Chief Nursing Officer Directorate
Professor Alex McMahon, Chief Nursing Officer

Scottish Government
Riaghaltas na h-Alba
gov.scot

E: cno@gov.scot

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NWF; DPH; ASSURE; MD; COSLA;

15 December 2022

Dear Colleagues

PUBLICATION OF 'THE INFECTION PREVENTION WORKFORCE: STRATEGIC PLAN 2022 – 2024'

The Infection Prevention Workforce: Strategic Plan 2022 – 2024 is the product of extensive engagement with policy teams and key external stakeholders during what has been a challenging few years. The commitment of those involved in progressing this work is much appreciated and the final document goes some way to addressing the concerns of the Antimicrobial Stewardship (AMS), Health Protection (HP) (as regards to the IPC element) and Infection Prevention and Control (IPC) workforce before, during and after the COVID-19 pandemic.

The pandemic highlighted issues relating to capacity which are connected to the skills and expertise within the IPC workforce. In particular, additional pressure was placed on this workforce to support the Test and Protect programme as well as provide IPC advice and outbreak management in care homes. Support was also provided to immunisation programmes. All these issues are in the context of an existing lack of training, education and career pathways, as well as increasing antimicrobial resistance and emerging pathogens. Therefore, all of these factors have led to increased demands on limited resources.

The Plan aims are to create an appropriately skilled and sustainable workforce alongside a nationally integrated IPC eSurveillance system. The recommendations will be progressed over the short, medium and long term to achieve the ambition of recovering from COVID-19, whilst building on the learning from the pandemic to develop the future IPC services and workforce. The recommendations include:

- Identifying the current specialist workforce across health and care to assess and address demands (current and future) and potential service gaps, to allow for succession planning and sustainability.

- Reviewing and addressing current IPC capability within the Antimicrobial Stewardship (AMS) and Health Protection (HP) Workforce.
- Reviewing current educational and career pathways and identify key priorities in order to meet future and evolving needs to support service delivery.
- Progressing the work for a national surveillance eSystem for IPC within secondary care, with the support of local and national stakeholders.
- Identifying the requirements for new/emerging local/national specialist roles, which will support phased implementation of a sustainable workforce.
- Considering services are led by a clinical leader with a focus on AMR, HAI and IPC and with accountability to the executive team within a board, or partnership, to ensure safe and effective clinical service delivery.

As a small number of boards have already significantly invested in their local IPC e-Surveillance systems, these recommendations are not asking that you replace existing systems but ensure they enable enhanced levels of interoperability and information flow across boards and to governing bodies. There is no intention to recommend replacing existing systems.

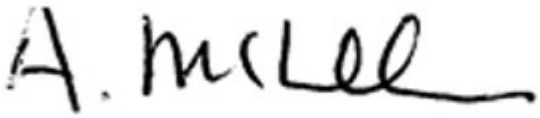
This strategic plan also recommends that consideration should be given in relation to the complexity and size of the health board and determining if there is a need for a dedicated IPC clinical lead. This will not be required in all boards and is distinct from the role of HAI Executive Lead which will remain as it is at present. However, the structure of the IPC workforce and leadership within a board should reflect any need for improvement.

To achieve outcomes which are underpinned by the ambition of pandemic recovery, this plan has been considered by other Health and Social Care policy teams and has also been aligned to the Health and Social Care National Workforce Strategy. The CNOD HCAI/AMR Policy Unit will support boards with the implementation of recommendations.

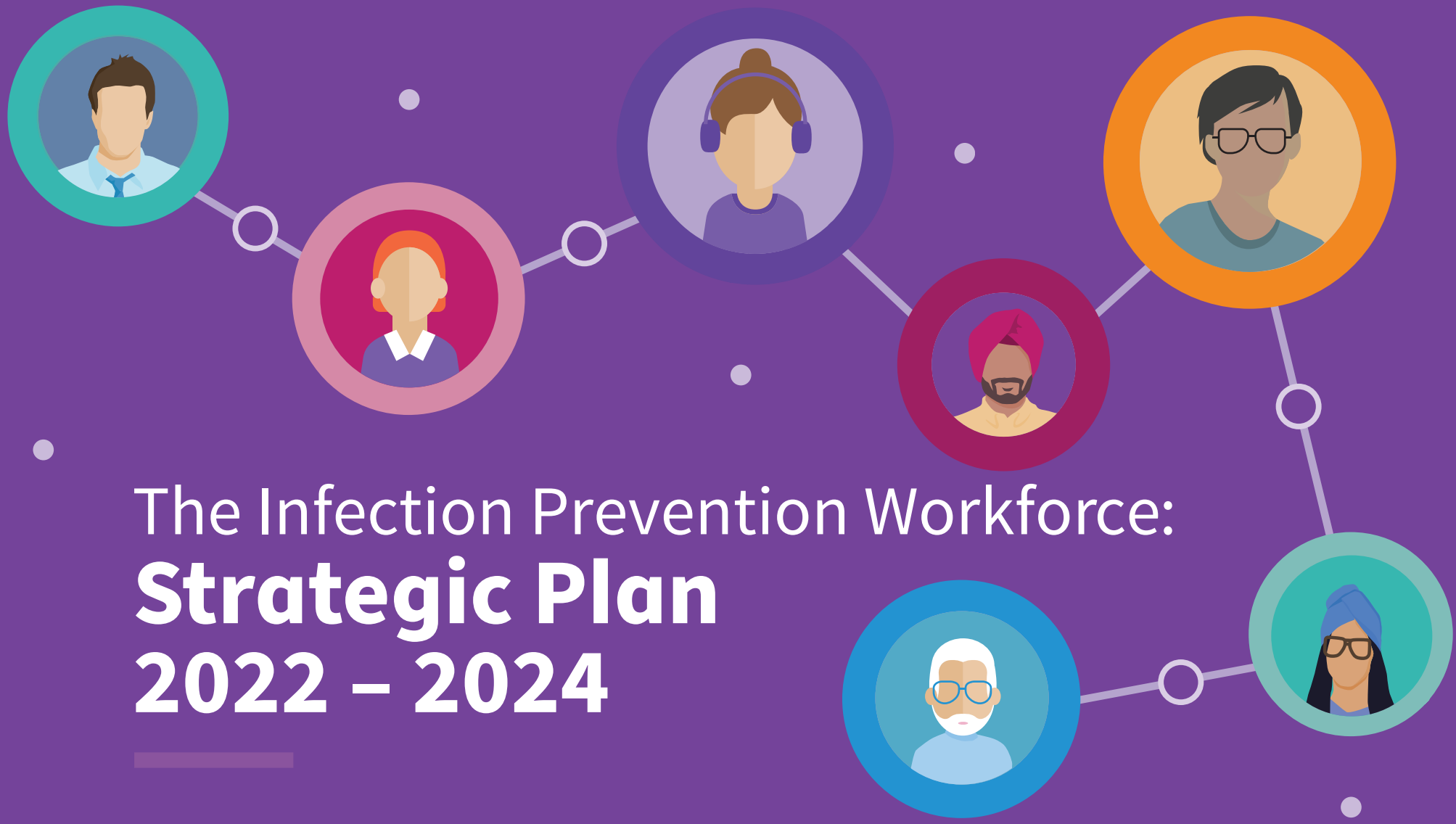
Finally, I wish to express my sincere thanks for your continued efforts across Health and Social Care before, during and since the pandemic, and look forward to continuing to work with you during this recovery phase and beyond.

If you have any questions about the content of this publication, please contact the CNOD HCAI/AMR mailbox HAI-AMR_Policy_Unit@gov.scot.

Yours sincerely



PROFESSOR ALEX MCMAHON
CHIEF NURSING OFFICER



The Infection Prevention Workforce: **Strategic Plan 2022 – 2024**

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Foreword

I am sincerely thankful for the ongoing commitment, professionalism and dedication shown by our NHS Antimicrobial Stewardship (AMS), Health Protection (HP) and Infection Prevention and Control (IPC) Teams, who have played a crucial role in maintaining services and keeping people safe during the COVID-19 pandemic.

Decisive and visible political commitment, sustainable resources, leadership and engagement are required at the highest level to sustain and improve implementation of functional AMS, HP and IPC programmes. As the First Minister has said, 'no hospital anywhere in the world can eradicate completely the risk of infection in very sick patients'. We can, however, put in place the best possible systems to minimise that risk, and ensure that we respond to infection incidents with appropriately detailed action plans that are effectively implemented in all health and care settings. The Scottish Government is committed to preventing and reducing healthcare associated infections (HAI) and containing and controlling antimicrobial resistance (AMR), to promote individual safety in our healthcare settings and protect effective antimicrobial drugs for the future.

All health and social care staff have an important role to play in preventing the spread of infection by recognising that IPC is everybody's responsibility.

Finally, I would like to reiterate my thanks on behalf of the Scottish Government and myself, for all the tireless work you and your colleagues have undertaken across Health and Social Care before, during and since the pandemic and I look forward to continuing to work with you during this recovery phase and beyond.

Chief Nursing Officer
Professor Alex McMahon

Introduction

A review of the AMS and IPC Workforce was commissioned in 2020 by Professor Fiona McQueen, the then Chief Nursing Officer. It fulfils a key commitment in the UK Government National Action Plan (NAP) for Antimicrobial Resistance (AMR) 2019-24: to assess current and future workforce needs to ensure capability and capacity for strong IPC and AMS across health and care settings; and develop future workforce targets based on the results of this assessment.

Since this review was commissioned, the entire health and social care workforce has experienced rapid changes due to the COVID-19 pandemic, demographic shifts in care from acute to community settings, and opportunities brought by new data and analytical services, new technology and new ways of working. These are explored in the wider National Workforce Strategy for Health and Social Care 2022 (published on 11 March 2022), alongside which this more focused plan was developed.

This Workforce Plan is about building capacity and capability of AMS, HP (with relevance to IPC) and IPC workforce in all health and care settings, to enable recovery and development, reflecting on the need for planning post pandemic across all health and care and as part of the wider system infection management needs. This wider system includes the work of AMS and HP teams and so these are referenced throughout. It also considers the enablers, and thus IT and training are also addressed.

This Strategic Plan sits under the National Workforce Strategy, which will support and enable critical work through our tripartite ambition of Recovery, Growth and Transformation of the Health and Social Care workforce.

This plan is also set against the context of the NHS Recovery Plan, which the Scottish Government published in August 2021. The Recovery Plan sets out key ambitions and actions to be developed and delivered over the next five years to address the backlog in care and meet healthcare needs for people across Scotland.

The COVID Recovery Strategy published in October, emphasises tackling inequalities through national and local leadership. Both these documents inform our Workforce Plan.

The challenges identified in these documents, and the projected demand for workforce over the next decade, make clear that we must not only recover from the pandemic and grow the workforce but also transform how we work. We need to develop capacity and capability in our AMS, HP (limited to the IPC element of health protection) and IPC workforce using a range of approaches which include, but are not confined to, role clarification and career pathways, exploring opportunities to build on the relationships that currently exist, creation of a learning system to support this specialist workforce and ensuring there is capacity, which can be flexed to meet the needs of the ever-evolving service.

It is acknowledged that the COVID-19 pandemic placed additional pressure on both the HP and IPC teams locally and nationally due to there being a requirement to provide specialist HP and IPC advice to primary care areas such as dental and general practice, with HP teams providing support in the wider community, and IPC teams supporting Health Protection with outbreak management and providing general advice on IPC practice to care homes and care at home. Whilst specialist teams in these areas will be equipped to lead on this work, local implementation and delivery will involve the whole multi-disciplinary Team across all settings.

The pandemic has highlighted a gap in IPC knowledge and skills in staff working across the health and care system, including primary and community care settings, but has also pointed to the synergies which exist across the AMS, HP and IPC workforce with respect to IPC and outbreak management. This provides an opportunity to explore ways in which relationships and teams can be strengthened and roles developed going forward.

The pandemic has also highlighted the need for this workforce to be broad based, flexible and adaptable and favours a future approach to training and recruitment, which recognises breadth of experience as being as important as an individual specialist contribution. There is a leadership role for professionals who have training and experience across both the acute and community setting and with broad skills embracing AMS, HP and IPC.

This document provides a framework through which we can work together to meet our goal of having: **an appropriately skilled, resilient, sustainable and confident workforce working in an integrated way and with all appropriate disciplines, delivering evidence based advice, guidance and interventions appropriate to localised need in both acute and community settings.**

Part 1:

Acknowledgements

Preparation of this Workforce Plan required external and internal stakeholder dialogue and engagement, focusing on how the AMS, HP and IPC workforce could be strengthened in the short term whilst planning for a more sustainable long-term position.

The work of the sub-groups and Oversight Board has been instrumental in driving this Plan forwards. Thanks are due to all those who have given their time to this work, especially as this work was undertaken during the course of the pandemic.

Part 1:

Aims and scope of the Plan

The Plan sets out the evidence base and recommendations which will be taken over the short, medium and long term to achieve our ambition of Recovery and Development of our IPC services. These recommendations include:

- Identify the current AMS, HP (with regards to IPC) and IPC (including management) specialist workforce across health and care both locally and nationally, and assess and address current and future demands and potential service gaps, in order to succession plan and build sustainability.

- Review and address IPC capability within the AMS and HP workforce.

- To progress the work for a national eSurveillance system for Scotland, with the support of local and national stakeholders.

- Identify the requirements for new/emerging local/ national specialist roles, which will support phased implementation of a sustainable workforce.

- Consider services are led by a clinical leader with an appropriate level of seniority relative to the size and complexity of the Board, whose sole focus is on AMR, HAI and IPC, accountable to the Executive Team and partnership, ensuring safe and effective clinical service delivery.

Part 1:

Aims and scope of the Plan

This plan does not cover:

> Capacity building within the HP workforce, which will be addressed through the Workforce Plan for Renewal of the Local Public Health Workforce in Scotland.

It should be noted that this plan does not scope the needs of the wider HP service, but the IPC needs of the wider population in health and social care, and is for the Boards to determine how these needs are addressed.

To achieve our outcomes, underpinned by an ambition of Recovery we must do this through the 5 pillars of the workforce journey, as set out in the **Health and Social Care National Workforce Strategy.**

The Five Pillars of the Workforce

Aims and scope of the Plan

Benefits

The benefits of this Plan will be to provide the operational context for health and care AMS, HP and IPC workforce and workload planning at both local and national level, to determine the adequacy of current resourcing, ensure demand does not outstrip supply, and support succession and resilience planning for the future. **(Workforce management pillars: Plan, Attract).**

This Plan will also ensure accessibility and consistency of the standards of education and training for this workforce, and meet expectations of these staff for professional growth and development from generalist to specialist, in addition to the continuing professional development needs of specialists. **(Workforce management pillars: Train, Nurture).**

The Plan aims to ensure the resilience, governance and escalation within the system for assurance of services. **(Workforce management pillars: Plan, Employ).**

Consideration has been given to the need for integrated eSystems and to ensure that resources are in place for local and national IPC surveillance, reporting and patient management, with sufficient interconnectivity both locally (within Boards) and nationally (across Boards), which can be used for forward planning and which will help to maximise efficiency and productivity through more effective use of human resources. **(Workforce management pillars: Plan, Nurture).**

Strong and effective leadership is essential for the delivery of this plan, at all levels of the workforce, in tandem with the required recovery and transformation of processes, systems and structures.

Implementation

This plan is for all NHS Boards, Health and Social Care Partnerships and independent and third sector providers in Scotland who have an accountability to deliver AMS, HP and IPC services through deployment of suitably skilled workforce and associated support infrastructure (such as surveillance, reporting and patient management systems) at both local and national level.

It is the intention that NHS Boards, Health and Social Care Partnerships, independent and third sector providers in Scotland take this Plan and work to operationalise it in the context of their own settings.

The landscape in Scotland

Since the inception of the Healthcare Associated Infections (HAI) Taskforce in June 2002, Scotland has developed robust systems to prevent and control HAI and contain and control AMR. Key milestones have included the development of our National IPC Manual, published in January 2012, contribution towards the UK 5 year AMR strategy (2013) and publication and implementation of Scottish Management of Antimicrobial Resistance Action Plan ScotMARAP 2 in 2014. The development of the first HAI Standards in 2008 by the then Quality Improvement Scotland, reviewed in 2015, and updated in May 2022 (and renamed IPC Standards) by Healthcare Improvement Scotland, act as a key component in the drive to reduce the risk of infections in health and social care in Scotland. These standards underpin Healthcare Improvement Scotland's programme of inspection of the safety and cleanliness in acute and community hospitals. The Care Inspectorate inspects services using self-evaluation frameworks (which include IPC practice) that are informed by these standards and the National IPC Manual.

The report into the outbreak of Clostridium difficile at the Vale of Leven Hospital by The Rt Hon. Lord MacLean in November 2014[1] made a number of recommendations regarding responsibilities and educational requirements for Boards and roles of local IPC and AMS teams. In addition, the report called for clarity regarding the need for robust reporting and governance structures for IPC teams both locally and nationally. This includes ensuring that surveillance systems are fit for purpose and that users receive appropriate training. As a result, National Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland in NHS Services Scotland (NSS), has developed national guidance and national surveillance programmes which include timely data feedback (both nationally and locally) to support reductions in HAI and containment of AMR. NHS Education Scotland (NES) has led the development of training and education programmes based on the ARHAI guidance for the wider workforce in support of addressing IPC knowledge needs.

In 2016, the World Health Organisation (WHO) published their Guidelines on Core Components of IPC Programmes at the National and Acute Health Care Facility Level[2]. Recognising that effective IPC is the cornerstone of managing threats posed by epidemics, pandemics and AMR, these evidence-based recommendations on the core components of IPC programmes provide the framework for our national IPC programmes in Scotland.

The report from the Queen Elizabeth University Hospital's Oversight Board in March 2021[3] raised the need for national learning regarded the increasing need for robust IPC and the drive for improvement in terms of leadership, reporting and governance as well as the need for joint working across the whole system in order to reduce the risk of harm from infection to those who use our health and care services.

The recently published IPC report by the Director-General of the WHO[4] outlines the impact of HAIs and AMR globally and the gaps and challenges in implementing national and local IPC programmes. The burden of HAI and AMR within healthcare settings worldwide is approximately 7 out of every 100 patients and the COVID-19 pandemic has demonstrated how critical IPC is to maintaining health and care services and to ensure patient and health and care worker safety. In Scotland, we have seen improvement in our HAI data in recent years and the recent ECONI[5] study demonstrated real inroads had been made pre pandemic with an incidence of HAI in hospitals close to 1%. Our prevalence surveys in Scotland in recent years have pointed to the importance of HAI in all hospital types (acute and community) and care homes6. The pandemic has illustrated the importance of maintaining that focus on prevention and managing this with the balance of harms required in considering IPC in all health and care settings. Thus, our HP and IPC Programmes need to be supported by a dedicated and appropriately trained specialist HP and IPC workforce, both nationally and locally, and their activities need integrated and owned within the wider health and care system delivery.

The challenges

Despite the progress made over recent years, reducing health and care related infections and containing AMR remain significant challenges, and high demands are placed on the specialist AMS, HP and IPC workforce. These staff work in a wide range of settings, set against the threats of AMR and existing endemic and emerging HAI pathogens. Whilst real progress has been made in training and educational national programmes for the generalist workforce in IPC and AMS, the specialist workforce needs require further consideration to ensure all have access to specialist training, education and career development pathways. This is essential for succession planning and ensuring continuity of this specialist workforce.

Over time as services have evolved and are rightly based on local context and needs, some variation has developed, in terms of key roles and their functions, role titles, numbers of staff, workforce structures and development requirements. Significant Scottish Government funding has been provided to ensure Boards provide IPC leadership and management, antimicrobial pharmacists and additional cleaning staff every year since 2005.

Scotland's population needs a high-quality workforce in this key area. Since 2019, Scotland has contributed to the UK's 5-year National Action Plan (NAP) to tackle AMR and the UK's 20-year Vision to contain and control AMR by 2040. The NAP contains a commitment to assess current and future needs of this workforce (based in both health and care settings) and to develop future workforce targets. The aim of this exercise was to explore the three specialist teams who provide robust specialist infection prevention, control and management services namely AMS, HP and IPC.

	**Primary care** – General practice, General dental practice, Optometrists and community Allied Health professions (AHPs)
	**Prisons** – Health covered clinics in prisons and HPTs would cover outbreaks in prisons
	**Care at home**
	**Care homes**
	**Day centres**

If the gaps that have become apparent through the pandemic (including the built environment) are to be addressed then it is important to establish what the service will look like in the future. This is essential in order to scope the future needs of the workforce.

Part 4:

Local and National delivery and monitoring

There is a real opportunity for local Boards and Health and Social Care Partnerships to explore how they might best further enhance the joint working of this resource, with sharing of knowledge, skills, and expertise building resilience into the system.

Locally, Boards, Health and Social Care Partnerships and independent providers in Scotland with the accountability and responsibility to manage AMS, HP (as regards the IPC element) and IPC will be required to develop a local integrated service delivery plan (LISDP) so as to operationalise this Workforce Plan in the context of their own settings. These plans should be routinely monitored and reported via Board and Integration Joint Board local governance arrangements. A checklist for inclusion in LISDPs is at Annex 1.

Boards should ensure that education and mentorship is embedded in the development of LISDPs and should lead this planning work in partnership with Health and Social Care Partnerships.

NHS Education for Scotland (NES), ARHAI, Scottish Antimicrobial Prescribing Group (SAPG), PHS Scottish Health Protection Network (SHPN) and NHS Assure will be pivotal in the delivery of this Plan; specifically, but not confined to, the review of the current educational infrastructure for specialist AMR, HP and IPC and national IPC/AMR guidance, surveillance and policy respectively. SAPG will continue to lead on national AMS strategy and delivery in conjunction with local AMTs and in collaboration with other key stakeholders.

HIS IPC Standards 2022, set out the appropriate and responsive governance and accountability mechanisms which should be in place. This includes an expectation that Boards have an IPC assurance and accountability framework that specifies as a minimum, defined roles and responsibilities, quality monitoring and assurance arrangements, reporting and escalation structures, and an IPC risk management strategy with clear lines of responsibility.

Recommendation 1:

Each Board should consider having a Clinical Lead [1-3] for Infection Prevention and Control with overarching responsibility for IPC and AMR across the Health and Social Care Partnership and direct line of communication to the Executive Team. This Clinical Lead should be of an appropriate level of seniority relative to the size and complexity of the Board. A national core role descriptor will be made available by Scottish Government.

This would ensure all services are led by a clinical leader whose sole focus is on AMR, HAI and IPC, accountable to the Executive Team and partnership, ensuring safe and effective clinical service delivery.

This recommendation builds on evidence following:

[1] The Vale of Leven Hospital Inquiry Report (2014)

[2] The Queen Elizabeth University Hospital Review (2020)

[3] The Queen Elizabeth University Hospital/ NHS Greater Glasgow and Clyde Oversight Board: Final Report (2021)

Part 5:

Developing the Optimal Workforce

As already discussed, the AMS, HP and IPC workforce comprises a number of specialist roles; many of these are embedded in local Health Boards and others working nationally within special Health Boards e.g. PHS, ARHAI, NES and SAPG provide support and expertise across Scotland.

Currently, recruitment and retention of these specialist workforces presents a considerable challenge and risk to delivery of services, however, there is real opportunity to alleviate this.

Whilst traditionally, the geography of Scotland has provided a challenge in terms of recruitment and retention of AMS, HP and IPC specialist staff, with the concentration of the population and specialist health services being located within Central Scotland, it is becoming increasingly challenging for all Boards to recruit to this workforce.

Rural and smaller peripheral health boards are particularly challenged with recruitment of specialist HP (with relevance to the IPC element) and IPC staff particularly, given that staff taking up a specialist post in these areas are likely to have to relocate their families in order to do so, and the variability of Agenda for Change job banding for their posts in comparison with the larger Boards and national posts. However, this issue is not confined to territorial Boards. Recruitment of suitably qualified specialist IPC staff to national posts e.g. ARHAI has also been challenging in recent years. Previously, staff within national posts have moved from territorial Boards within the Central Belt of Scotland with few from the north or island Boards, however, as the pandemic has provided opportunity to work remotely, there are more opportunities for this specialist workforce.

Pressures on this workforce, coupled with contextual changes, e.g. ageing workforce, complexity of healthcare delivery and additional asks for expertise e.g. the built environment, have resulted in an inconsistent picture of the specialist IPC workforce both locally and nationally.

A SAPG review of the AMS workforce across Scotland has shown significant challenges with regards to expanding roles, changing patient populations and new ways of working, with wide variation in work force configuration and remuneration between Boards (see annex 2, SAPG review). Antimicrobial Teams are often seen as “external” by clinical teams, and one of the main hindrances for AMS is a lack of wider senior clinician involvement and engagement. Consideration of non-infection specialist clinicians as the AMT lead may improve how AMS is embedded in clinical practice.

The scale of the challenge to support Social Care and to address the unmet needs of citizens remains significant. The Campaign Advisory Group for the National Adult Social Care recruitment campaign is assessing a range of enablers to further support recruitment into the sector, including employability; positive messaging; flexibility in job roles; the role of registration; apprenticeships; and reaching out to groups currently less represented in the workforce.

We are clear that Health and Social Care are interdependent. In all our action to grow the workforce, we will carefully consider the implications of recruitment in one part of the Health and Social Care system on the remainder of that system, recognising finite people resources.

The Scottish Government and partners will continue to take a person-centred approach to transforming the Health and Social Care systems and workforce and enable a healthier population in line with the COVID Recovery Strategy's aims. This aligns with our National Performance Outcomes and the Scotland in which we wish to live. This Workforce Strategy provides the overarching framework for enabling a workforce to deliver these outcomes.

HPTs have been subjected to challenging pressures throughout the pandemic, providing IPC support in the community. This is an opportunity to explore traditional IPC roles and consider new ways of working, such as rotational posts, which allow for movement across AMS, HP and IPC.

Workload capacity issues are subject to Healthcare Staffing Legislation for all staff groups, (noting that at this time there is no validated workforce workload capacity demand tool for these teams) but within that framework and given the significant changes above, there is merit in reviewing workload capacity at local level in the context of AMS, HP and IPC.

Recommendation 2:

Identify and review the current specialist IPC roles – ICD, IPC specialists, surveillance, healthcare scientist (such as scientists working within the microbiology lab and registered with a professional body that supports the work of IPC through analysis of environmental samples such as water results), epidemiologist, as well as HAI Executive Lead and ICM needs, determining which of these roles can be filled by healthcare professionals from backgrounds that have not traditionally worked in these specialist roles and consider entry level and pathway for the posts.

Recommendation 3:

Review the provision of IPC support available to Primary Care, including general practice and dental practice, and consider how these settings can be supported in the future, e.g. the use of peripatetic IPC practitioners. We would expect Boards to link in with professional groups and the Primary Care workforce specialists in these areas when undertaking the review.

Recommendation 4:

Identify and review the current AMS service delivery roles – Antimicrobial Team (AMT) Lead, Antimicrobial Pharmacists and Pharmacy technicians, specialist antimicrobial nurses and dedicated data analysis resource for surveillance. AMS teams having access to laboratory testing results to inform and support timely stewardship interventions is also important. AMS work (including stewardship clinical activity, interventions and communication, diagnostic stewardship and guideline development/ assurance and surveillance) should be recognised and appropriately remunerated, with sessional/whole time equivalent time allocated.

Recommendation 5:

Identify and review what additional roles and resources are required within the AMS workforce to ensure peer/undergraduate/ care home staff education, supporting infection management and enabling clinical audit, quality improvement and data collection. Consider the wider IPC provision and development needs within AMS and HP staffing in terms of:

- Assessing current education/training needs of these existing roles as well as the needs of those in new/emergent roles to support progression from generalist to specialist.

- Considering the ongoing development needs of those in AMS, HP and IPC Specialist Roles.

Recommendation 6:

Review the current IPC functions currently met by HP Teams and consider if they meet population needs.

Recommendation 7:

Consideration of the built environment has been a big part of the workload during the pandemic, with healthcare scientists playing a significant role in this, with issues such as ventilation being at the fore. Review of this workforce should consider how this specialism could be further incorporated into teams to enable future proofing.

Boards should consider the impact on experienced resource to mentor/train any new cohort.

Recommendation 8:

Improvement is needed in the quality and coverage of national-level workforce data, the identification of Workforce Planning Tools/ Methodologies to capture workload and identify workforce requirements with consideration being given to revisiting the WHO Core Components in terms of minimum requirements for a functional IPC programme at the national and facility level[7]. (Scottish Government to lead on discussions).

Recommendation 9:

IPC education and workforce leads to collaborate on a video promoting IPC as a career option (with Scottish Government co-ordination).

Recommendation 10:

There is a need to establish IPC networks to support staff in these services to ensure shared learning and cross-organisational links to be able to effect change and retain staff as well as providing mentorship and clinical peer support. This has been a weekly way of working between NSS ARHAI and the Boards during the pandemic and requires to be formalised and built upon (Scottish Government to lead on co- ordination).

Recommendation 11:

Board Regional Planning Groups to consider the provision of a formal framework involving key stakeholders, which supports the resourcing, and resilience of some key IPC/service functions within remote and rural boards.

The local review of needs as set out in recommendations 2 - 7 will be critical to inform and influence the national programme of work, (set out in recommendations 8 - 11) in order to avoid inconsistencies.

Part 6:

eSystems Review

In 2009, the Scottish Government allocated funding to NHS Boards for investment in eSystems for IPC surveillance within secondary care. To date, 10 territorial Boards (NHS Borders, Dumfries & Galloway, Fife, Forth Valley. Grampian, Greater Glasgow & Clyde, Highland, Lothian, Orkney and Tayside) have procured the ICNET IPC Surveillance System to support alert organism surveillance. Additionally, Scottish Government also provided funding to develop functionality, interfacing and reporting from the system and to cover five years of support costs. Boards have since extended ICNET support arrangements, and the current contract runs until January 2024.

Those territorial Boards which decided not to invest in the above infection control system have implemented their own local systems for alert organism surveillance. These include NHS Lanarkshire, Shetland, Ayrshire & Arran, National Waiting Times Centre, Western Isles and Orkney.

Monitoring and surveillance of alert organisms is critical to IPC. Effective utilisation and timely sharing of data both locally and nationally not only helps inform the management of individual patients and incidents, but also enables accurate and timely assessments of wider current and emerging threats. High-quality electronic data management systems support this workforce by reducing the risk of human error and preventing the need for repeated capturing, recording and reporting of data in multiple formats to multiple forums. Consistent and interconnected eSystems such as patient management systems (PAS) also support the maintenance of high standards of data quality and comparability; and high-quality data on healthcare associated infections (HCAIs) and AMR trends supporting local and national intelligence; informing and prioritising future policy requirements.

Effective use of information and digital systems has already supported and improved management of IPC to varying degrees across NHS Scotland. However, the significant variation between Boards does not accommodate the whole system approach, where patients routinely cross health and care settings as well as Heath Board boundaries. A common approach to the utilisation of information and digital systems would lead to improvements in patient and public safety by enabling up-to-date information to be available at the point of care, irrespective of care provider or care setting.

The eResources Subgroup review found that NHS Scotland would benefit from a single IPC eSystem, both at local and national level. It would require to be linked to the national digital health and care architecture, to enable integration with local and national systems and services, including possibly HP Zone (with consideration being given to the Outbreak Management Tool- OBM) and GP platforms. There is an additional AMS function on ICNET which could be explored, as well as the accessibility of surveillance for AMS.

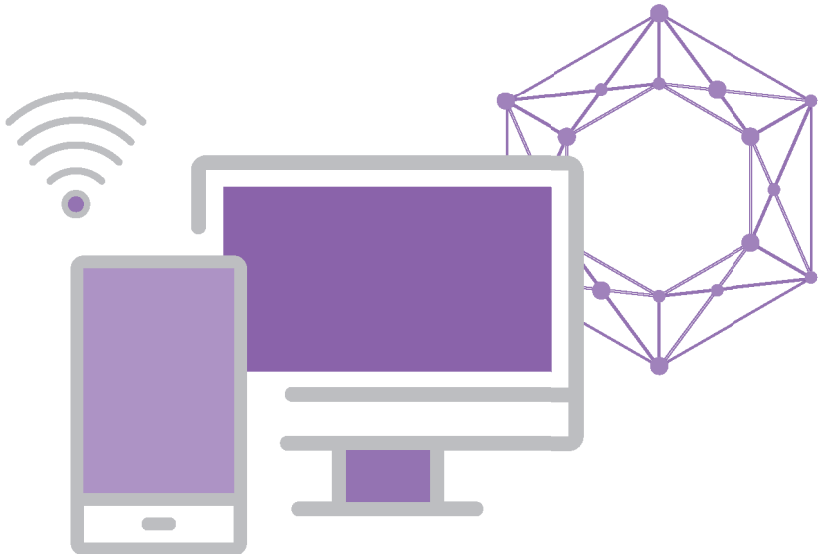
The current ICNET contract used by ten Health Boards is due to end in January 2024. The contract cannot be extended to include the remaining Health Boards, and it is unlikely that it can be extended in its current form beyond 2024. This situation provides an opportunity to develop a full business case (including options appraisal) for a national IPC surveillance eSystem. This exercise would enable Government, Boards, IT experts, data protection, HSE (in terms of General Practices) and other stakeholders, via a National Programme Board, to ascertain that proposals:

- are supported by a robust Case for Change – the Strategic Case;
- optimise Value for Money – the Economic Case;
- are commercially viable – the Commercial Case;
- are financially affordable – the Financial Case;
- can be delivered successfully – the Management Case.

A single system approach exists within NHS Wales, connecting local data to national and return, and the benefits are visible across the Welsh health and care system. The IPC surveillance system is managed and maintained by a single team and is flexible enough to allow local variance to meet local health and care requirements, whilst still forming part of a single system across the country. This system has supported robust and validated, real-time data and intelligence regarding nosocomial COVID-19.

Recommendation 12:

Scottish Government to commit to setting up of Programme Board to scope out and develop a business case for a national IPC surveillance eSystem for Scotland.



Part 7:

Opportunities for Education and Training

During the preparation of this Plan, stakeholders discussed induction, education, training, development and succession planning for the AMS, HP and IPC workforce.

Stakeholders highlighted that many existing development and educational materials are not clearly signposted, and that additional training in leadership behaviours, handling difficult situations and quality improvement are required.

To attract future workforce and retain existing staff:

Recommendation 13:

Boards should ensure staff are signposted and supported to higher educational materials and national resources via NES with regards to AMS, HP and IPC, to support their ongoing professional development needs.

In IPC, NES have delivered a suite of educational resources in recent years with a focus on building capacity and capability in the generalist workforce. Currently there are two specialist IPC MSc programmes offered in Scotland by Higher Education Institutions. A lack of a standardised training programme for ICDs has been highlighted, although Healthcare Infection Society run a Director of IPC development programme. Training and events programme - Healthcare Infection Society (his.org.uk).

Historically, colleagues within ARHAI have worked with NES to deliver epidemiology and outbreak training for specialist teams, which have involved local and national IPC, and HP teams working collaboratively using table top scenarios. These sessions have worked extremely well, not just in terms of knowledge and skills development but also in the provision of networking opportunities for IPC specialists across Scotland.

Further developments have been supported for building Quality Improvement capacity in IPC specialists in recent years with the Scottish Coaching in Leadership for Improvement Programme (SCLIP). This review provides an opportunity to develop a minimum set of knowledge and skills required for the role and a more attractive career progression based on educational knowledge and expertise. The Infection Prevention Society's 'Competencies Framework for IPC Practitioners'[7] will provide a very helpful reference point when reviewing IPC specialist development.

In HP, NES work in close partnership with PHS and stakeholders to progress a cohesive, integrated and progressive approach to workforce education development for the specialist HP workforce. This work has included the development of a national strategy, one part of which was the development and implementation of the 'Framework for Workforce Education Development for Health Protection in Scotland' (NES and HPS, 2006) which set the context for joint working. Staff working in wider Health Protection usually have a Masters in Public Health or are working towards the qualification. There are BSc/BSc (Hons) available in Public Health, while NES offer a variety of HP educational resources, including the HP nurse practitioner framework, and support the work of the SHPN.

In AMS, NES have worked collaboratively with ARHAI and SAPG, Scottish Antimicrobial Nursing Group (SANG) and Association of Scottish Antimicrobial Pharmacists (ASAP) to develop and test locally a wide range of educational modules to support prudent antimicrobial prescribing which are aimed at various staff groups and disciplines and hosted by the NES/ ARHAI team on the TURAS platform. Additionally, for those who wish to progress onto a career within AMS, there are online training courses available to support knowledge and skills e.g. University of Dundee. Through their AMS role, SAPG have also developed a wide range of antimicrobial prescribing and infection management guidance for practitioners and prescribers.

There is a need for creation of a learning-system aimed at building specialist AMS, HP and IPC workforce capability which is based on the current and future needs of the service and which is supported nationally by NES and ARHAI to meet the post graduate needs of the workforce, in addition to ensuring that foundation level IPC modules are available to all health and social care staff.

Learning should be role and context specific and recognise the required skillsets and interdependencies of each speciality.

Recommendation 14:

NES to undertake a gap analysis to review the current educational pathway and identify key priorities for development to meet future and evolving needs.

Recommendation 15:

NES to undertake a review of the existing IPC frameworks for the IPC workforce, as well as creation of an AMS framework (HP nurses have an existing framework).

We envisage that there will be some educational modules which will transcend across all frameworks, while some will need to be tailored to the specific specialist workforce. The frameworks will lead the learner from generalist to specialist.

It is anticipated that NES will continue to engage with Higher Educational Institutions, during the development of the IPC Compendium and frameworks.

Part 8:

Summary of Recommendations Mapped to National Workforce Plan

Local and National delivery and monitoring (Plan, Employ)

Recommendations	Owner	Timescale
Recommendation 1 - Local Each Board should consider having a Clinical Lead for Infection Prevention and Control with overarching responsibility for IPC and AMR across the Health and Social Care Partnership and direct line of communication to the Executive Team.	NHS Boards	March 2024
Recommendation 1 - National Core Role Descriptor developed for Clinical Lead role.	CNOD	March 2023

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 2 – Local Identify and review the current specialist IPC roles – ICD, IPC specialists, surveillance, healthcare scientist (such as scientists working within the microbiology lab and registered with a professional body that supports the work of IPC through analysis of environmental samples such as water results), epidemiologist, as well as HAI Executive Lead and IPC specialist needs, determining which of these roles can be filled by healthcare professionals from backgrounds that have not traditionally worked in these specialist roles and considering entry level posts.	NHS Boards	March 2024
Recommendation 3 – Local Review the provision of IPC support available to Primary Care, including general practice and dental practice, and consider how these settings can be supported in the future, e.g. the use of peripatetic IPC practitioners. We would expect Boards to link in with professional groups and the Primary Care workforce specialists in these area when undertaking the review.	NHS Boards	March 2024

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 4 – Local Identify and review the current AMS service delivery roles – Antimicrobial Team (AMT) Leader, Antimicrobial Pharmacists and Pharmacy technicians, specialist antimicrobial nurses and dedicated data analysis resource for surveillance. AMS work (including stewardship clinical activity, interventions and communication, diagnostic stewardship and guideline development/ assurance and surveillance) should be recognised and appropriately remunerated, with sessional/whole time equivalent time allocated.	NHS Boards	March 2024

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 5 – Local Identify and review what additional roles and resources are required within the AMS workforce to ensure peer/undergraduate/ care home staff education, supporting infection management and enabling clinical audit, quality improvement and data collection. Consider the wider IPC provision and development needs within AMS and HP staffing in terms of: • Assessing current education/training needs of existing roles as well as the needs of those in new/emergent roles to support progression from generalist to specialist. • Considering the on-going development needs of those in AMS, HP and IPC specialist roles.	NHS Boards	March 2024

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 6 – Local Review the current HP IPC roles and consider what additional roles and resources are required.	NHS Boards	March 2024
Recommendation 7 – Local Consideration of the built environment has been a big part of the workload during the pandemic, with healthcare scientists playing a significant role in this, with issues such as ventilation being at the fore. Review of this workforce should consider how this specialism could be further incorporated into teams to enable future proofing.	NHS Boards	March 2024

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 8 – National Improvement is needed in the quality and coverage of national-level workforce data, the identification of Workforce Staffing Tools/ Methodologies to capture workload and identify workforce requirements with consideration being given to revisiting the WHO Core Components in terms of minimum requirements for a functional IPC programme at the national and facility level7. For AMS workforce planning consideration should be given to the 2022 SAPG review and recommendations (referenced in appendix 2).	SG to lead discussions	September 2023
Recommendation 9 – National/Regional/ Local IPC education and workforce leads to collaborate on a video promoting IPC as a career option.	CNOD HAI Strategy	March 2023

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 10 – National/Regional/ Local There is a need to establish IPC networks, incorporating HP, and strengthen AMS networks (including nursing and pharmacy via SANG and ASAP) to support staff in these services to ensure shared learning and cross-organisational links to be able to effect change and retain staff as well as providing mentorship and clinical peer support. This has been a weekly way of working between NSS ARHAI and the boards during the pandemic and requires to be formalised and built upon now. SAPG continues to provide key national AMS leadership via its constituent AMTs, across disciplines and across Health and Social care. Its future role should be secured and strengthened to ensure optimal AMS in Scotland.	CNOD HAI Strategy	March 2023

eSystems (Plan and Nurture)

Recommendations	Owner	Timescale
Recommendation 11 – Regional Consideration is required around the provision of a formal framework, involving key stakeholders, which support the resourcing and resilience of some key IPC/ service functions within remote and rural boards.	Board Regional Planning Groups	September 2023
Recommendation 12 – National Set up programme Board to scope out and develop a business case for a national IPC surveillance eSystem for Scotland.	SG	December 2022
Recommendation 13 – Local Boards should ensure staff are signposted and supported to higher educational materials and national resources via NES with regards to AMS, HP and IPC, to support their ongoing professional development needs.	NHS Boards	March 2023

Developing the Optimal Workforce (Plan, Attract)

Recommendations	Owner	Timescale
Recommendation 14 – National NES to undertake a gap analysis to review the current educational pathway and identify key priorities for development to meet future and evolving needs.	NES	March 2023
Recommendation 15 NES will undertake a review of the existing IPC frameworks for the IPC workforce, as well as creation of an AMS framework.	NES	March 2023

Part 9:

Next steps

The Scottish Government would welcome your engagement in taking these recommendations forward and will link in with stakeholders to seek progress updates on these recommendations, as well as informing stakeholders on Scottish Government progress as part of our HAI Strategy refresh. HAI Policy and Strategy Team will continue to offer guidance and support around the development of local integrated service delivery plans and can be contacted at: **HAI_Policy_Unit@gov.scot**.

Part 9:

References

1. McLean. The Vale of Leven Hospital Inquiry Report: accessed via website **9781784128449.pdf (nls.uk)** (2014) on 07/02/22

2. Scottish Government. Queen Elizabeth University Hospital Oversight Board : accessed via website **Queen Elizabeth University Hospital/ NHS Greater Glasgow and Clyde Oversight Board: final report - gov.scot (www.gov.scot)** (2021) on 07/02/22

3. World Health Organisation. **Guidelines on Core Components of Infection Prevention and Control at the National and Acute Health Care Facility Level: accessed via website Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level (who.int) (2016) on 07/02/22**

4. Manoukian S, Stewart S, Graves N, Mason H, Robertson C, Kennedy S, Pan J, Haahr L, Dancer SJ, Cook B, Reilly J. Evaluating the post-discharge cost of healthcare-associated infection in NHS Scotland. Journal of Hospital Infection, 114, pp51-58, 2021

5. World Health Organisation. Executive Board Infection Prevention & Control Director General Report: Executive Board, 150th Session, 2022

6. Health Protection Scotland. National Point Prevalence Survey of Healthcare Associated Infection and Antimicrobial Prescribing. May 2016

7. Infection Prevention Society. Competencies Framework for Infection Prevention & Control Practitioners: accessed via website **IPS-Competencies-Framework-V2.3-Final-June-2021 (1).pdf accessed on 07/02/22**

8. Scottish Government. Enabling, Connecting and Empowering: Care in the Digital Age – Scotland's Digital Health and Care Strategy. Accessed via website **enabling-connecting-empowering-care-digital-age (1).pdf 2021 on 07/2/22**

Annex

Summary of Actions

Boards' local integrated service delivery plans (LISDP) for Infection Services (AMS/HP/IPC): checklist for inclusion

The key to achieving our ambitions, vision, outcomes and values for the workforce is to give appropriate attention to each of the "five pillars" of workforce management: **Plan, Attract, Train, Employ, Nurture**. Details of these are set out in the National Workforce Strategy for Health and Social Care in Scotland. Each of these pillars should be included in the plans that Boards make to operationalise this workforce plan in their own context. **The following is a checklist of expected inclusions in your LISDP:**

Plan

- Statement of what AMS, HP and IPC services are required in your area.
- Statement of which service needs are currently being met and any unmet needs.

Note: Plans should be based on the use of Workload and Workforce planning tools and methodologies where they exist.

Attract

- Statement of supply and demand issues facing the local workforce currently.
- Statement of supply and demand issues likely to face this workforce in the future.

Note: Consideration should be given as to whether the service needs are being fully addressed by current recruitment mechanisms, including the need for consideration of the requirement for out of hours and 7-day service cover bearing in mind that more flexible shift patterns may help recruitment and retention.

Train

- Statement clarifying the commitment to regular development to ensure resilience, sustainability and succession planning relating to expertise of this workforce.
- Statement clarifying how built healthcare environment expertise is secured, be that through internal development and/or by access to national-level support.

Note: Consideration should be given to the level of practice (informed to expert/advanced) required within the various specialist posts. Any specialist training and development should be aligned to the individual post holder's required level of practice.

Employ

- Statement confirming that the leadership and management of these staff groups is of appropriate seniority, with the ability to engage at Board level and have Director-level access.
- Statement clarifying the governance arrangement for each of these services and associated workforces.

Note: Plans should be based on the use of Workload and Workforce planning tools and methodologies where they exist.

Nurture

- Statement clarifying the data analysts support for this workforce, including networking and mentoring of IPC teams by data specialists to ensure optimal use of data.
- Statement on new/emerging roles identified, clearly defined and details of how they are being embedded fully in existing teams and add value and whether there has been consideration given to whether they are positioned locally, regionally or nationally.

Note: Consideration is needed to the optimum configuration of these particular skill sets for the particular area, whether these are specialist posts or part of the ongoing development of their wider teams.

Annex 2:

Supporting documents for workforce planning

Planning for aspects of the workforce

1. National Workforce Strategy **Health and social care: national workforce strategy - gov.scot (www.gov.scot)**

2. Scottish Antimicrobial Prescribing Group (SAPG) review of Antimicrobial Management Team Workforce **20220530-sapg-workforce-report-v41.pdf**

3. NSS Diagnostic Steering Group - Scotland's Future Laboratory Workforce **DSG-WFP-Final-Report-v1.pdf (scot.nhs.uk)**

4. Factors influencing the stewardship activities of antimicrobial teams; a national cross-sectional study **Factors influencing the stewardship activities of Antimicrobial Management Teams: a national cross-sectional survey - PubMed (nih.gov)**

5. Scottish Microbiology and Virology Network (SMVN) Infection Control Doctors' sub-group paper on "The Infection Prevention and Control Doctor within Scotland" (available on request

6. Public health Scotland (PHS) Review of Public Health Workforce – not yet published. Link to **2015 Review of Public Health in Scotland 2015 Review of Public Health in Scotland: Strengthening the Function and re-focusing action for a healthier Scotland - gov.scot (www.gov.scot)**

Annex 2:

Supporting documents for workforce planning

Education and training

1. National Infection Prevention and Control Manual **National Infection Prevention and Control Manual: Home (scot.nhs.uk)**

2. NES IPC Zone **Infection Prevention and Control (IPC) Zone | Turas | Learn (nhs.scot)**

3. All Wales Education Framework: **https://heiw.nhs.wales/files/ipc-framework-final-nbsp/**

4. Infection Prevention Society (IPS) Competencies Framework for IPC Practitioners **IPS Competencies Framework | IPS**

5. NHS England IPC Core Capabilities Framework - not yet published. Further information on work **Infection Prevention and Control | Info Hub | Resources | Skills for Health**

6. National Learning and Development Strategy for the Specialist Healthcare Built Environment Workforce **HBE Learning and Development Strategy September 2021 | National Services Scotland (nhs.scot)**