

# **Scottish Microbiology & Virology Network (SMVN)**

## **Annual Report 2023 - 2024**

Lead Clinician:

Scientific Manager:

Senior Programme Manager:

Programme Support Officer:

**Dr Martin Connor**

**Dr Fiona MacKenzie**

**Camilla Young**

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## **A. Current position**

Over the past year, significant workforce challenges have continued. The relentless demands put upon Clinical Microbiology / Virology / SMVN colleagues throughout the pandemic have left staff throughout the network burnt-out resulting in absence and (early) retirement, particularly amongst Consultant staff and it is proving difficult to fill vacancies. In a number of Health Boards, staffing levels have been documented on relevant risk registers and noted on UKAS accreditation inspections.

Not only has this created challenges within Health Boards but also within the SMVN. As members prioritise Health Board commitments, there is reduced capacity to support the SMVN business plan and increased reliance is being placed upon the SMVN Scientific Manager / Clinical Lead. The Clinical Lead's tenure ended on 31st March 2024 and there is a risk to the delivery of the network workplan if a replacement is not appointed.

## **B. SARS CoV-2 / COVID-19 Testing**

Laboratories of the SMVN continue to provide a SARS CoV-2 testing service, co-ordinated by the network via monthly SMVN Scientific Group meetings (chaired by Dr Fiona MacKenzie). Meetings ensure close contact between diagnostic laboratories and the Specialist Virology Centres, Public Health Scotland (PHS), NSS National Procurement (NP), Scottish Government, UK Government and companies providing equipment and tests and also serve as a conduit for sharing information and communications from other national groups.

Rationale for Health Board testing continues to be: Local provision of PCR diagnostic testing services is essential for patient treatment and management; in particular to avoid unnecessary cross-transmission of the virus and unnecessary deaths. Rapid testing has, in particular, been used on unscheduled admissions to inform patient placement.

Health Board testing continues to be responsive to changes in Scottish Government policy direction.

The net result has been delivery of a patient centred, safe, effective, equitable and sustainable service for SARS CoV-2 (and other pathogen) testing.

During the reporting period, the SMVN (in collaboration with National Procurement) secured a £28 million budget for SARS CoV-2 tests and equipment service & maintenance, funded by Scottish Government. In March 2024, the SMVN secured a further budget of £11 million from Scottish Government for (reduced) testing demands in 2024 – 25.

## **C. SARS CoV-2 Testing Informatics**

Throughout the reporting period, weekly SARS CoV-2 test data provided by Health Board colleagues were analysed and reported by Dr Fiona MacKenzie (SMVN Scientific Manager) to Scottish Government colleagues to monitor demand and expenditure against the £28 million budget. This task will continue throughout 2024 / 25 to monitor test demand against the new, £11 million budget.

#### **D. SMVN Scientific Group**

The SMVN Scientific Group meets monthly and is chaired by Dr Fiona Mackenzie, SMVN Scientific Manager.

Due to Health Board workforce issues, the SMVN Operational Group (SMOG) still does not have a chairperson and therefore does not meet routinely. The SMVN Scientific Group has taken on the role of SMOG for the time being. Membership of the Scientific Group has been extended beyond the SARS CoV-2 Technical Group and now includes SMOG and Steering Group members, stakeholders and those with an interest in specific agenda items.

A core deliverable of the group is continued oversight and co-ordination of SARS CoV-2 / respiratory testing and production of the weekly test data reports for Scottish Government. Issues addressed include testing policy changes, test assay performance monitoring, variant monitoring, winter testing, test assay funding & procurement, equipment service & maintenance, consumable (swabs and swab collection devices) availability, rapid diagnostic testing / POCT, equipment repurposing, waste disposal,

Group meetings provide a forum for sharing of information with National Procurement, Public Health Scotland and other stakeholders, as appropriate.

The following are recent examples of activities / topics that the Scientific Group has undertaken, with relevant stakeholder attendance, as appropriate:

- Peer support and information sharing
- STI Home Testing
- Medico-legal work: chain of evidence and release of specimens
- Measles IgG testing in immunocompromised patients
- Hep B lookback transition to BAU
- *C. difficile* diagnostic testing best practice guidelines
- Benchmarking
- ECOSS

#### **E. SMVN Infection Prevention and Controls Doctors (IPCD) Group**

This group provides a very active forum for IPCDs to contribute to a large number of national guidelines / policies, collaborating with e.g., Antimicrobial Resistance & Healthcare Associated Infection (ARHAI) Scotland (and its numerous sub-groups), Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection (APRHAI), NHS Scotland Assure, PHS Public Health Microbiology, Chief Nursing Officer (CNO), ICM network, ICN network etc. They also provide an essential role in peer support across NHS Boards.

## **F. SMVN Mycobacterial (TB) Testing Group**

The SMVN business case, leading to the national procurement of a “Once for Scotland” solution for Molecular Diagnostics for the Rapid Identification of TB was successfully executed, supporting the strategic requirements identified by the Scottish Health Protection Network TB Multi-Disciplinary Network.

This group met only once during the reporting period and fell behind in some of its deliverables. This was primarily due to a lack of capacity on the part of the Scientific Manager to progress the work of the group as well as a lack of capacity within Health Boards to complete the verification / go-live process.

Work is ongoing to establish why the number of molecular tests being purchased is below the commitment level in the national contract. This was originally attributed to a general decline in demand for mycobacterial testing since the start of the pandemic however, a significant rise (43%) in the prevalence of TB in Scotland was observed in 2023, likely resulting in increased demand for testing.

## **G. Antimicrobial Resistance (AMR) Diagnostics Group**

This is the longest standing SMVN sub-group and is chaired and actively led by Dr Mairi Macleod.

During the reporting period, the group held a face-to-face Scottish Vitek 2 technical user group meeting jointly with bioMérieux. The sub-group group chair and SMVN Scientific Manager maintain contact with bioMérieux throughout the year, monitoring Vitek card usage and technical issues. With the national price agreement for the consumable ending in March 2024, they have pursued pricing extensions with the company, in partnership with National Procurement.

As bioMérieux have provided the Vitek AST solution in NHS Scotland laboratories since 2008, it was decided to review potential new solutions on the market. In conjunction with National Procurement, a “Prior Information Notice” was issued. Six companies responded and the information supplied is actively being collated and reviewed by the SMVN and, specifically by this sub-group.

A number of group members contributed to standardising antibiotic codes in the new national LIMS.

The Group Chair has maintained engagement with bioMérieux in order for the NHS Scotland Vitek 2 equipment to be updated to include the most recent annual EUCAST interpretive criteria and dosing guidelines. Antibiotics tested on the Scottish Vitek cards were reviewed and updated. Via the chair, the group has also maintained close contact with the British Society for Antimicrobial Chemotherapy (BSAC) AST Steering Group, the Scottish Antimicrobial Prescribing Group (SAPG), ARHAI Scotland and the Scottish One Health Antimicrobial Use and Antimicrobial Resistance (SONAAR) programme.

## H. Molecular Testing

The landscape across NHS Scotland changed significantly due to the acquisition of equipment for SARS CoV-2 testing which has become available for a range of additional molecular tests. This subgroup was formed to provide strategic direction and guidance across Scotland, with representatives identified across all NHS Health Boards.

This group met three times during the reporting period. Local workforce issues resulted in the sub-group chair, Dr John Shone, being unavailable to lead on all of the groups' deliverables. Additionally, due to a lack of capacity on the part of the Scientific Manager to progress the work of the group some of its deliverables are behind schedule. A co-chair for the group was appointed: Dr Linsey Batchelor.

A business case to introduce faecal PCR into NHS Scotland laboratories was initiated and is in development.

A case to repatriate 16S / 18S rDNA PCR testing to Scotland is also in development.

A review of *Clostridioides difficile* diagnostic testing in NHS Scotland was undertaken by the SMVN Scientific Group, including addition of PCR testing. This resulted in agreement of SMVN best practice recommendations on the subject.

## I. SMVN Mycology Group

During the COVID-19 pandemic, higher than normal cases of fungal infections in ICU patients were observed. This group was established to assess the burden of fungal infections in Scotland and to standardise diagnostics and therapy of fungal infections.

Local workforce issues resulted in the sub-group chair, Dr Abhijit Bal, being unavailable to lead on all of the groups' deliverables. A co-chair for the group was appointed: Dr Deborah Lockhart.

The group's data set on laboratory practice is being written up and best practice mycology testing guidelines are in development. The group is also focusing specifically on best practice guidelines for testing for *Candida auris*.

## J. SMVN Sexual Health Laboratory Group

This SMVN Subgroup was established to liaise closely with and include sexual health leads and PHS, to address issues such as implantation of British Association for Sexual Health and HIV (BASHH) guidelines, roll out of new platforms for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* (CT / NG) testing as well as HIV testing. During the reporting period this group became a "special interest group" meaning it is self-supporting and does not require NNMS resource.

**K. STI Home Testing**

There is a need to increase patient access to testing for sexually transmitted infections (STIs) in the context of a decline in demand for testing during the COVID-19 pandemic and a subsequent increase in the prevalence of *Neisseria gonorrhoeae* (NG).

The SMVN engaged with the STI Home Testing Programme Board to identify optimum solutions for laboratory testing and made as much progress as was possible before the Programme Board was terminated in May 2023, before delivery of the service. During the reporting period, the SMVN produced a position statement describing the status of relevant work carried out to date, the preferred model for laboratory testing and suggested way forward.

At the start of 2024, responsibility for delivering STI Home Testing transferred to PHS and a new Programme Portfolio Manager was appointed. This refresh of the programme has been welcomed and close contact with the new Portfolio Manager has resulted in good, rapid progress being made on the end-to-end process, including laboratory testing.

**L. SMVN Cystic fibrosis (CF) Microbiology Group**

CF Microbiology is a challenging sub-specialty and there is a general lack of national / international guidance. The SMVN CF Microbiology guidelines were produced in 2015. The reconvened SMVN CF Microbiology Group, chaired by Dr Will Olver, successfully updated the guidance during the reporting period.

**M. Education Event**

The second post-pandemic face-to-face SMVN Education event took place in Edinburgh on 8 June 2023 with 106 registered attendees, including eight companies which exhibited on a no-fee basis.

A full and varied programme was delivered. A particularly relevant part of the programme, which resulted in lively discussion, was devoted to workforce / staffing issue facing Microbiology / Virology laboratories, with a focus on the current national medical staffing crisis, BMS workforce challenges and Clinical Scientist training.

Attendee feedback demonstrated that many people planned to cascade learning within their departments and a large number of suggestions were offered for future meetings.

Attendees were from the following Boards

NHS Ayrshire & Arran	5	NHS GG&C	24
NHS Borders	1	NHS Lanarkshire	5
NHS Dumfries & Galloway	4	NHS Lothian	21
NHS Fife	5	NHS Orkney	1
NHS Forth Valley	8	NHS Shetland	2
NHS Golden Jubilee	2	NHS Tayside	5
NHS Grampian	8	PHS	2
		Other	13

## **N. Benchmarking / Workforce Planning**

The SMVN is committed to the development of a flexible and sustainable workforce and has been part of the laboratories-wide workforce planning initiative since inception.

The SMVN collected workforce / benchmarking data in 2023 but, for a number of reasons, the dataset was not analysed / reported. This work was previously led by the SMOG chair (now retired). Due to Health Board workforce issues, nobody within the SMVN has been identified to lead on this work.

## **O. Continuous Improvement**

The SMVN is actively seeking a member, or a small group, who can lead on benchmarking across microbiology and virology services and work in collaboration with the Information Management Service.

## **P. Stakeholder Survey**

In March 2023, a stakeholder survey was conducted. The NSD Programme Team sent it via E-mail to the Steering Group and active subgroups. 22 responses were received.

The responses received mostly came from members of the subgroups and active participants, with a lesser number of respondents in the steering group. Most responses were positive, highlighting the collaboration and information sharing advantages the network brings to the profession. The network Scientific Manager was also called out as a strong positive influence on the network. The negative feedback to the network was mainly focused on the communication efforts of the network, highlighting some work improving the governance of the network, ensuring the subgroups are working properly and that there is a clear decision-making route, a focus on make improvements in digital infrastructure was also highlighted. The main threats to network activity identified by the stakeholders are the current financial pressures on the NHS in Scotland, subsequent funding for any change project(s) and the ongoing staffing pressures allowing stakeholders the time/space to engage with the network appropriately.

Appendix 1 presents some selected output from the survey.



## Q. Looking forward

Over the past four years, the SMVN has, by necessity, fulfilled a very operational function; specifically in its leadership during the COVID-19 pandemic.

Demands made upon the SMVN continue to be significant and, at times, over and above the planned workplan due to the requirement for responsiveness. Clinical Microbiology / Virology, along with Infectious Diseases, are the only two specialties in human medicine subject to external living forces (pathogenic bacteria, viruses, fungi, parasites). Outbreaks of pathogens of public health / IPC significance appear to be on the increase and impact upon the SMVN without warning. This need for such responsiveness is likely to increase, not decrease.

Creation of the Scottish Strategic Network for Diagnostics (SSND), assimilation of the existing 5 diagnostic networks (including the SMVN) with the SSND and integration into the National Planning and Delivery Board requires the SMVN to adopt a more strategic outlook, focusing on:

- Value-based diagnostics & test appropriateness
- Service sustainability & resilience
- Workforce innovation
- Digital & innovation, and
- Infrastructure, equipment & environmental sustainability.

The SMVN is committed to delivering a business plan geared towards service modernisation in the post-pandemic landscape. However, there is a risk to the delivery of the network workplan as (a) the current Lead Clinician's tenure ended on 31<sup>st</sup> March 2024 and the process to appoint a successor has been paused and (b) local Health Board workforce issues are resulting in members having limited capacity to support the SMVN.

The SMVN continues to be aware of potential challenges that may face diagnostic microbiology laboratories over the coming years. The ability to adapt and change diagnostic capability is a priority to a modern microbiology service in support of the aims of the NHS in Scotland. Future threats may include diverse issues and events such as an Influenza pandemic; workforce shortages across the diagnostic discipline range; climate change and global warming impacting on insect vectors and infectious disease diagnostic requirements; and uncertain geopolitical stability and associated movements of vulnerable population groups such as observed with Ukraine and the Middle-East. Potential threats and awareness of Bioterrorism agents must continue to be considered by SMVN laboratories. Links with Scot Gov and wider UK 4-Nations objectives, such as HCAI Strategy and UK AMR NAP will require co-ordinated SMVN microbiology diagnostic support.

## R. Finance

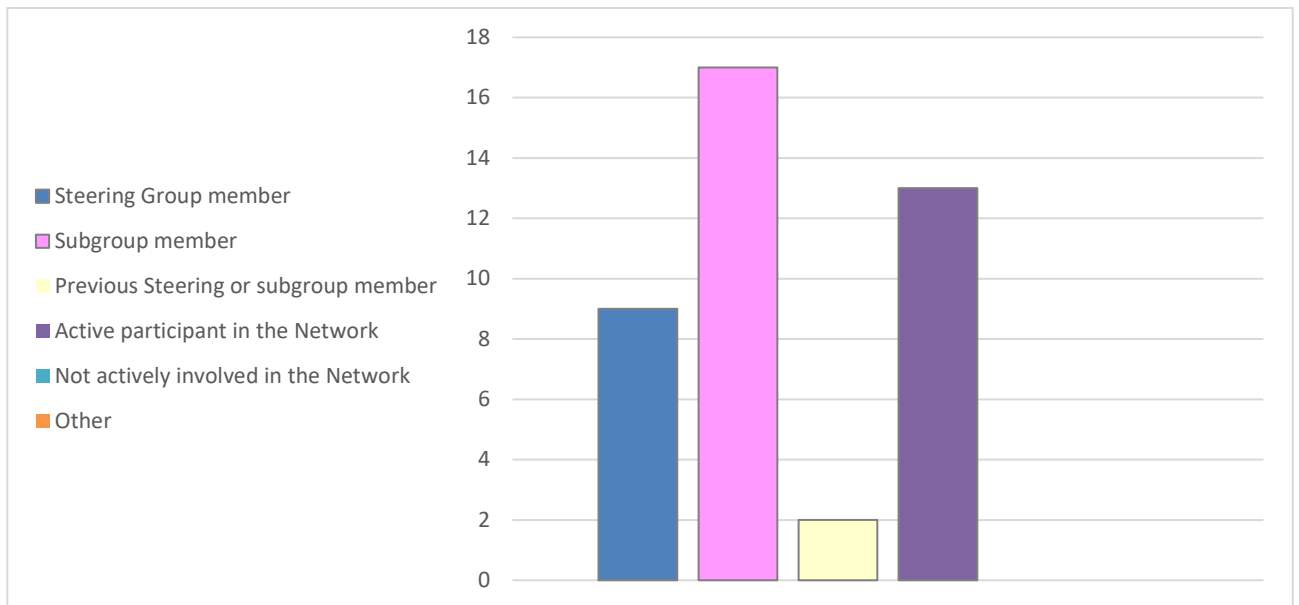
National Diagnostic networks have an allocated budget of £5,000. Total spend for SMVN during 2023/24 was £3,491. This spend was against the Education event held on 8 June 2023.



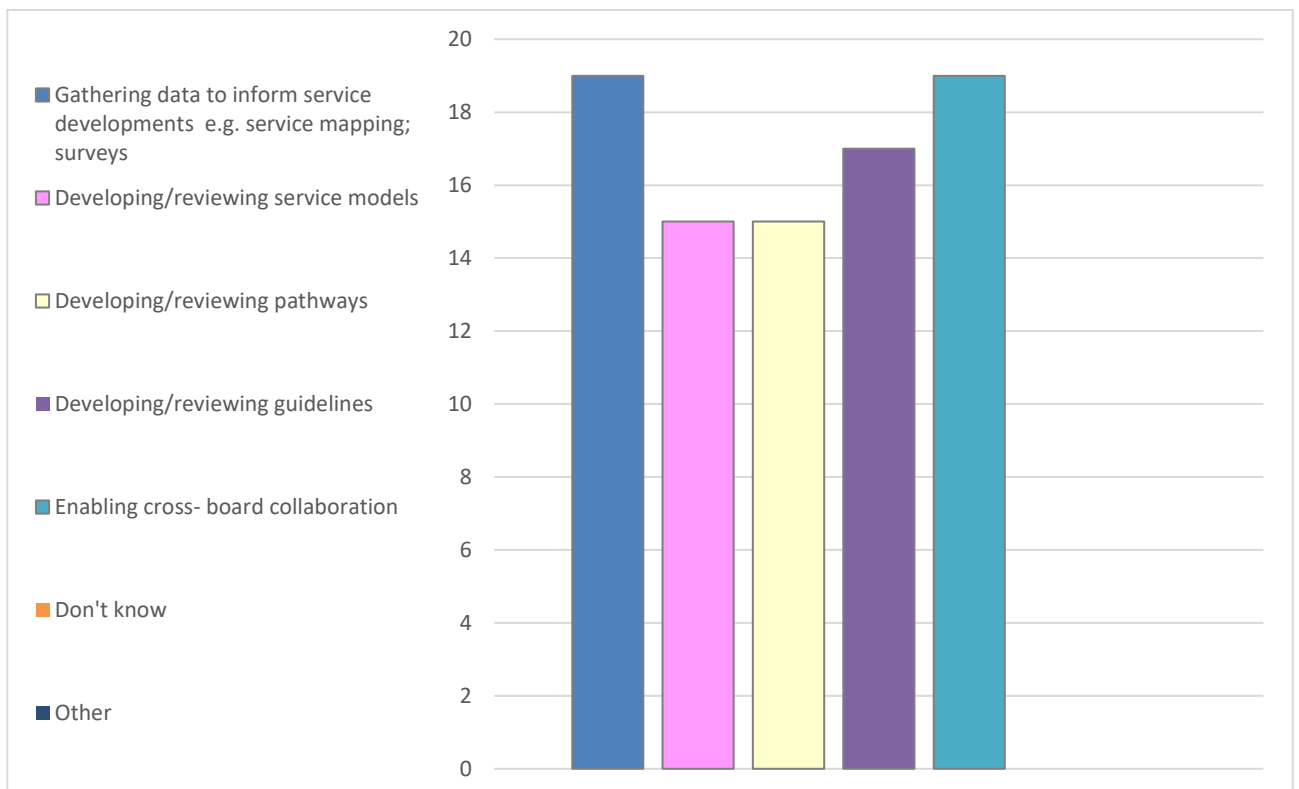
## Appendix 1

## Stakeholder Survey: selected output

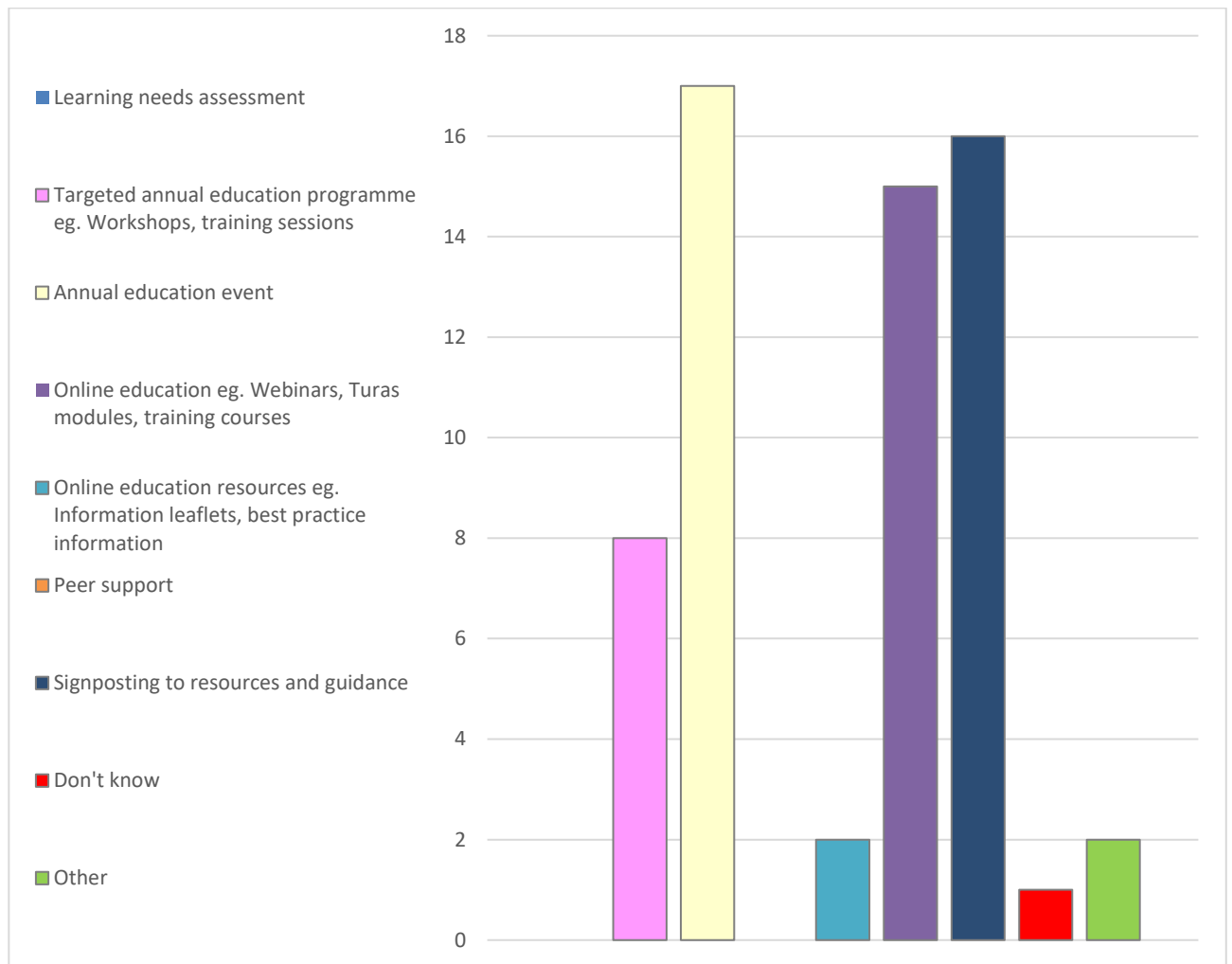
### 1a What is your role in the network? Select all that apply.



### 1b In what ways does the network add value by supporting service development? Select all that apply.



**1c In what ways does the network add value through delivery of education activities? Select all that apply.**



**1d In what ways does the network add value through audit and continuous quality improvement (CQI) activities? Select all that apply.**

