media**

Respiratory samples should be cultured on selective agar according to the Standards for Microbiology Investigations (SMI) and the CF Trust laboratory standards.<sup>1</sup>

**Bacterial identification**

Microbial pathogens should be identified to genus or species level from non-selective agar according to the SMI.<sup>1</sup>

Witek 2, MALDI TCF mass spectrometry technology and biochemical tests should be used as appropriate.

**Antimicrobial Susceptibility Testing (AST)**

- AST (qualitative or quantitative) should be carried out by the following in order of preference: Witek 2, EUCAST method, CLSI method or commercial MIC strip.
- Data should be interpreted using EUCAST (or CLSI) criteria.
- Non-fermenting Gram-negative organisms from adults may be sent to CFSS in NHS Grampian when there are local problems identifying suitable treatment regimens.

<sup>1</sup>The European Committee on Antimicrobial Susceptibility Testing: [www.eucast.org](http://www.eucast.org)  
<sup>2</sup>Global Laboratory Standards Institute: [www.glsi.org](http://www.glsi.org)

**Testing Frequency / Reference Laboratory**


- Routine qualitative AST should be carried out on all CF pathogens.
- Quantitative AST should be carried out on request by clinician, after 7 days of non-response to treatment, routinely every 8 months and when a pathogen is flagged as resistant to > 2 classes of antibiotic.
- If clinically indicated, samples should be tested for TB at Ref Lab.
- All first isolates, annual review isolates, causes of reinfection and subsequent isolates with a different antibioticogram should be sent to a Ref Lab for typing.

<sup>1</sup> BS01 BBT, Investigation of Bronchoalveolar Lavage, Sputum and Associated Specimens in Adult Cystic Fibrosis, 10<sup>th</sup> Edition. Published by the Cystic Fibrosis Trust in September 2010.  
<sup>2</sup> Laboratory standards for processing microbiological samples from people with Cystic Fibrosis, 1<sup>st</sup> Edition. Published by the Cystic Fibrosis Trust in September 2010.

**Conclusions**

The SMVN CF Microbiology guidance applies all Scottish labs which process samples from CF patients.

Infection of the airway remains the primary cause of morbidity and mortality in CF patients and the SMVN guidance aims to deliver an optimum microbiology service to this group of patients regardless of the geographical location of the patient which is likely to vary throughout their life.



Scottish Microbiology and Virology Network  
[www.smnv.scot.nhs.uk](http://www.smnv.scot.nhs.uk)

## WEBSITE



**Scottish Microbiology and Virology Network** 

Welcome to the SMVN website

This site has been set up for the SMVN community and its stakeholders in Scotland.

**Home** Latest News Contact Us Groups Sub Groups & Projects Annual Scientific Meetings Useful Links Members area

The Scottish Microbiology and Virology Network (SMVN) will lead and support the provision of high quality, safe, patient centred and clinically effective Medical Microbiology and Virology services at a national level, in line with the Healthcare Quality Strategy for NHS Scotland (2016).

The SMVN has replaced the Scottish Microbiology Forum (SMF) and comprises senior staff (Consultants / Head Biomedical Scientists / Senior Clinical Scientists) working in NHS Medical Microbiology, Virology, Mycology and Parasitology departments.

The SMVN will operate Scotland-wide and transcend geographical, organisational and professional boundaries with all NHS Boards being represented on the Steering Group.

The SMVN will provide interactive peer support for microbiologists and virologists employed by NHS Scotland, and facilitate the timely exchange of information on clinical and scientific issues required for the provision of safe effective clinical care and actions to prevent infection and protect Public Health.

## EDUCATIONAL MEETINGS



**Scottish Microbiology and Virology Network (SMVN)**

**Educational Event, Spring 2019**  
**Thursday 23 May 2019**



[www.smnv.scot.nhs.uk](http://www.smnv.scot.nhs.uk)





[www.smvn.scot.nhs.uk](http://www.smvn.scot.nhs.uk)



[f.m.mackenzie@abdn.ac.uk](mailto:f.m.mackenzie@abdn.ac.uk)



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Scottish  
Microbiology  
& Virology  
Network

