Developing Systems Leadership in Public Health

A Scoping Report

UWE Bristol | University of the West of England

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Abbreviations

ARCP	Annual review of competency progression
CAS	Complex adaptive system
CCG	Clinical Commissioning Group
CPD	Continuing professional development
DPH	Director of Public Health (plural DsPH)
ED&I	Equality, diversity and inclusion
FPH	Faculty of Public Health
GMC	General Medical Council
HEE	Health Education England
HWB	Health and Wellbeing Board
NHS	National Health Service
PHE	Public Health England
STP	Sustainability and Transformation Partnership
VSC	Virtual Staff College
UKPHR	UK Public Health Register
UWE	University of the West of England

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1 Executive summary

1. This document reports the outcomes of a **scoping project** commissioned by Public Health England (PHE) in order to outline possibilities for developing the **systems leadership capacity** of public health registrars and newly appointed consultants. It has been written for those involved in the design, delivery and accreditation of training and professional development for **public health registrars and consultants** across the UK in order to support the upscaling of systems leadership development opportunities within the sector.

2. The project was undertaken by a **multi-disciplinary team** based at the University of the West of England, drawing on the expertise of the Bristol Leadership and Change Centre and the Centre for Public Health and Wellbeing as well as a number of independent consultants with backgrounds in leadership and organisation development and public health. The methodology involved **consultation and engagement with a range of stakeholders** with extensive experience of the public health landscape in the UK, including 10 registrars, 2 consultants, 3 directors of public health, 3 PHE managers/board members, 3 Faculty of Public Health (FPH) managers/board members, 4 heads of school/postgraduate deans, and 4 other UK-based public health professionals, through interviews, a focus group and a co-design workshop.

3. The **literature review** synthesises a large body of evidence on the theory and practice on systems leadership, the changing context of public health and training and development for public health professionals in the UK. It identifies key principles of a systems perspective, including **systems thinking**, **complexity** and **systems change**. Building on work by the Virtual Staff College, NHS Leadership Academy, Leadership Centre, The Kings Fund and others, the key qualities required of systems leaders are highlighted, along with the importance of **reflection** and the development of a **collaborative mindset**. The review of public health literature highlights a number of **tensions and challenges** facing the sector, as well as a fair degree of **contextual variability**. The review of training and development highlights the importance of the **specialty curriculum** in setting the expectations for professional training and development in public health across the UK but notes the relative **lack of emphasis** on complexity and systems leadership in the current version. A number of sources of **systems leadership development** accessible to public health professionals are also identified.

4. The review of evidence from **stakeholder consultation and engagement** identifies four main thematic areas, as outlined in the text and figure below. A range of issues are presented for each area, supported by quotes from participants, as well as suggestions about possible actions.

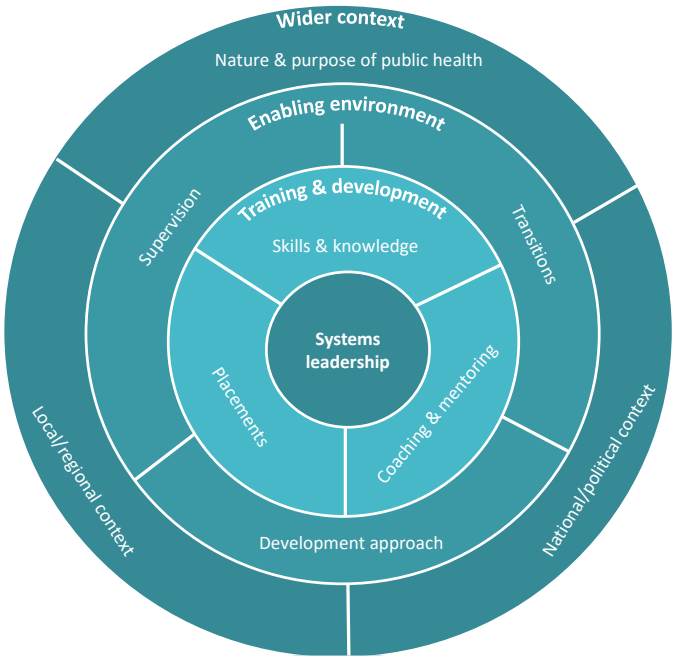
    a. The **nature and purpose** of systems leadership – it was noted that there was no shared definition/understanding of systems leadership although key aspects were seen to include leading across and beyond organisational boundaries, leading without power or authority, boundary spanning (being the 'glue') and creating change whilst not being in charge.

    b. **Development needs/opportunities** for registrars and consultants - particular attention was given to acquiring relevant **skills and knowledge**, such as systems thinking and working with complexity; careful selection, framing and supervision of **placements**; and timely and appropriate **coaching and mentoring**.

    c. The **enabling environment** – including suitable and experienced **supervision**; managing **transitions** into/out of training and between roles; and a **development approach** that emphasises

opportunities for learning from mistakes, developing inter-personal qualities and working with ambiguity and uncertainty.

d. **The wider context of public health** – including the **changing nature and purpose of public health**, the **local/regional context** and the wider **national/political context**.



5. Building on insights from the literature review and stakeholder consultation/engagement a series of **principles and concepts** underpinning a systems approach to leadership development are presented, along with six **levels of learning**, ranging from leading self to leading team/organisation, leading collaborations/partnerships, leading local systems and leading wider system/across systems. These principles are then used to outline an **indicative development framework** for public health professionals through the five years of the specialty training programme (as registrar) into the years following qualification (as consultant). Three distinct phases of learning/development are outlined (see below), along with indicative content and learning outcomes. Suggestions are also given for the **monitoring and evaluation** (formative, interim, transformative and summative) of training/development.

   a. **Phase 1** (years 1-3 of registrar training) – to include **introduction to systems leadership** (level 1) and **leading self** (level 2).

   b. **Phase 2** (years 3 to 5 of registrar training) – to include **leading others** (level 3) and **leading systems** (level 4).

   c. **Phase 3** (first 2 years+ as a consultant) – to include **mobilising systems change** (level 5) and **sustaining systems leadership** (level 6).

6. The report concludes with a series of **18 recommended actions**, grouped into four thematic areas, as summarised below. In Table 4 in Section 6.1 a **lead agency/organisation** is suggested, alongside a possible route and/or key partners. It is hoped that this document provides a valuable resource for those involved in the development and accreditation of public health professionals and a timely call to action.

Summary of recommended actions

Curriculum development	1. Incorporate systems leadership knowledge and skills (including systems thinking and complexity theory) into the Public Health Specialty Training Curriculum, ensuring clear guidance on intended learning outcomes.
	2. Incorporate systems leadership knowledge and skills (including systems thinking and complexity theory) into public health masters programmes.
	3. Develop online learning resources for enhancing literacy and fluency in complex systems approaches to public health action - including a shared definition of systems leadership in public health, illustrative examples, case studies, videos and readings.
	4. Develop a forum for debate, research and the sharing of good practice on systems leadership in public health (e.g. online networks, conferences, journals).
	5. Conduct a thorough analysis of the conceptual underpinnings of the Public Health Specialty Training Curriculum when it next comes up for review, in order to ensure consistency and coherence of approach and compatibility with insights from a complexity approach.
Speciality training programme	6. Incorporate a staged learning and development programme for systems leadership across all years of the specialty training programme. Ensure that training placements for systems leadership provide sufficient time to participate in, develop and take responsibility for, place-based initiatives, relevant to training stage.
	7. Embed systems leadership knowledge and skills (including systems thinking and complexity theory) into supervisor training, CPD and accreditation.
	8. Provide registrars with opportunities for systems leadership coaching and mentoring with skilled mentors/coaches external to the public health field.
	9. Map and provide a directory of educational, clinical, academic and activity supervisors and key stakeholders with systems leadership expertise to inform placement decisions.
	10. Monitor placements to ensure experience is gained in applying systems change skills in different environments and system levels.
	11. Schools of public health to track and share their learning on systems leadership development with each other and the wider system.
Transition to new consultants	12. Create and sustain a peer support network for new consultants (e.g. online forum, peer support, social media groups, action learning sets, mentoring, buddying).
	13. Ensure accessible (e.g. low cost) annual development events available to new consultants in every region.
	14. Regular surveys of new consultants on development needs, in particular regarding systems leadership.
	15. Protected time for new consultants for systems leadership development.
Wider system	16. Public health community to support and participate actively in the development of an evidence base for public health action based on a systems/complexity perspective.
	17. Compile a database of regional and national systems leadership programmes/workshops that public health professionals can access at different stages of their career and signpost potential sources of funding.
	18. PHE to take a national role in advocating a systems leadership approach, informed by a robust evidence base on the value of cross-sector collaboration to tackle 'wicked' health and social care challenges.

2 Introduction

This document reports the outcomes of a scoping project commissioned by Public Health England (PHE) in order to outline possibilities for developing the systems[1] leadership capacity of public health registrars and newly appointed consultants in the UK. It has been undertaken by a multi-disciplinary team based at the University of the West of England, drawing on the expertise of the Bristol Leadership and Change Centre and the Centre for Public Health and Wellbeing as well as a number of independent consultants. We have also consulted with a range of stakeholders with extensive experience of the public health landscape in the UK.

2.1 Project brief

In Summer 2018 PHE published a call for tenders, developed in collaboration with the Faculty of Public Health (FPH), on the topic of *Developing systems leaders*. The aim of this project was to conduct a scoping study on how "to develop systems leadership among registrars and new consultants". This was in response to an identified issue that "registrars and new consultants do not feel themselves/are not thought to be sufficiently skilled in leadership across the system" and the opportunity "to develop a mechanism to improve capability in crucial *inter*personal and systems based skills but also supporting *intra*personal development in emotional intelligence, self-confidence and resilience for handling different and sometimes emotionally very challenging, situations"[2].

Proposals were expected to:

1. "Draw on cutting-edge expertise in systems-change leadership nationally and internationally, to identify the capacities, skills and tools that could be developed by the public health learning community."

2. "Outline objectives for the new programme together with key steps for its detailed design and implementation, its anticipated form, potential for evolution. This should include indication of what can be evaluated, both processes and outcomes."

3. "Ideally co-created with key stakeholders in the current public health development environment and with key 'clients' of public health expertise."

4. "Adopt an agile approach, recognising that even scoping this work will impact the 'system' it is examining."

The required output of the project was "a report with clear recommendations for action that can then be considered over a period of time". The team at UWE, Bristol were appointed in August and started the work in September 2018.

[1] The terms 'system' and 'systems' leadership are used fairly interchangeably in the literature. Within this report we have chosen to use the plural form - 'systems leadership' - to highlight that the work of public health does not fall within a single, neatly bounded system but rather across multiple, interconnected systems – the boundaries, content and purpose of which may be redrawn depending on who is involved and what they are trying to achieve.

[2] All quotes in this section are taken from the original PHE specification document.

2.2 Methodology

Our response to this brief included a two-phase approach, as summarised below.

Phase 1 – Scoping, consultation and review (September – December 2018)

The first phase of activity involved stakeholder consultation and a thorough yet rapid review of relevant evidence and practice on systems leadership and leadership development in public health, including:

- Mapping of existing leadership development provision for UK-based public health specialists;
- Synthesis of key frameworks and standards relevant to the professional development of public health registrars and consultants and identification of key systems leadership competencies;
- Identification of innovative/novel approaches to developing systems leadership capacity, especially those that support the aspiration for a programme based on the 70-20-10 rule[3];
- Consultation with key stakeholders to understand the context, expectations and requirements for the programme and to build a sense of joint ownership and engagement.

Phase 2 – Programme design (January – April 2019)

Development of programme outline and approach, to include pedagogical principles, intended learning outcomes, experiential activities, coaching provision, curriculum/content, 70-20-10 learning structure, and evaluation principles/approaches. The methodology for this phase included:

- Outline design of draft programme outline/options;
- Collaborative design session with invited stakeholders from PHE, FPH, Health Education England (HEE) and/or regional public health training programmes;
- Detailed design and preparation of curriculum;
- Consultation with project funders;
- Preparation of final report.

From initial discussion with the project commissioners it was made clear that, as far as possible, the emerging proposals should complement and integrate with existing training provision for public health registrars and consultants rather than as a new, standalone programme. We have taken note of this in our subsequent work and in the compilation of this report.

2.3 Report structure and intended audience

This report is structured into a number of chapters that present an analysis of findings from the two-phase methodology, alongside consideration of their implications for policy and practice. Chapter 3 provides a summary of key themes/issues from the literature review. Chapter 4 identifies themes from the

[3] The 70-20-10 rule is widely used as a basis for the design of leadership and management development interventions, comprising 70% of time spent on challenging assignments (on-the-job learning), 20% spent in developmental relationships (coaching and mentoring), and 10% spent on coursework and training (formal/classroom learning) (see https://www.ccl.org/articles/leading-effectively-articles/70-20-10-rule/) and has been adopted by PHE within their public health training/development scheme.

stakeholder consultation and engagement. Chapter 5 outlines an integrated approach to systems leadership development. Finally, Chapter 6 highlights recommendations and conclusions.

This report has been written for those involved in the design, delivery and accreditation of training and professional development for public health registrars and consultants across the UK. It does not claim to be a definitive source of evidence, advice or guidance but rather to provide reflections and suggestions on how a systems leadership perspective could be enhanced and embedded within the curriculum and learning/development infrastructure of UK public health.

3 Literature review

> *"We are at the beginning of the beginning in learning how to catalyse and guide systemic change at a scale commensurate with the scale of the problems we face, and all of us see but dimly." (Senge et al., 2015)*

A rapid literature review was conducted in order to inform the subsequent programme design phase. To accelerate this process, members of the interdisciplinary team collated sources into a combined online folder and produced a brief synopsis of key documents (see References and Bibliography). This then led to the compilation of evidence on:

- Systems leadership: theory and practice;
- The changing nature of public health;
- Training and development for UK public health professionals.

A synthesis of key points from each of these areas is outlined below.

3.1 Systems leadership: theory and practice

> *"System leadership is about local leaders from across the health and care system sharing a cohesive approach to working together to improve the whole local health and care system... System leaders have clear, shared priorities that are grounded in the needs of their communities and not in the interests of individuals or their organizations... System leadership is vital to delivering integrated care, transforming services to address the financial and demographic challenges facing health and social care, and tackling health inequalities." (NHS Confederation, 2014)*

3.1.1 What is systems leadership?

Where systems leadership differs most significantly from traditional leadership theory, research, development and practice is through the focus on leading beyond organisational and professional boundaries in order to address cross-cutting 'wicked'[4] problems. In such contexts, mainstream notions of leadership and management - informed by organisational structures, hierarchies and outcomes – tend to be limited in their relevance/application and may well be counter-productive.

A review commissioned by the Virtual Staff College (VSC) suggested that *systems leadership* has two main characteristics: (a) "it is a collective form of leadership..." concerned with "the concerted effort of many people working together at different places in the system and at different levels", and (b) it "crosses boundaries, both physical and virtual, existing simultaneously in multiple dimensions" (Ghate et al., 2013). Rather than taking an organisational focus, systems leadership shifts attention to the wider network of groups, organisations, communities and stakeholders – and the relationships between them – in effecting large-scale system-wide change. The integrated systems leadership framework arising from this work

[4] A wicked problem is one that is challenging to find a solution to because of complex, contradictory, and changing requirements that are often difficult to recognise and/or achieve agreement about (Grint, 2008).

(Figure 1) highlights how a systemic approach can improve outcomes for service users by helping leaders to navigate the volatile, uncertain, complex and ambiguous (VUCA) context in which they operate.

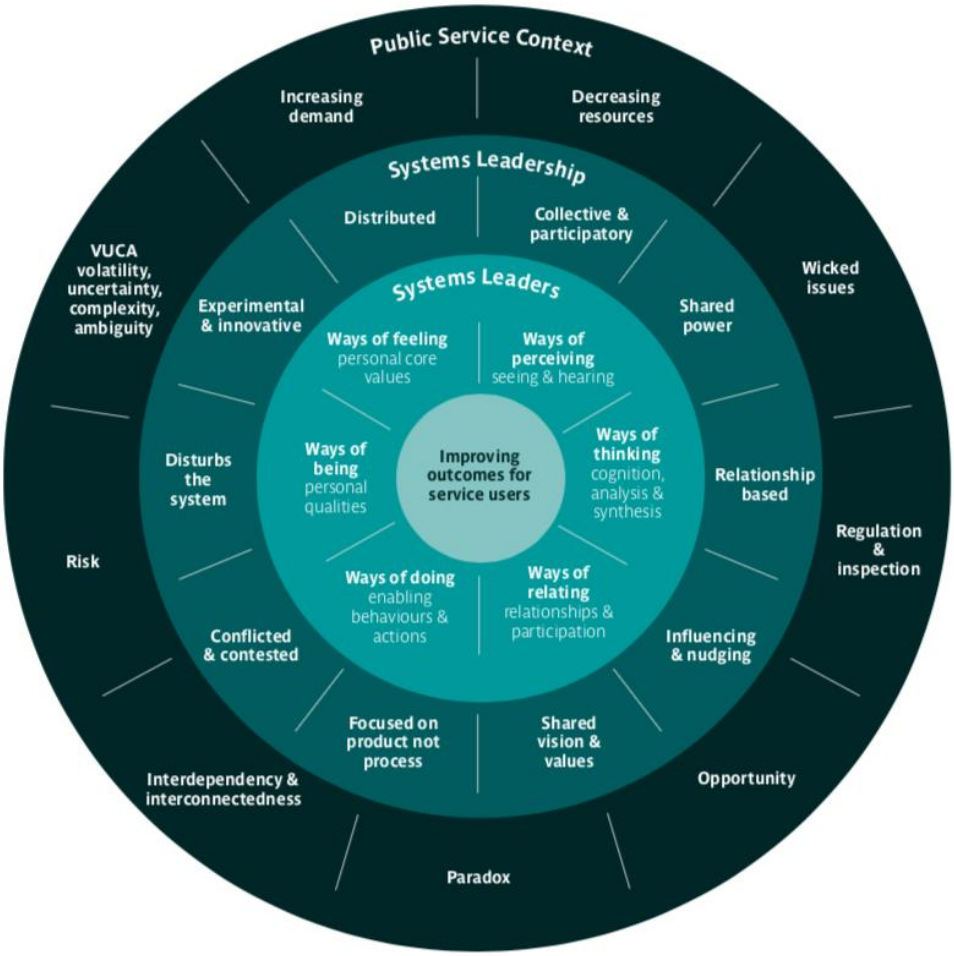


Figure 1 – Integrated Systems Leadership Framework (Ghate et al., 2013)

The VSC review identifies the conceptual foundations of 'systems leadership' as deployed in UK public services and the implications for the ways in which 'systems leaders' should operate. They suggest that:

> *"At the heart of systems leadership in practice are shared values and intentions to improve outcomes for service users." (Ghate et al. 2013)*

The inner ring of the diagram indicates the capacities required of **systems leaders**:

1. Personal core values (*ways of feeling*);
2. Observations, 'hearing' and perceptions (*ways of perceiving*);
3. Cognition, analysis, synthesis (*ways of thinking*);
4. Participatory style (*ways of relating*);
5. Behaviours and actions (*ways of doing*); and
6. Personal qualities (an overarching *way of being* that forms the essence of both professional and personal style and approach).

The middle ring indicates the wider characteristics of **systems leadership**, including key factors that enable or constrain the capacity for a systems-based approach to leadership, whilst the outer ring highlights the characteristic features of the contemporary **public service context** that creates the need for systems leadership.

3.1.2 Developing systems leadership

The importance of a holistic approach that actively adapts to and engages with the local context in which leadership takes place is well reflected through the work of the Leadership Centre. Through a suite of place-based leadership development interventions, programmes for aspiring and established leaders and applied research, the Leadership Centre has developed a particular reputation for facilitating systems change through the use of skilled 'enablers' who can support local partners in collaborating on complex and contested issues (see Bolden, Gulati and Edwards, 2019). The collective wisdom of their practitioners is captured in *The Art of Change Making* (Atkinson et al. 2015), which provides a compilation of concepts and techniques to support understanding systems, people and groups, as well as skills and tools for facilitators. This builds on the integrated framework outlined in Figure 1 to demonstrate how it might be possible to help people, projects and places navigate the political, ideological and practical challenges of working across boundaries. Particular attention is given to concepts such as living systems (including 'Myron's Maxims' for working with living systems[5]), social movements (including Marshall Ganz's, 2010, 2011, work on public narrative and social change), complexity (including Stacey's, 1996, complexity matrix), psychodynamics (including Bion's, 1961, work on basic assumption groups), dialogue (Isaacs, 1999) and reflective practice (Schon, 1983). Insights are also provided on features of effective facilitation, including the importance of being "neutral, ego-less, observant, reflective, knowledgeable, generous, inquisitive and empathetic" (Atkinson et al. 2015).

Another organisation that has actively promoted a systems leadership approach is the NHS Leadership Academy. A systems leadership development framework developed by the East Midlands Leadership Academy (2015) identifies four main dimensions of a systems leadership approach – individual effectiveness, relationships and connectivity, learning and capacity building, and innovation and improvement. The national NHS Leadership Academy is now focusing on using systems leadership as a mechanism for enhancing equality, diversity and inclusion through its *Building Leadership for Inclusion* (BLFI) initiative, which seeks "to raise the level of ambition, quicken the pace of change, and ensure that NHS leadership is equipped to achieve and leave an ever-increasing and sustainable legacy in relation to equality, diversity and inclusion" (NHS Leadership Academy, 2019). BLFI seeks to learn from the 'lived experience' of marginalised staff to mobilise large scale culture change with regards to inequality (see Bolden, Adelaine et al. 2019 for further details).

The Kings Fund has also been influential in terms of research, policy advice and organisational development on system leadership in health and social care in the UK, emphasising the importance of collective and distributed leadership in action - where individual leaders spend time looking outside their own organisations in order to lead across local and place-based systems. The Kings Fund's recent research

[5] This is a series of six principles for mobilising change in complex systems derived from the work of Myron Rogers – (1) people own what they help create; (2) real change happens in real work; (3) those who do the work, do the change; (4) connect the system to more of itself; (5) start anywhere, follow everywhere; (6) the process you use to get to the future is the future you get (Rogers, cited in Atkinson et al., 2016).

on 'System Leadership'[6] indicates that a major shift in perspectives and leadership style is required; with priority given to strengthening collaborative relationships and trust between partner organisations and their individual leaders. This has often been achieved by establishing shared objectives, spending time together, and undertaking focused development work within place-based leadership groups. They also highlight that successful system leaders exemplify a range of collective leadership skills and approaches. Collective leadership in this context means everyone taking responsibility for the success of the organisations and systems in which they work - characterised by a belief that leadership is the responsibility of all system members rather than just those in senior positions of authority (see, for example, Ham and Alderwick, 2015, Hulks et al., 2017, Timmins, 2015, West et al., 2014).

3.1.3 Implications of a systems leadership perspective

The shift in emphasis from leading discrete teams, organisations and/or projects to exerting influence and mobilising change within complex and contested systems and partnerships relies on an understanding of systems and complexity. Needless to say, there are numerous (and competing) schools of thought around the nature of systems from quite mechanical (as in engineering) to far more fluid and adaptive (much like living ecosystems). Donella Meadows' work has been particularly influential in shaping understandings of complex human systems and how to mobilise system change through the use of 'leverage points' (Meadows, 1999). From this perspective, behaviours and outcomes arise from a complex interplay between interdependent entities, as outlined below.

> *A system is "an interconnected set of elements that is coherently organised in a way that achieves something. There are elements, interconnections and a purpose. A system to a large extent causes its own behaviour!" (Meadows, 2008)*

A common aspect of this and other accounts, is a shift in focus from looking at separate parts to a more holistic perspective that requires 'systems thinking':

> *"Systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'. It is a set of general principles ... it is also a set of specific tools and techniques." (Senge, 2006, p.68)*

Most approaches are based on the notion of complex adaptive systems (CAS) that incorporate feedback loops (positive and negative) that enable the system to adapt and evolve over time in response to 'attractors'. In leading change from a complexity perspective, as Dave Snowden (2014) suggests, "we manage the emergence of beneficial coherence within attractors, within boundaries".

Ralph Stacey and colleagues at the University of Hertfordshire challenge the somewhat realist nature of much thinking on CAS arguing that there is no such thing as a 'system', only patterns of relations. Their theory of complex response processes of relating (CRPR) places emphasis on the importance of narrative and conversations in creating and mobilising change, highlighting the inherently ambiguous and paradoxical nature of life in organisations. The implications for leadership development are summarised by Stacey's colleagues as follows:

> *"From the perspective of complex responsive processes of relating, leading leadership development involves encouraging radical doubt, enquiry and reflexivity as a way of developing*

[6] Note, the Kings Fund uses the term 'system' rather than 'systems' leadership. See https://www.kingsfund.org.uk/topics/system-leadership for further details of their work in this area.

the capacity of leaders to manage in circumstances of high uncertainty and ideological and political contestation." (Flinn and Mowles, 2014, p. 19)

The potential for systems leadership to deliver the transformation sought in health, social care and other public services, however, is far from certain. Indeed, reflecting on insights from the education sector, Hatcher (2008, p.28) claims that "[t]he dominant discourse of system leadership represents a technocratic managerial solution based on a claimed expertise in the management and leadership of change". This responds, perhaps to a tendency within this sector to underestimate the importance of power and politics, or to look beyond a relatively narrowly defined notion of the system and/or organisational outcomes. For public health to genuinely reap the benefits of a systems approach to leadership it would be advised to look well beyond linear and mechanistic notions of change to a living systems approach that recognises the importance of complexity, emergence and (inter)connection (Atkinson and Nabarro, 2019).

3.2 The changing context of public health in the UK

"While value is placed on the contribution of public health professionals within local government, it is being balanced against financial stringency across all local authority services, the likely demands associated with developing and maintaining specialist skills, and the demands placed on elected members to represent the interests of their constituents. The reforms have also demanded a rebalancing of the skill-set required of public health teams, with an increased need for negotiating, networking, communication and presentation skills, greater focus on financial and people management skills, and an ability to exercise political astuteness. Consequently, both the CPD of the existing public health workforce, and the recruitment to, and development of, the future specialist function are uncertain. This poses both threats and opportunities." (Jehu et al., 2017, p. 6)

Since the 2013 re-organisation of public health in England there have been five major studies of aspects of the UK public health system, funded by the National Institute for Health Research (NIHR), the English Department of Health and the Health Foundation. One study was a comparison of public health in the four UK nations (Barnes et al. 2018); four focused on aspects of the public health system in England (Hall et al. 2018; Hunter et al. 2018; Marks et al. 2017; Peckham et al. 2017). None of these focused specifically on systems leadership in public health, but all refer to it either explicitly or in some cases implicitly when discussing 'influencing'. Where it was mentioned, it often focused on the role of directors of public health; none discuss the role of registrars or new consultants in systems leadership or make any substantive reference to developing these roles. Similarly, a rapid Google Scholar search of 'registrars' or 'consultants in public health' and 'systems leadership' yielded no results, whilst searching on 'directors of public health' and 'systems leadership' generated more citations.

3.2.1 The public health systems across the UK

Barnes et al. (2018) give a useful comparative overview of the public health systems across England, Wales, Scotland and Northern Ireland. They conceptualise the public health systems as operating at four levels: European, UK-wide, individual UK nation and local/regional. A fifth international level could be added to this conceptualisation, e.g. membership of the World Health Organisation and international co-operation in areas like communicable disease control.

European-level policy can both support public health action (e.g. EU directive on tobacco control) or potentially impede public health action (e.g. the ability of health harming industries to appeal to the European Court of Justice against national level regulation).

Much legislation relating to public health remains at the UK national level, for example, the ban on tobacco advertising, raising the legal age to buy tobacco and banning sales from vending machines. The four UK health departments and their public health agencies communicate regularly and often co-operate, for example in supporting professional development initiatives like the Public Health Skills and Knowledge Framework (PHSKF). Other aspects of the public health systems also operate at a UK-wide level, for example the Faculty of Public Health (FPH) as the key professional body for training and examining public health specialists is UK-wide as are the General Medical Council (GMC) and UK Public Health Register (UKPHR) as the main professional regulators.

A key role for public health in all four nations is 'influencing' (particularly influencing debate, policy and commissioning) or 'partnership working' (Barnes et al. 2018). Financing and resourcing issues were highlighted across all nations and at all levels of the systems - linked, in part, to the status of public health versus healthcare and the wider economic context. Under-investment in prevention, funding cuts to public health (particularly in England), sustainability of key services were all highlighted as important influencers across the four nations (Barnes et al. 2018).

3.2.2 The public health system in England

Some legislation (e.g. the ban on smoking in public places) and most of the operational organisation of the public health function are determined at the individual national level, i.e. specifically by the UK Parliament for England, the Scottish Parliament, the National Assembly for Wales and the Northern Ireland Assembly respectively. Most research at the individual UK nation level has focused on England, with far fewer studies on Scotland, Wales and Northern Ireland (Barnes et al. 2018). Each nation has a national public health function, either formally part of the national health department or quasi-autonomous as in the case of Public Health England. There has been increasing divergence between the four nations in some areas, in particular England diverging from the other three nations in two key respects: the transfer of the local public health function from the NHS to local government in England in 2013 (whilst public health stayed with the NHS in the other three nations) and an increasing focus in England on a commissioning role for public health in a commissioner/provider split. There are some aspects of divergence in other jurisdictions too, e.g. training of registrars in NI is limited to doctors unlike the other three UK nations where public health training is open to candidates from a range of relevant disciplines.

All of the research studies reflected the turbulence and uncertainty created by the transfer of the local public health function to local government in England at the same time as an unprecedented squeeze on local authority funding due to austerity. Peckham et al. (2017) emphasised that despite some local variation, the overall trend was to reduce public health staffing with directors of public health expecting continued reductions in future. Reductions in consultant and specialist posts appeared to be continuing at a higher rate whilst the reduction in the number of directors of public health appeared to be slowing, probably reflecting the statutory duty on top tier authorities to employ a director of public health (DPH) but no similar requirement to employ consultants. Nonetheless, some directors of public health welcomed the greater ability to influence enabled by their local authority location. The Peckham et al. (2017) study does not mention systems leadership explicitly but like other authors there is more emphasis on the influencing role of directors of public health than consultants, with no mention of registrars.

Jehu et al. (2017) report some conflict and tension between the decision-making powers of elected counsellors in local authorities and the previous role of the DPH in the NHS as a decision maker. They report directors of public health now relying more on soft skills to influence decision making e.g. negotiating, networking and political astuteness. But the ability to influence members was very variable. There was growing trust between public health teams, officers and members over time in some of the councils they studied.

Hall et al. (2018) highlight the ambiguous, contested and changing nature of public health in England, in particular the lack of clarity and confusion about the relative roles of local authorities, clinical commissioning groups, PHE and other stakeholders in relation to public health. They argue that:

> *"Public health may be best placed to provide leadership for other stakeholders and professional groups working towards improving health outcomes of their defined populations, but there remains a need to clarify the role(s) that public health as a specialist profession has to play in helping to fulfil population health goals." (Hall et al., 2018)*

Although it does not use the term 'systems leadership' explicitly, in practice the article by Hall and colleagues sets out a strong case for the role of public health professionals as systems leaders; but it also identifies tensions and barriers to this in terms of contested conceptualisations of public health, professional identity and fragmentation of the field.

Key forums for public health systems leadership in England are intended to be local authority-based health and wellbeing boards (HWBs). Hunter et al.'s (2018) study focused specifically on HWBs; they found that many HWBs were yet to position themselves as the key strategic forum for driving the health and wellbeing agenda. In particular, many participants in their study said that Sustainability and Transformation Partnerships (STPs) had side-lined HWBs, since they were perceived as having a larger geographical footprint and a degree of power and influence which HWBs did not possess. Decisions were viewed by respondents as taking place elsewhere in the system by partner organisations and at different levels, rather than within the HWB. A key challenge was the absence of statutory powers and the need for HWBs to acquire 'soft power' as influencers and negotiators of change.

3.2.3 The role of registrars and new consultants in the public health system

None of the five studies discussed the role of consultants or registrars in public health in systems leadership explicitly. If any specific role was discussed it was that of directors of public health. In Barnes et al. (2018) for example there is no substantive mention of the role of registrars and the only mention of consultants refers to their likely diminishing number following restructurings, and therefore their need to cover a larger range of functions with a loss of specialist expertise; by contrast, there are a number of references to directors of public health playing a leadership or influencing role. Similarly Hunter et al. (2018) make no mention of registrars and consultants but regularly refer to directors of public health (who of course sit on HWBs by right) and in one instance refers to the importance to effective HWBs of a DPH who 'gets it'. Jehu et al. (2017) also focus on the role of directors of public health; they do not mention registrars and discuss consultants only in the context of one DPH who suggested that they did not need a team of such 'experts' in the local authority context, thus implying that consultants in public health were technical experts not skilled in the sort of systems leadership needed in the local authority context. This raises a long standing dilemma for public health: if public health is 'everyone's business,' and some other less costly staff may often do it with better skills in negotiating the political environments (i.e. systems leadership), then why pay for an expensive technical expert in the form of a consultant in public health?

Finally, Hall et al. (2018) also only discuss the role of the DPH specifically, with other workforce references usually more generically to 'public health professionals' and occasionally to 'public health specialists.'

3.2.4 Public health systems leadership: a synthesis from the five studies

Looking across the five studies, there are several commonalities and some key individual points of learning about the nature of systems leadership in the current public health systems in the UK generally, and in England specifically. Five key points stand out.

First, there are common and widespread calls from study participants and researchers for more focus and development of systems leadership by public health professionals, in particular directors of public health but also generically often including public health consultants and specialists.

Second, there is general recognition of the degree of complexity and uncertainty regarding systems leadership, and the constraints on public health professionals offering systems leadership, particularly in England where public health specialists are having to learn to negotiate with local authority politicians as a new key group of decision-makers in public health, and where the results of austerity and the Health and Social Care Act 2012 have led to continuing organisation flux and often the fragmentation of key public health-related organisations and services.

Third, the research has disproportionately focused on directors of public health as systems leaders, and has generally not considered the role consultants, other specialists, registrars or indeed public health practitioners may play in systems leadership.

Fourth, there is some questioning in local authorities in England whether consultants in public health are necessarily the best people to provide systems leadership as (a) they are seen as technical experts without necessarily the right skill set, and (b) they are very expensive as they are on relatively high salaries compared with other local authority staff.

Fifth and finally, to the extent that these studies have focused on systems leadership, the focus has been largely on systems leadership at the local level. Barnes et al. (2018) in their review of the literature mention a few studies reporting on examples of national systems leadership in England and Scotland respectively, but the four English empirical studies all focused on local authority-level case studies. Although PHE is regularly mentioned as an actor in these case studies, there is no sustained investigation of systems leadership within the agency. Given that PHE staff need to use systems leadership skills to influence national politicians and other policy makers, and in the same way that local public health professionals need to use such skills to influence local politicians, this seems a significant omission to our knowledge of the context for developing systems leadership. If anything, the challenges of systems leadership may be more complex at a national level due to the wider range of stakeholders, and in particular the influence of vested commercial interests (e.g. tobacco, alcohol, food industries) who are more likely to operate at a national than a local level. PHE employs a significant proportion of all consultants in public health in England, so understanding how systems leadership works in this national agency will be important in preparing registrars and new consultants for the variety of contexts in which they may find themselves working.

3.3 Training and development for UK public health professionals

"Without training and clear guidelines on systems-based implementation, then practitioners resort to their previous experience in delivering multi-component reductionist-style interventions. Arguably, this is the systemic issue that is slowing, or muddling, public health's attempts to engage with systems-based approaches." (Carey et al., 2015)

3.3.1 The landscape of public health training and development in the UK

Responsibility for the design, delivery and accreditation of public health training and development in the UK is shaped by a number of agencies/organisations/individuals, as summarised below:

- The **General Medical Council** (GMC) approve curricula set by Royal Colleges and Faculties. They also quality assure training e.g. by visiting Health Education England (HEE) local offices ('Deaneries' as they relate to medical training) and by conducting an annual registrar satisfaction survey.
- The **Faculty of Public Health (FPH)** is a faculty of the Royal College of Physicians. The FPH sets the curriculum and oversees the training of public health registrars, and ensures the continuing professional development of registered specialists.
- **Health Education England** (HEE) local offices manage the delivery of postgraduate training and must meet GMC standards.
- HEE local office medical training is led by a **Dean**.
- The Dean delegates specialty training oversight to a **Head of School**.
- Each Head of School (e.g. the **School of Public Health**) has in place one or more **Training Programme Directors** who manage training programmes with the help of **Specialty Tutors**.
- The overall supervision and management of a registrar's trajectory of learning and educational progress during a series of placements is provided by an **Educational Supervisor**.
- In individual placements training is supervised by a **Clinical or Activity Supervisor**.
- FPH interests in training are represented by **Regional Advisors/Specialty Training Committees**.

This creates a complex web of interactions and interdependences, exerting influence from local to national level as summarised in Figure 2.

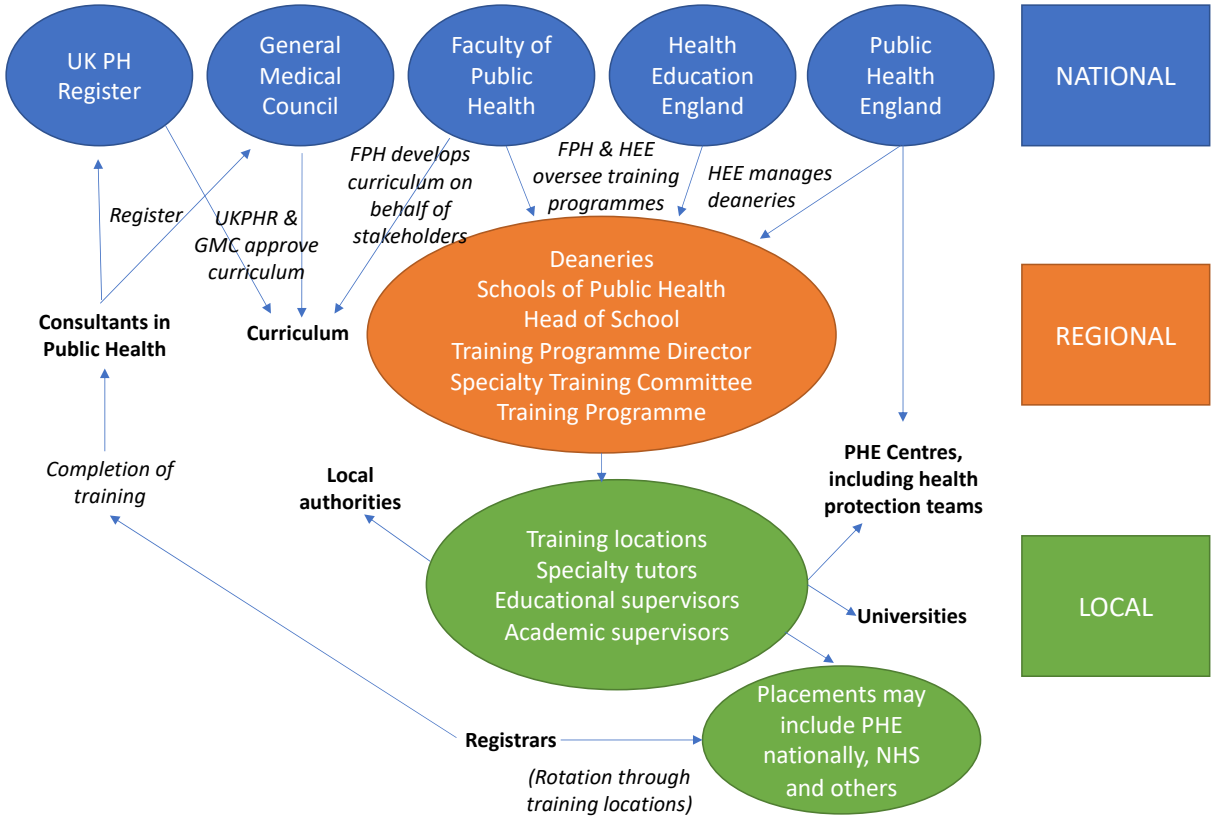


Figure 2 – Summary of public health training structures in England

Whilst there are variations in the positioning of public health relative to the NHS and local authorities across the UK (see section 3.2.1) there is a common curriculum for registrars specialising in public health that is overseen by the FPH[7]. The curriculum was last revised in 2015 and comprises ten key areas, each of which is associated with competencies, milestones and outcomes, as listed below.

1. Use of public health intelligence to survey and assess a population's health and wellbeing.
2. Assessing the evidence of effectiveness of interventions, programmes and services intended to improve the health or wellbeing of individuals or populations.
3. Policy and strategy development and implementation.
4. Strategic leadership and collaborative working for health.
5. Health improvement, determinants of health, and health communication.
6. Health protection.
7. Health and care public health.
8. Academic public health.

[7] See https://www.fph.org.uk/media/1131/ph-curriculum-2015.pdf

9. Professional personal and ethical development (PPED).

10. Integration and application of competences for consultant practice.

Of these, key areas 4, 9 and 10 have the closest relationship to systems leadership, although it is not mentioned explicitly anywhere within the current curriculum.

3.3.2 Conceptual underpinnings of the public health curriculum

The Public Health Specialty curriculum (FPH, 2015) focuses on the development of the knowledge, skills, attitudes and behaviours expected of a public health specialist. Although not explicitly stated, two knowledge paradigms or models of health currently underpin the curriculum:

- **Biomedical model** – deriving theory and practice from medicine, epidemiology, microbiology and other life sciences.
- **Social determinants model** – deriving theory and practice from the social sciences including sociology, social medicine, psychology and cognitive science, behavioural science etc. and often summarised in the so-called rainbow model of health (Dahlgren and Whitehead, 1991).

These two models of understanding health and its influences are in a state of constant flux and tension, played out in multiple ways through the many professions, organisations, groups and individuals who participate in public health action. Similarly, this tension is reflected in the extent to which each paradigm informs the various knowledge areas of the curriculum, for instance Key Area 1: Public Health Intelligence, draws heavily on a biomedical model, others e.g. Key Area 5: draw predominantly on a social model of health and others combine the two models to greater and lesser extents.

It is notable however that there is no reference in the curriculum to the relevant knowledge base for leading change in complex adaptive systems: namely systems theory and complexity science. Whereas both the biomedical and the social models of health tend to follow linear or summative cause-and-effect explanations, understandings from systems dynamics and complexity are markedly distinct and can be understood as representing a new paradigm of scientific thought (Rutter et al., 2017). Features of CAS include feedback, emergence and adaptation. Multiple inputs, rather than being summative, are in a constant state of movement and mutability. Patterns, relationships, information flows and change are more important than fixed measurements either in time or place.

> *"A shift in thinking is required, away from simple, linear, causal models, to consideration of the ways in which processes and outcomes at all points within a system drive change. Instead of asking whether an intervention works to fix a problem, researchers should aim to identify if and how it contributes to reshaping a system in favourable ways. Public health actions often exert their effects over long time periods, so researchers should track proximal, intermediate and distal processes and outcomes to avoid mistakenly believing that interventions are ineffective, when they have merely judged them on the wrong terms and over the wrong timeframes." (Rutter et al., 2017)*

In short, under a complexity lens, thinking about cause and effect is so radically different from earlier approaches that an entirely new model of evidence for informing public health action is called for. This model should aim to complement rather than replace the current ones. As Rutter and colleagues note, public health needs to embrace CAS if it seriously hopes to address the complex upstream determinants of health rather than simply tackling downstream health outcomes. The result of failure to address this

lacuna is that much public health action to reduce health inequalities is increasingly tending towards individual level interventions, even while experts simultaneously advocate the need for the opposite: the so-called 'lifestyle drift' (Popay, 2010).

> *"Achievement of this kind of shift from a linear framework to one that embraces complexity will require substantial changes to the ways in which research is funded and conducted, academic work is valued and policy is formulated. Unless the wider scientific community engages appropriately and meaningfully with these complex realities, many public health challenges, from emerging infections to non-communicable diseases will remain intractable." (Rutter et al., 2017)*

As commentators note (e.g. Carey et al., 2015, Rutter et al., 2017, Senge et al., 2015), however, a significant amount of further research is required before complexity science can provide a detailed evidence based to inform public health policy and practice, a fact that implies a strong imperative for response from the research community and their funding bodies.

3.3.3 Evidence for practice

An underdeveloped evidence base is however no reason for the public health community to ignore the implications of what is already known about creating change in complex environments. As both Carey et al and Rutter et al. comment, failure to acknowledge the implications of complexity is creating responses that are reductionist, simplistic and often ineffectual.

> *"Oversimplification of these problems to fit inappropriate models of research and practice dooms such research and policy implementation to repeated failure. Existing approaches to the generation and use of evidence remain necessary, but are not sufficient." (Rutter et al., 2017)*

It is relevant to note that such comments are not restricted to the academic community. Within the stakeholder engagement aspect of this project (see Chapter 4) our informants also suggested that practice in the field, while paying lip service to systems leadership, is actually very limited in the extent to which it actually provides for systems leadership learning.

Arguably the failure of the public health community to acknowledge and keep abreast of complexity theory and systems dynamics is playing an important role in current threats to the authority of public health. If the knowledge base of public health action is seen to be irrelevant or too theoretical for local actors, critics might justifiably resort to such claims that 'we're all public health now' and question the role and authority of so-called public health experts as change agents (Jehu et al., 2017).

The current situation whereby scant knowledge of complexity theory is accompanied by widespread misunderstanding in the field of what systems leadership implies in practical terms, presents both threat and opportunity to the specialty of public health. One could speculate as to whether historical threats to public health power have not also occurred when the underlying knowledge paradigm has been called into question e.g. when the Medical Officers of Health (MOsH) position was abolished in 1974 (changing focus from communicable to non-communicable disease), and later in 1988 when Acheson (1998) was commissioned to review the role of community medicine following the Wakefield and Stafford infectious disease outbreaks (medical versus social models of health in rising tension).

In their systematic review of the state of systems science research in public health, Carey and colleagues conclude that public health has "yet to take full advantage of the analytical approaches – or toolbox – provided by systems science" (Carey et al., 2015). Such approaches, derived from the field of systems

dynamics, include methodologies such as systems modelling, which has been applied in several public health scenarios around the world. Nevertheless, as Carey and colleagues comment, in many cases where practitioners have claimed to apply such methods, there has been little evidence of a minimum standard of accountability and repeatability. If systems dynamics modelling approaches are to be used as evidence for public health policy, there need to be established processes for verifying their scientific and methodological rigour. Equally, systems based methodological approaches should be seen as a complement to and not a replacement for current methods in public health.

Whereas using modelling techniques to develop policy may appeal to the positivist mindset, this creates an inevitable tension in a field where public health policy is seen as being created in a fluid way by networks of involved players. Carey and colleagues suggest that in these settings so-called 'soft system' methodologies may be as useful for public health as the 'hard' methods such as modelling. Soft system methodologies are based on the idea of the system as a metaphor, with its associated features of emergence, feedback and adaptation (see also section 3.1.3). It is the power of the system as metaphor which can facilitate understanding, communication and integrative action from diverse parties on complex issues (Carey et al., 2015).

Work is currently ongoing in UK public health academia to develop a new model of evidence to inform public health practice and policy[8] but as the authors themselves report, building such an evidence base will be both costly and time consuming to develop. And the public health community needs to take action now.

It is beyond the scope of this report to undertake an in-depth critical analysis of the current public health training curriculum. Nevertheless, our literature review and consultation with key informants suggest that to fully grapple with the challenge of systems leadership, there is an urgent need for an expert review of both approach and content of the curriculum, applying a 'complexity lens' as the underlying conceptual base. In addition to expertise in complexity science and systems dynamics, experts in topics such as ethnography, organisational development, psychology and adult pedagogy might also be usefully involved in such a review.

It is important to note however that the application of systems science to public health practice is not a golden key but rather another tool in the box. As Carey et al comment:

> *"A closer analysis is needed of how public health conceptualises policy change, and the ways in which systems science can and cannot feed into this." (Carey et al., 2015)*

As a stop-gap to developing the evidence base, it may be useful to try experiential learning interventions that have been used in other settings to build capacity for working in complex systems (see, for example, Atkinson et al., 2015, Holman et al., 2007). Such learning and development might include:

1. Understanding and mapping dynamic flows, feedback, patterns, relationships, adaptation and emergence in systems, based on complexity principles and systems dynamics.

2. Experience and coaching in group convening, dialogue, group system mapping and co-creation skills – at all levels of the system.

3. Support, mentoring and experiences tailored to develop mind-sets and skills to:

[8] See https://www.health.org.uk/publications/the-need-for-a-complex-systems-model-of-evidence-for-public-health

- Move as effective and influential change agents at all levels of a system – becoming more effective in engaging with and involving grassroots organisations and not only working at board and policy levels.
- Understand the value of ethnographic fieldwork and community involvement in enabling information flow throughout the system.
- Create strong and trusting relationships and networks throughout systems and sub-systems – as several informants commented, time constraints on current registrar placements work against the development of trust, extensive networks and community insights.

Further suggestions include[9]:

- Undertake an in-depth review of the implications for the public health specialty curriculum of applying learning from complexity science and systems perspectives on public health evidence.
- Incorporate systems leadership and skills (including systems thinking and complexity science) into the public health specialty curriculum and into public health Masters programmes.
- Public health community to support and participate actively in the development of an evidence base for public health action, based on the application of a systems perspective.

3.3.4 Systems leadership development for public health professionals

As mentioned in section 3.3.2, whilst the public health specialty curriculum underpins the training of registrars in the UK it does not directly refer to systems leadership and is based on a biomedical and social determinants of health, rather than systems and complexity, approach. Despite this, opportunities do exist for public health professionals to engage in systems leadership development programmes from other providers, although uptake below DPH level is limited.

A useful review was undertaken in 2017 by the Leadership Centre on behalf of the Academy of Public Health – London and the South East to (amongst other tasks): identify existing and planned products and programmes that system leaders can access, make recommendations on how to build on existing resources, and make practical suggestions on how to meet gaps identified[10]. The final report (not currently available in the public domain) identifies key aspects of a systems leadership development approach, as well as a useful range of resources and provision (Academy of Public Health, 2017). A series of appendices (6-8) summarise existing training programmes with systems leadership content that are accessible to public health professionals amongst others. Those providers offering programmes with a significant level of systems leadership content include:

- Common Purpose - https://commonpurpose.org
- Kings Fund - https://www.kingsfund.org.uk/courses
- Leadership Centre - https://www.leadershipcentre.org.uk

[9] We have included a range of suggestions from our consultations in this and the following sections, but make our own specific recommendations in Chapter 6.

[10] For an overview of this work see https://www.hee.nhs.uk/our-work/population-health/academy-public-health-london-south-east/system-leadership.

- NHS England, integrated care pioneers - https://www.england.nhs.uk/integrated-care-pioneers/
- NHS Improvement - https://improvement.nhs.uk/resources/tcsl-programme/
- NHS Leadership Academy - https://www.leadershipacademy.nhs.uk/programmes/
- Open University - http://www.open.ac.uk/courses/choose/systemsthinking
- University of Birmingham, with PHE - https://www.birmingham.ac.uk/schools/social-policy/departments/health-services-management-centre/courses/aspiring-public-health-leaders-programme.aspx
- Virtual Staff College, leadership for change - http://leadershipforchange.org.uk

A range of locally based programmes from the NHS Leadership Academy, universities and other providers were also identified, along with a number of useful online resources. Such programmes can be invaluable in building local networks, as well as building awareness of the challenges/issues facing other stakeholders within the wider system in which public health operates, and provide an important resource in terms of upscaling the availability of systems leadership development provision.

4 Stakeholder consultation and engagement

Alongside the literature review, as outlined in the previous chapter, we engaged with a range of key stakeholders in order to gain an understanding of the current landscape of public health in the UK, the nature and purpose of systems leadership, training and development opportunities for registrars and consultants in the UK, and recommendations/suggestions for improvements.

As summarised in Table 1, a total of 29 stakeholders from across public health contributed to this phase of the research, including 15 semi-structured interviews, a focus group with eight public health registrars and consultants, a co-design workshop with four members of the research team and four external participants, and scoping discussions with a PHE director and registrar[11].

Role	Number
Public health registrar	10
Public health consultant	2
Director of public health	3
Public health principal	2
PHE manager/board member	4
FPH manager/board member	3
Head of school/postgraduate dean	4
CCG clinical lead	1
TOTAL	**29**

TABLE 1 – Stakeholder consultation and engagement[12]

Detailed notes were produced following each engagement, which were then analysed for key issues related to systems leadership development and the wider public health environment. Four main thematic areas were identified, including:

1. The nature and purpose of systems leadership;
2. Development needs/opportunities for registrars and consultants;
3. The enabling environment;
4. Wider contextual factors impacting on public health.

For each of these areas a number of sub-themes were identified where interventions could be made and/or further work conducted in order to help enhance the quality and capacity for systems leadership in UK public health. Figure 3, inspired by the VSC integrated framework (see Figure 1), provides a visual illustration of these themes/issues and an overarching structure for reporting the outcomes of the stakeholder consultation and engagement presented through the remainder of this chapter.

[11] The names of contributors have not been included in this report in order to protect confidentiality when providing quotes.

[12] Please note, several contributors held multiple roles spanning PHE, FPH, HEE and others. In these cases we have classified them according to their most substantive current role to prevent double-counting.

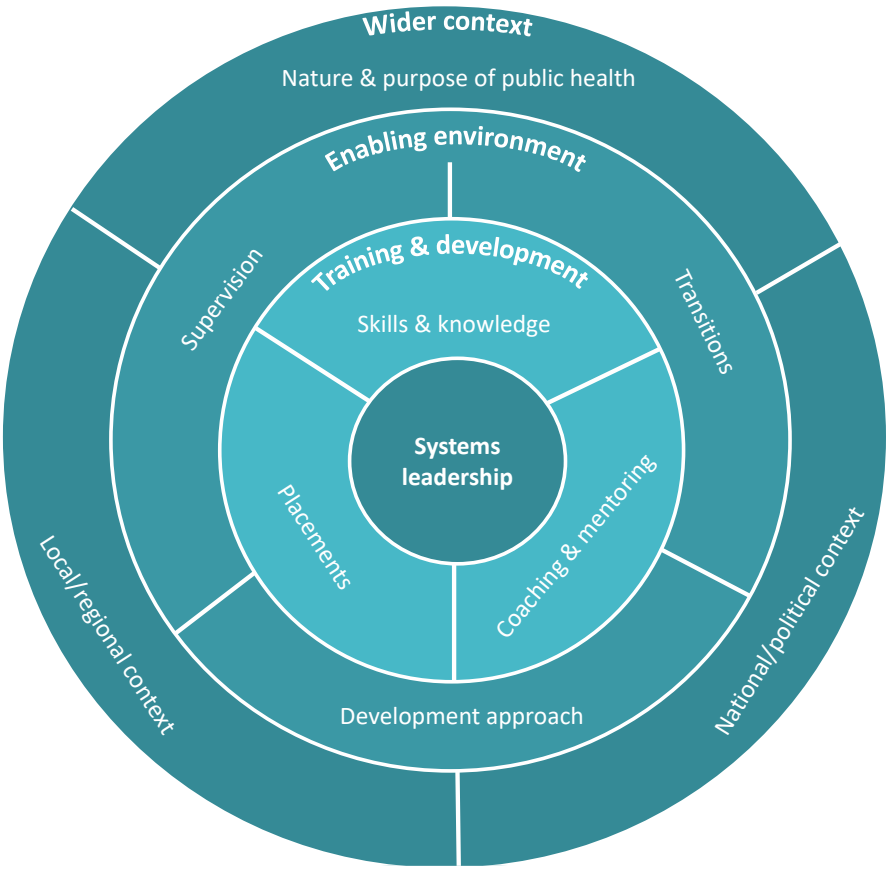


Figure 3 – Thematic analysis of key issues related to developing system leadership in public health

At the centre of this diagram is the concept of **systems leadership** itself. Whilst there was widespread agreement across informants that this is a necessary and appropriate approach within public health, it was suggested that there is inconsistency and ambiguity around how the concept is understood and deployed, which may cause confusion and unintended consequences.

The second ring highlights current **training and development** opportunities where public health registrars and consultants can experience and develop their capacity for systems leadership. This includes **skills and knowledge**, **placements** and **coaching and mentoring**, which comprise the main elements of the 70:20:10 approach that underpins the current training and development strategy of PHE.

The third ring includes aspects of the **enabling environment** within which public health training and development is provided that support or constrain the capacity of registrars, consultants and other public health professionals to develop and enact systems leadership. This includes the overall **development approach** (as embedded within the curriculum and professional accreditation process), the quality and nature of **supervision** and **transitions** into and following formal training and between roles.

The outer, fourth, ring highlights key aspects of the **wider context** that impact on expectations, opportunities and resourcing for systems leadership within public health. These include the changing **nature and purpose of public health** itself, as well as the **local/regional context** in which public health operates and the **national/political context** that dictates resourcing, targets and the interface with other health and social care services.

Each of these areas will now be discussed in turn.

4.1 Nature and purpose of systems leadership

The first thematic category relates to understandings around the nature and purpose of systems leadership in public health.

> *"Systems leadership has always been a focus of public health – e.g. at city, health authority, country levels – it's about mobilising partners to work together. The Crick Review in 2015 explicitly identified a need for Systems Leadership in public health…. The term 'systems leadership' has seen increasing use in PH over recent years. There is some variation in understanding but mainly about scale/focus." (Senior Public Health Professional)*

Despite variations in background there was wide-spread agreement amongst participants about the key features of systems leadership, including:

- Leading across and beyond organisational boundaries;
- Leading without power or authority;
- Boundary spanning, being the 'glue';
- Creating change whilst not being in charge.

> *"On a non-academic front the term [systems leadership] means to me, a really significant part of the job that I do and which kind of frames what I think it is, is about influencing and leading across organizational boundaries where I wouldn't necessarily have direct authority. To me it's about where the part of the role I think I possibly do a lot of, it's about making sure that where possible, people are thinking about the wider perspective of things, how things are linked together in the system, rather than just thinking about this particular part of the system, trying to encourage people to think about the influence across the whole, and on the public rather than just a specific service area." (Senior Public Health Professional)*

It was recognised that systems leadership occurs at all levels, not just the DPH and/or other senior leaders. Whilst respondents were able to identity 'system leaders' it was recognised that there may be significant variability between them and hence not a fixed set of skills/competencies.

> *"It's about people being more aware of their own feelings and the impression they create on other people and at the same time appreciating where behaviours are being adopted by others, where the cause is not obvious, or the motivation is not obvious or is not what they're expressing." (Senior Public Health Professional)*

> *"Good system leaders are listeners, good observers. I think they're empathic, I think they're charismatic, I think they're driven but not in a pushy way. I think you can pick it up from people. I think there's an interest in the wider world, a desire to know more about other people's perspectives and how to get a win:win solution." (Senior Public Health Professional)*

It was suggested by many interviewees that, given the complex nature of public health interventions, there has long been a need for public health professionals to act as systems leaders. It is only relatively recently, however, that this terminology has been adopted and it is still not widely used across the sector, with inconsistencies in terms of how it is interpreted and deployed (e.g. focus on level/scale).

"Potential is for improving population health – [systems leadership] directly relates to the primary purpose/aim of public health… Important to help people see the benefits of bringing different players together around a single purpose." (Senior Public Health Professional)

There was also some constructive critique of the term 'systems leadership' as it:

- May create a false dichotomy between task-orientated and systems focused projects;
- Suggests that senior leaders operate in this way, whilst in reality there are big differences in approach;
- The notion of the 'system' can appear nebulous and confusing – how systems are defined and understood depends largely on the experiences/agendas of the stakeholders who are involved.

It was noted that the ability of public health registrars to witness and experience systems leadership in action largely depended on their supervisor and/or placement. Suggestions for what could be done to provide greater clarity on the nature and purpose of systems leadership in public health included:

- Create a shared definition of systems leadership in public health, with illustrative examples;
- Develop a repository of resources and materials on systems leadership that are relevant and accessible to the public health audience (registrars, consultants, supervisors, etc.);
- Review options for formal training on systems thinking, complexity and leadership and ensuring that these aspects are embedded throughout all specialty registrar and supervisor training programmes;
- Develop a forum for debate, research and the sharing of good practice on systems leadership in public health (e.g. via journals, conferences, networks, etc.).

4.2 Systems leadership development opportunities

The second thematic category related to current and potential opportunities for public health registrars and consultants to develop their understanding and capacity for systems leadership. Three main areas were identified: skills and knowledge, placements, and coaching and mentoring.

4.2.1 Skills and knowledge

The public health curriculum provides the overarching framework for training and development of public health specialists in the UK. The curriculum update in 2015 was regarded as a positive development that incorporated a range of opportunities for systems leadership development, particularly in key areas 4, 9 and 10.

Despite these opportunities, however, many stakeholders suggested that the competency-based nature of the curriculum creates a tendency towards 'box ticking' and a focus on acquiring technical skills, knowledge and experience (linked to specific areas of public health, such as epidemiology, health protection and infection control) over rather more systemic, yet abstract capabilities of systems leadership (such as developing relationships and trust within multi-stakeholder collaborations, navigating complex political and power dynamics to achieve alignment and commitment to a common cause, and empowering and enabling minority voices to be heard).

"I think this comes down to a big problem that actually our training doesn't necessarily set us up to be leaders as much as it should. It sets us up to be able to complete a wide variety of small,

discrete bits of work, but actually a lot of the skills that should stretch across everything we do are not so focused on." (Public Health Registrar)

Participants suggested that such cross-cutting expertise could be more explicitly incorporated into the public health curriculum when it is next updated, with particular clarity and guidance around expectations for how registrars and their supervisors engage with the content and learning outcomes. In particular, it was suggested that there is a need to broaden the basis for assessment and to create space for reflexive learning from experience through approaches such as action learning and critical thinking.

"It's what we were saying, what does a system leader look like? What are the qualities of a system leader? Would you know one if you saw one? I think, I would recognize them, but they are not that common. So we're aspiring to something that isn't common, and we're not necessarily been trained in it, and educational supervisors don't know about it. And ...you know, I think we've got a bit of a gap haven't we?" (Senior Public Health Professional)

It was noted that whilst many people have a working knowledge of systems leadership far fewer have a sophisticated understanding of underlying principles and concepts (such as complexity science, systems change and adaptive leadership), as well as the challenges and limitations of different theories and approaches. This implies a need to develop awareness of the nature and scope of the evidence base on systems leadership and the implications for how a specialist in public health derives his/her authority and exerts influence (see Chapter 3).

Many people stressed that systems leadership is more of a mindset than skills or knowledge. This is reflected in the qualities of systems leaders identified in the VSC research described in section 3.1.1, which talks about ways of feeling, perceiving, thinking, relating, doing and being. Interviewees suggested that systems leaders need to be able to persuade, influence, and mobilise change without being in charge. This requires a flexibility of style, persistence and resilience to keep going in the face of adversity that links to professional values and a sense of 'personal mastery'.

"The sort of mindset is a real focus on wanting things to be better in some way and wanting to be able to change things. It's essentially having your set of values and being prepared to slowly chip away at things in the system, with your overall goals of better outcomes in mind. And flexibility is important. You don't want to come in with fixed ideas of how it should be done, more just what it should look like at the end." (Public Health Registrar)

In addition, it was suggested that more attention and support could be given to the development of practical skills such as people management, budget management, project management, time management and delegation[13] that, whilst not 'leadership' skills per se, enhance the effectiveness and performance of people in leadership roles and would particularly help ease the difficulties created by career transitions (see section 4.3.2) where there is a step change in levels of authority and responsibility.

"As well as the kind of leadership skills, there is also the toolbox of routine management, which local government officials particularly and local councillors find that we're lacking in knowledge and application on." (Senior Public Health Professional)

[13] As many Local Authorities, NHS and Civil Service employers already provide training and development in these areas the issue may be one of uptake and the opportunity to put this learning into practice rather than the availability of training per se.

Suggested actions relating to skills and knowledge included:

- Develop online learning resources with examples, cases, videos, readings, etc.
- Apply a complexity approach to develop sensitivity and awareness of the ways in which systems leadership happens at all levels not just at the top, and the leverage points that exist at different points in the system.
- Complement individual development and assessment tools/approaches (such as individual assignments, psychometric profiling e.g. MBTI, emotional intelligence) with more collective approaches (such as group assignments, team-based profiling e.g. Belbin and 360-degree appraisal).
- Expose people to discussions and experiences beyond their usual sphere of engagement in order to raise awareness of the plurality of perspectives on different issues and to develop their capacity to cope with uncertainty, ambiguity and paradox.
- Ensure access to opportunities to acquire and apply routine management skills such as project management, budget and financial management; time management; decision making, priority setting, performance management and conflict management.
- Develop skills/abilities for collaboration, including inter-personal communication, dialogue, negotiation, advocacy, co-creation, and facilitation.
- Create spaces for action learning and individual/group reflection.

4.2.2 Placements

Following on from the points outlined above, all informants stressed the significance of placements within the public health training scheme and the importance of ensuring that these include opportunities for engaging with systems leadership. A number of inter-related issues with the current approach were highlighted, including choosing a placement, duration of placements, and level of responsibility.

Choosing a placement

In terms of the first issue it was highlighted that not all placements are equal, with some offering far greater opportunities for learning about systems leadership than others.

> *"First and foremost, they need to be placed in an environment where people are doing systems leadership and I'm not sure how many places are genuinely doing high quality systems leadership… They talk about it as though they are, but I don't know how many places are actually doing it well. I haven't seen that many examples of it myself." (Senior Public Health Professional)*

It was highlighted that whilst technical based placements within the NHS are popular because of their capacity to develop understanding and awareness of the core skills of a public health professional, the complex, contested and collaborative environment of local authorities and community engagement were seen to offer rich opportunities for developing systems leadership capacity.

> *"Local authorities are really good places to learn about system leadership, because they are the curators of place. You could choose your placement and align your learning objectives, depending on where that placement is and what aspects of leadership and management you are*

hoping to become skilled at. You can't become skilled in everything in one setting." (Senior Public Health Professional)

Many respondents stressed the importance of promoting placements where people work across boundaries/systems/stakeholder groups, such as in STPs, integrated care systems, health and wellbeing boards, children's health, crime and disorder partnerships and community-engagement initiatives. It was argued that registrars need to see systems leadership role modelled and to try it out themselves, with several respondents emphasising that development opportunities need to be immersive in order to develop a sensitivity and appreciation of the different cultures across the NHS, Local Government, etc.:

"[I see] both the huge need and the considerable challenge for systems leadership given that Health and Social Care are two very different cultures in the system… [it's like] one part playing Chess and the other Draughts given that … both parts play by different rules: the NHS can't be seen to fail and so changes its objectives when it needs to, to avoid describing failure; whereas in Local Government they can amend services, shut or open them reasonably readily." (Senior Public Health Professional)

In terms of choosing a placement, however, it was noted that registrars and their supervisors have a limited range of reference and need encouragement and advice in order to engage with things beyond their current experience, as well as support and guidance to negotiate the practical aspects of placements (such as location, timing, work environment, supervision, etc.), in order to enable a strategic approach to developing systems leadership capacity throughout their career.

Duration of placements

Whilst there was recognition of the value of moving between placements in order to gain exposure to different ways of working, the relatively short duration of some placements was regarded by many as a limiting factor in terms of the opportunities for registrars to develop advanced systems leadership abilities. Interviewees felt that the tendency towards short-term, project-based secondments did not allow sufficient time to develop the trust and relationships necessary for effective systems leadership.

"We're not there for long enough. You need to develop a bit of a relationship and rapport not only with the people you're working with, but with the other organisations that might be considered [part of] the system and that's a hard thing to achieve. I'm not sure you can do it in six months, nine months, one year." (Public Health Registrar)

"It takes relationship development and it takes time to gain the trust and recognition within the system. And actually you need to be staying in a placement for quite a while to be able to achieve that. I think for us also over the last few years we've had a number of specialist registrars who were doing a part placement with us part time and then doing something else part time as well. That's really difficult to do because the trouble is you miss all of the key meetings and things like that. So I think doing a placement part time isn't helpful - you need to dedicate a reasonable chunk of time to the placement to get anything out of it." (Senior Public Health Professional)

One suggestion was that a more in-depth and longer placement could be offered in the final year of training where registrars could spend a prolonged period acting up as a consultant[14]. This would support the key transition between years four and five of the training programme, enabling people to complete their formal training as a skilled systems leader with the necessary experience and credibility to take on the demanding role of public health consultant.

> *"It's not going to be done quickly, this is a slow burn. We expect this to take you two, three, four years to do this. And during that time, you will be able to supplement your practical learning with a set of theoretical elements. So, at the end of it you effectively will produce something, which is a description of how you have influenced and led the system in relation to this particular issue. Something like that… very different, but that sits alongside on a different timeline, but actually gives enough time and space to be able to experience and understand complexity whatever system it is." (Senior Public Health Professional)*

Level of responsibility

Arrangements within local authorities mean that registrars are not always given exposure to responsibilities, political challenges, or given freedom to experiment and take a lead. This may be a combination of both the limited time for them to develop relationships (as outlined above) as well as a fear amongst those supervising them that they may make a mistake.

> *"I think it's also because you have to have tremendous trust in somebody because, you know, if you're working there and you know, there's a chance that this registrar's, going to come along and mess up the relationships that you've had for years. So you do have to have that trust and it helps if the system is used to having registrars around." (Senior Public Health Professional)*

> *"I very much got the feeling that registrars were kept very, very separate from any other parts of the local authority, and certainly we weren't allowed any contact with the political aspects of the local authority which I think is a real shame. But I think at the time it was done, possibly because the DPH, it was [his/her] style of working, and possibly just because there was lack of confidence in us behaving as they want us to. I don't think they wanted us to make mistakes, to shine a bad light on public health. And so that for me was the big barrier. Just being shielded from all of it." (Public Health Registrar)*

Alongside the need to develop practical management skills, as outlined in section 4.2.1, this suggests that consideration should be given to how placements can be devised and supported to ensure that registrars can develop the direct hands-on experience that they will need if/when they are appointed as consultants.

> *"I think it would be gradual, I think in part it's about exposing them to some areas, maybe not whole systems leadership to begin with, but maybe like I'm saying earlier, maybe topic based or geographically based system. So I think there are ways of doing it gradually before you give them exposure at a very senior level, which actually probably would be quite threatening if we're not careful. And I think also because there are, certainly locally, actually lots of opportunities to shadow people that would be very engaged in system leadership. So we would use that kind of*

[14] The current public health specialty curriculum does encourage registrars to 'act up' as consultants in their final year of training but it is unclear how much this actually happens in practice, or whether it is for a long enough period of time given the comments in this section.

incremental approach to expose them probably at a lower system or smaller system level before then exposing them to have bigger and more senior level of system leadership." (Senior Public Health Professional)

Suggested actions relating to placements included:

- Develop a directory of placement opportunities that provide strong opportunities for engaging with systems leadership.
- Use systems mapping exercises to help registrars/consultants understand the architecture of systems and develop their awareness of the spatial (place-based) dimensions of systems working beyond professional boundaries.
- Offer more placements in grassroots community organisations, voluntary groups, non-native English-speaking groups etc. that expose registrars to different levels of working especially for those with little community-engagement experience.
- Explore mechanisms for monitoring/capturing learning about systems leadership during placements and using this to guide future development activities.

4.2.3 Coaching and mentoring

It was agreed that coaching and mentoring is an important aspect of learning and development for registrars and consultants that can create an important bridge between formal and work-based learning. The potential benefits, however, are largely dependent on finding a suitable coach/mentor.

"I think to get good access to practice in systems leadership, you maybe need to work with people who do not necessarily feel confident, but are confident that they are doing that sort of work. So they can mentor you through it, help introduce you, guide you, because I don't think it's something that you can just get thrown into and figure it out very quickly without a little bit of support." (Public Health Registrar)

There were some differences of opinion around the relative value of coaching versus mentoring, with coaching seen as more closely linked to personal skills development and mentoring more about being offered guidance by a trusted ally with knowledge and experience of the sector.

"I am a great enthusiast for coaching, which is more accessible potentially, and more easily delivered because coaches don't have to be experts in public health. It's more like kind of psycho analysis - they ask you questions in order for you to come up with your answers. Whereas mentoring you might say, well, you might want some serious advice about what I need an X policy to look like. Or you might want to know where you went wrong with your outbreak investigation [..] Mentoring is something that I've done from time to time, when people ask me, but it's very hit or miss and if you were to say we require it, where would we get the people who can do it?" (Senior Public Health Professional)

"I think mentoring is helpful because you do have the option to say, Well, here's a suggestion or have you thought of, or I used to do it this way. Whereas with coaching, particularly with inexperienced people, you know, helping people find the answers from within, if they didn't have the answers, they don't have the answers [...] So I think sometimes mentoring is more useful

because you're still using coaching techniques, but you have got the option of bringing your experience to bear." (Senior Public Health Professional)

Such relationships can last for many years, with benefits for the coach/mentor as well as the coachee/mentee. It was noted that coaching and mentoring may be particularly valuable to new consultants who face significant work-based challenges yet are no longer part of a formal development programme.

Concerns were raised, however, about the availability of both experienced coaches and mentors and their capacity to take on additional responsibilities. Participants stressed the value of being supported by someone with significant systems leadership experience, whilst noting that such people were relatively few and far between. This raises questions about the scalability of provision, as well as funding the fees/time associated with this kind of support.

"Somehow, we'd have to do a business plan with mentors' fees, not necessarily as fees, but reimbursing employers with timeout to do it and to be trained in it. So it's a big, big question. Coaching is obviously an expensive thing, but probably more easy to find the people out there in the semi-commercial world who were able to do that. But in [my region] I had coaching for about three years for all my senior staff, probably a budget of £30k a year for it, but whether it's repeatable or not, I don't know." (Senior Public Health Professional)

Alongside, and associated with, this there would be value in reviewing training and development provision for coaches and mentors themselves and the potential to create a directory of accredited/experienced mentors/coaches. Such provision might also consider how registrars, consultants and directors of public health could develop their own coaching and mentoring skills given that these are valuable systems leadership skills in their own right.

Suggested actions relating to coaching and mentoring included:

- Developing a directory of accredited/experienced coaches and mentors.
- Offer short courses on coaching and mentoring skills for registrars and consultants.
- Use of reverse mentoring – particularly useful for developing awareness of issues related to equality, diversity and inclusion (ED&I).
- Use peer mentoring groups and/or learning sets to share experience and to practise giving and receiving feedback.
- Develop awareness of the value of having an external perspective – a 'friend' who understands but is not immersed in your world.

4.3 Enabling environment for systems leadership development

The third thematic area was about the enabling environment for systems leadership development. This is about the wider context in which the training and development of public health professionals takes place and the impact this has on the quality of developmental opportunities and the readiness of individuals to engage with them. Three key issues were highlighted, including: supervision, transitions and the development approach.

4.3.1 Supervision

There was a strong consensus throughout the interviews, focus group and co-design workshop that a key determinant of the effectiveness of placements and learning opportunities for systems leadership is the extent to which the educational supervisor and/or local leaders (particularly the DPH) were seen as systems leaders themselves rather than simply technical experts. Variability of training context and supervisory approach are thus key variables in determining how much opportunity registrars have to develop their understanding, ability and confidence to engage in systems leadership. Without access to one or more skilled systems leader in each training location registrars may struggle to gain the necessary experience.

> *"I think you've almost got to train educational supervisors and the consultants at the same time because some of the educational supervisors are fantastic, and others are very happy doing the box ticking competence, because it's probably easier than their day job. So it's how could you have them together and upskill them together and I think things like intensive input, and then learning sets, and so they're going away and learning on the job, and real support for educational supervisors to devise real work opportunities." (Senior Public Health Professional)*

It was suggested that many supervisors have significant learning and development needs themselves in relation to systems leadership. In order for registrars to make the most of their on-the-job development they need to be supported by educational, clinical, activity and academic supervisors who have a good understanding of the underlying principles of systems leadership, are able to craft appropriate learning and development opportunities and can role-model a systems leadership approach to those they are supervising.

> *"The other benefits of involving the trainers in what you get to or what you propose, might be that because we've had this huge turnover [following a local government restructure], a lot of new consultants are in need of support. So in hindsight, I would say that something I got out of it was being supported. We might have thought we knew everything but actually, if we were honest we were picking up as much as the registrar." (Senior Public Health Professional)*

It was suggested that where directors of public health, consultants in public health and/or educational supervisors are not experienced systems leaders, have limited understanding of what is required and/or do not have the required skills, networks, confidence or experience; then they may be reluctant or unable to create genuine opportunities for registrars to experience systems leadership in action. In such cases, risk aversion may be common along with the view that only 'exceptional' registrars are capable of taking on a systems leadership role. Without trust from their supervisor, registrars' work will be much more task centred than developmental.

> *"The [directors of public health] and centre directors probably have the most sense of where the strong system leaders are. And if you're not careful, education goes on in one corner and especially now we've made being an educational supervisor so onerous, a lot of these [directors] say, I don't have time to do that, but I'll get my consultants to do that. So there is a risk of training and education going on in a slightly separate silo." (Senior Public Health Professional)*

From a diversity and inclusion perspective, it is also necessary to have a suitably diverse population of systems leaders who can act as role models for people from across all demographics and backgrounds. Whilst this may take time to achieve through a talent management strategy, broadening opportunities

for placements in different contexts with diverse stakeholders and communities will ensure that registrars are exposed to a range of leaders from different backgrounds and protected characteristics.

Suggested actions relating to supervision included:

- Developing a directory of supervisors with specific expertise and reviewing the talent pipeline in relation to ED&I in order to ensure a wide range of role models and systems change on this issue.
- Training and development for supervisors – mechanisms for ensuing consistency and quality across supervisors and trainers, including scoping a systems leadership placement, facilitating experiential learning and reflective practice, building knowledge/expertise on systems thinking and complexity.
- Regular supervisor workshops to help them report on, reflect on and learn together in enabling a systems orientated approach to develop within their educational practice.
- Schools of Public Health to track and share their learning about systems leadership with other parts of the system which, based on systems change principles itself, should create new flows of information that will facilitate further systems change.

4.3.2 Transitions

In the focus group, interviews and co-design workshop, participants referred to the need to support registrars, consultants and other public health professionals through key career transitions. It was suggested that the current curriculum focuses on learning and development for registrars with limited consideration of their selection onto the scheme or ongoing professional development post qualification. A longer-term developmental perspective was recommended, with particular attention to key transition points such as the recruitment and induction of public health registrars, progression from registrar to consultant, and appointment into the role of DPH.

Recruitment and induction of registrars

The first important transition to consider is the recruitment and induction of registrars into the public health specialty. It was suggested that for registrars entering the public health programme from a clinical background, in particular, the scientific evidence-based approach underpinning their education up to that stage can be highly technical, with a positivist mindset suggesting a 'one right way' approach. Such an approach, whilst well suited to tackling complicated issues where problem-solving and analysis are essential, it is less well suited to complex issues where there may be high degrees of uncertainty, ambiguity and few tried-and-tested ways of addressing them. Many public health issues are inherently 'wicked', complex and contested where different stakeholders hold fundamentally different perspectives on the nature of the issue(s) and preferred response(s). It was suggested that whilst some registrars are eager and proactive in seeking out opportunities for systems leadership, and may come onto the programme with extensive experience picked up during time in local authorities or other settings, others may be far less comfortable with uncertainty and ambiguity and have a preference towards technical roles/issues.

> *"Some of the people who've done very well in local authorities or in integrated care systems are people who came into public health from that kind of background. Rather than coming through a medical or nursing training. So I think the people who come with if you like, a clinical background, need even more about systems leadership." (Senior Public Health Professional)*

Through our stakeholder engagement process we engaged with a range of registrars who were interested in systems leadership, understood it, generally felt they had opportunities to develop it and had been supported by their own supervisors; but recognised that they may be a self-selected group and not typical of the wider cohort. Some of those with extensive prior experience felt rather deskilled when required to sign up for a Masters course during the first year of the programme as they felt it failed to recognise the value of their existing knowledge/skills.

> *"If we say you've got to do a Masters, we are not trusting some very experienced people to come into a workplace and be able to apply themselves to some of the problems we want them to apply themselves to. So saying, 'Go away and get the knowledge first get the theory first'." (Senior Public Health Professional)*

> *"And partly it might be this fear that they won't concentrate enough on the exams to get through them, but at the same time if they get through the exams, but then they're not this finished article that can manage, and stimulate, enthuse and persuade, then we're setting them up to fail and to fail too when they become consultants." (Senior Public Health Professional)*

Transition from registrar to consultant

The next significant transition to consider is from registrar to consultant. It was noted that newly appointed public health consultants are expected to function at a high level from day one in very demanding roles and that the transition from the relatively protected role of registrar to a consultant is quite stark. This is a time of great development need, but it is exactly when there is no longer a formal structure for development, action learning sets or mentoring (outside of line management), and no peer support network. It is also a time of increased workload, with no protected time for personal/professional development.

Respondents indicated that new consultants are often too busy to engage in formal learning and development (even where it is available) but could benefit greatly from informal learning through networks, coaching/mentoring, etc. It was also suggested that, given the importance of their professional development, it would be worth reviewing what opportunities might exist for allowing some time for formal development in systems leadership linked to their continuing professional development (CPD) and professional registration. There are a range of courses available from organisations such as the Kings Fund, NHS Leadership Academy, Leadership Centre and Common Purpose (as mentioned in section 3.3.4), that would be of value to public health consultants and develop their networks and social capital.

Transition from consultant to director of public health

Finally, there was some discussion around the transition from consultant to DPH. Whilst not all consultants will either aspire towards or be successful in making the transition to DPH it was noted that this is another significant step-up in terms of the need, expectations and capacity for systems leadership. Across the sector there are challenges in recruiting and retaining skilled DsPH who play a key role in leading across organisational and professional boundaries.

It was noted that there are increasingly two main routes to DPH in England – those progressing from clinical (usually medical) roles in the NHS and those from non-clinical (often local authority) backgrounds – which are associated with very different skill sets and experience. The trend towards integrated care will inevitably increase the need for effective systems leadership whichever path is taken but also puts pressure on funding. It was also highlighted that at present there are significant differences between

medical and non-medical pay scales, and associated expectations around line/budget management responsibilities, that enhance fragmentation across the sector.

> *"The big danger is that we're just producing a load of individuals with high salary expectations that when they get into a service setting can't actually deliver the goods." (Senior Public Health Professional)*

> *"When you're on a consultant's appointment committee […] you hear the members discussing why they're paying all this money for these people?" (Senior Public Health Professional)*

Suggestions relating to transitions included:

- Ensure peer support networks are in place for newly appointed consultants.
- Use evidence from the FPH survey of new consultants/workload to assess support/development needs;
- Encourage consultants and registrars to regularly attend the development events run by regional schools of public health (such as the South West Development School).
- Review pay and progression systems across medical and non-medical roles.

4.3.3 Development approach

There was widespread agreement that systems leadership can't be taught through formal training but rather needs to be experienced. Whilst there may be some useful knowledge to underpin an understanding of systems leadership; learning needs to be embedded within everyday practice.

As outlined earlier, several interviewees noted that people need the freedom to learn from their mistakes and through sharing their experiences with peers but that formal training provision for public health professionals tends to be somewhat risk averse. Whilst some academic and clinical supervisors are willing and able to create opportunities to learn through experience, others are less so and the overall approach of public health education and training focuses on success and tends not to encourage sharing of things that don't go well.

It was agreed that the 2015 public health curriculum includes a number of opportunities for learning and developing systems leadership (in key areas 4, 9 and 10) but how this is done and how it is assessed is quite variable. Many respondents highlighted the importance of learning by observing system leaders in action and working within different groups and teams. It was recognised, however that there was wide variability between the learning opportunities in different placements and that registrars need support in helping to identify appropriate placements and getting the most out of the relationship with their supervisor(s) (see sections 4.2.2 and 4.3.1). It was also noted that the word 'leadership' itself may be a turn off for some people (who either see it as irrelevant or unappealing) and requires careful translation in terms of what it means for registrars and its relevance to their day to day roles.

In discussing the 70:20:10 ratio of on-the-job learning, coaching/mentoring and classroom-based training, interviewees shared a number of observations. Whilst all agreed that a mix of approaches is required some suggested that this balance is not always appropriate and may need to shift through different stages of learning and development.

"It's so much more complicated than some of the other stuff that we do. You know, if you think about managing an outbreak, or doing a needs assessment or developing a strategy - those things are by comparison with system leadership - relatively simple skills. There's a technical element to them, but it's more about practicing against a fixed framework that you've learnt. The thing with systems leadership, is no system is exactly the same. And therefore, there's more understanding that is required before you start getting into the system or trying do anything with it, you need to understand what it looks like, from a particular perspective, and that in itself can take a bit of time to get a bit of understanding. So I think it's a different balance, I would say it would be more probably 20% theory. And I would say about 25% coaching supervision, and 55%, would be practice in the early stages." (Senior Public Health Professional)

"I agree with those proportions [70:20:10], it ought to be mostly on the job. I think the levers are probably making the people in the placements more aware that this is something that we do need training in. And I don't know if that's because they are not currently thinking about how they can provide the training or actually they're not yet really thinking about the fact that that's how they're delivering public health. So it's difficult to say where the mindset has stalled already." (Public Health Registrar)

Following on from the points raised in section 4.3.2 it was suggested that a longer-term leadership and management stream within public health training, carried forward post qualification, would be beneficial. Further guidance on a developmental approach for systems leadership is given in section 5.1.

4.4 Wider context of systems leadership and public health

The fourth and final thematic area is the wider context of systems leadership and public health. Throughout the research informing this scoping project discussions often turned to the wider context of public health and how structures, policies and processes at local, regional and national levels impact on each of the areas outlined so far, including understandings about the nature and purpose of systems leadership, development opportunities for registrars and consultants, and the enabling environment around supervision, transitions and developmental approach. Three key sub-areas were identified, as follows.

4.4.1 Nature and purpose of public health

It was noted within the interviews, focus group and co-design workshop, as well as the literature review, that the perceived nature and purpose of public health, and its relationship to the wider health and social care system, is in transition. Since 1854, when John Snow traced the origins of a cholera outbreak in London to the Broad Street pump, the public health profession has been strongly associated with the medical model of epidemiology and health protection. From the 1980s onwards growing attention has been paid towards the social determinants of health and the role of public health in health promotion, wellbeing and tackling health inequalities. Section 3.3.2 highlighted how both of these perspectives remain evident within the current public health curriculum, giving rise to a number of tensions and contradictions given the differing conceptual, empirical and professional underpinnings of these approaches. The introduction of a complex adaptive systems approach to public health (see also sections 3.3.2 and 3.3.3) adds further uncertainty and ambiguity to the nature, boundaries and mechanisms of public health.

In 2013 responsibility for public health in England was transferred from the NHS to local authorities in order to support the shaping of services to meet local needs and provide a greater focus on the wider social determinants of health and health inequalities. Whilst this has enhanced the capacity for public health to influence place-based issues it has arguably weakened links with other aspects of health service provision and created a sense of turmoil and change within the profession.

This situation has been reinforced by the heavy cut backs in funding for local government services over this period, exposing public health to the full scale of funding reductions outside the ring-fenced NHS budgets. Within this context, it has been suggested that many feel the public health profession is at risk, and severely constrained in its capacity to achieve the scale of outcomes it would hope.

> *"I think public health resources are probably draining away. There's re-structuring in [a County] at the moment, re-structuring just happened in [a City], and posts go. And if local authorities don't see those individuals as assets, then they're not going to be interested in retaining them. So it's a bit of a dog-eat-dog world. We're not protected in the way we were in the NHS." (Senior Public Health Professional)*

The incremental reduction in the public health grant from government since 2013/14[15] represents a threat not only to the provision of services but also the availability of funding for the education and training of the public health workforce. It was suggested by several interviewees that UK public health is in a state of existential crisis and that within this context, systems leadership offers both a genuine opportunity as well as a threat to the profession (see also sections 4.4.2 and 4.4.3).

> *"I can see a risk within local authorities that public health becomes marginalised with population health being delegated to people who have not been trained in Public Health." (Senior Public Health Professional)*

Suggested actions included:

- PHE to lead the articulation of the role of public health in systems leadership, including a clear and concise definition of what system leadership is.
- Review and revise the specialty curriculum to ensure that it fully incorporates system leadership competencies.
- Create a public health equivalent of *Freakonomics*[16] that helps shift mindsets around the nature and purpose of public health in contemporary society.

4.4.2 Local/regional context

Interviewees noted significant variations between the local context of public health across the UK. Whilst public health is thriving in some areas, in others it may become side-lined by other agendas and/or responsibilities adopted by people without a training/background in public health.

> *"I suppose for me that the context is more variable in local government than it was in the NHS. So it was always variable: some places you could make more impact than others just because of*

[15] See https://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/spending-public-health

[16] http://freakonomics.com

how things were set up. But I think the differences are greater. There are some places where public health, where people can really make a difference to the public's health because of the opportunities that they're able to leverage. And there are other places where they're just struggling to survive. Yes, I think that the gap between the ones that are thriving, and the ones that are failing is much bigger. And that's not all down to individual factors. That's also a systems effect …so if we're going to try to help people to learn, we need to put them in places where there are reasonably good systems to operate in." (Senior Public Health Professional)

There is increasing variability between local authorities in how the public health function is organised, located and managed, and how well the wider system functions. At the very least this leads to differences in the quality and effectiveness of placements across the country and the learning opportunities they offer for registrars. It also means that skills, knowledge and experience gained in one area may not be readily applicable elsewhere.

"It's been a big feature of our program [in this region] that registrars lead from day one. And the program I inherited, we were getting people to the end of training and they were finishing off the learning outcomes, but I didn't think the portfolios were consistent with a leadership role, they were very project based, very much working to a consultant. That probably has its place at the earliest stages of training, but certainly not as you get through it. So our mantra is trainees lead from day one; many of them were leaders before they came into the training program so we don't want the training program to actually deskill them in terms of that. And then I think we've certainly had to advise some training locations that especially for the end stage trainees they have to arrange projects where they are genuinely having opportunities for system leadership; and we're doing a review of our [provision], particularly our integrated care system and health care public health, and we've concluded and made a commitment that every trainee in [the region] should have a wider system leadership role." (Senior Public Health Professional)

An important aspect of responding to the local context is taking a 'place-based' approach, which requires registrars and consultants to develop their capacity to lead within complex, multi-stakeholder partnerships – navigating contested issues and competing agendas. A key aspect of this work requires the development of political astuteness[17] and the capacity to work with and alongside local political leaders.

"I think from a local government perspective, one of the really key things which is still not particularly come through the training programme is around working in a political system. And one of the things that we need more than ever actually is for the elected members to take on far more of a systems leadership role. And I think whatever programme will be put together, you absolutely need to have some engagement or input or requirement for people to have engagement with elected members because it's such a different way of working. More and more as things develop, particularly the way that they are looking to develop around the integrated care system, then there potentially will be more democratically elected accountability within the system. And I think certainly people who have got more of an NHS background are going to have

[17] The importance of political astuteness in the leadership of public services has been strongly advocated through the work of Professor Jean Hartley at the Open University – for a summary see https://bit.ly/2ULOdG4.

to step up to that plate. But I think that that's quite an important part of the whole thing is working with it with the democratically elected members." (Senior Public Health Professional)

Suggested actions included:

- Support more community empowerment and engagement in public health, including an 'audit' of the voices that are not currently being heard.
- Encourage more cross-sector, place-based courses/workshops on system leadership.
- Capture and disseminate learning from placed-based systems leadership projects/placements.
- Provide guidance on opportunities for placements in political settings at local, regional and national levels, e.g. Department of Health and Social Care, Council Leader/Mayor's offices.
- Emphasise the importance of engaging with leadership at all levels of the system and the benefits of completing a systems leadership placement.

4.4.3 National/political context

Finally, it was highlighted how the wider national and political context impacts on the structure of public health services and the developmental opportunities for registrars and consultants. Whilst public health is situated within local authorities in England, it remains within the NHS in other nations of the UK (see section 3.2.1). With devolved accountability for overseeing the public health function to national bodies[18] it can be difficult to ensure consistency and alignment of approach across the four nations.

The FPH oversees the training and development of public health specialists across the entire UK, with the 2015 curriculum in use across England, Scotland, Wales and Northern Ireland. Whilst this provides continuity of learning outcomes and accreditation, it poses challenges in terms of ensuring that registrars gain access to comparable learning opportunities and acquire the necessary skills and knowledge to take on a consultant role (or equivalent) in their local context. Given the scale and range of provision it would also clearly be a challenge (requiring significant resource) to implement consistent changes in relation to systems leadership (and/or other aspects of the curriculum) across the whole of the UK yet, as many interviewees suggested, this is what is required:

"It feels to me this is a really urgent and important piece of work that we need to start, pilot and then roll out considerably over four Nations and have something that's relevant to all public health practice wherever it is in the world." (Senior Public Health Professional)

The trend towards integrated services and prevention[19] were seen as likely to continue to shape health and social care policy and practice over the foreseeable future, offering opportunities for public health professionals with experience of this way of working. Several interviewees stressed the potential for PHE

[18] Public Health England, Public Health Wales, NHS Health Scotland, Public Health Agency (Northern Ireland).

[19] An increasing focus on prevention (as opposed to treatment) was a key feature of the NHS Long Term Plan, published in January 2019, which sets out the strategy for NHS services in England over the next decade. Whilst this increases a focus on public health, there is some uncertainty over how these responsibilities will be balanced between NHS and local authorities, and the level of resourcing available. See: https://publichealthmatters.blog.gov.uk/2019/01/08/the-nhs-long-term-plan-focusing-on-prevention-to-save-thousands-of-lives/.

(and its equivalents in Scotland, Wales and Northern Ireland) to really take a lead on this agenda and that if it didn't then others were likely to move into this space.

> *"I think going forward, we need to grab the opportunities that are coming around the corner to public health, which means the systems leadership and influencing across organizational boundaries and things are going to be even more crucial than they have been, I think." (Senior Public Health Professional)*

> *"I would probably say our system leadership role has been growing over probably the last ten years but I would say with the development of integrated care systems, definitely with the bringing on of the Health and Wellbeing Boards, the ever increasing remit there. That actually the whole thing will be ramping up even more with systems leadership because it's a really key part of a job." (Senior Public Health Professional)*

> *"Because public health is small and longer term there is a risk it will be marginalised – needs to keep voice and have influence." (Senior Public Health Professional)*

Suggested actions in this area included:

- Review potential for greater PHE representation at national level, e.g. in relation to the NHS workforce and talent management strategy and/or leading on the NHS prevention agenda.
- PHE to host a national conference/forum for NHS/Local Authorities on systems leadership.
- Offer international fellowships/placements to observe system leadership in other political contexts.
- Establish a governing body to represent public health in terms of advocacy, lobbying, evidence gathering (potentially something that PHE and/or FPH could lead on).
- Promote opportunities for public health leaders to engage with cross-sector systems leadership development programmes/initiatives in order to build their networks/influence beyond public health.

5 Developing an integrated approach to systems leadership development

The previous chapters have outlined a number of key themes/issues that were identified through the stakeholder consultation and engagement as well as the literature review. A number of suggested actions have been identified for how these might be addressed, which inform the recommendations outlined in Chapter 6. In this chapter, however, we consider an over-arching framework for systems leadership development in public health. We begin by identifying key principles informing a learning and development approach to systems leadership, the need to develop capacity to work across levels and boundaries, and finally an indicative developmental framework that could inform an overall approach to systems leadership development for public health registrars and consultants.

5.1 Key principles of a systems leadership development approach

Synthesising insights from the literature review, stakeholder consultation and engagement, as well as the authors' own professional experience of leadership and organisation development in a range of contexts, a number of principles informing a systems leadership development approach can be articulated:

1. The need to highlight that programme design should be based around learning and development principles, and not as a pure training intervention.

2. Strong recognition should be given that learning opportunities must be designed predominantly to support learners in the skills of operating through dispersed networks rather than through top-down hierarchies.

3. The public health context is complex and is constantly evolving. Learners need to be supported to explore and develop their capacity to be curious throughout their professional placements. They should be encouraged to explore the skills of inquiry and 'not knowing' – moving the expectation of the learner from always being the technical expert in public health with a 'right' answer, towards a skilful practitioner who is able to critically reflect in their unique complex and adaptive system.

4. It must be recognised that a competency-based approach will only take learners so far in their systems work. If learners continue to be strongly driven to only seek and record clear evidence on meeting specific competences around system leadership (in order for this evidence to be seen as 'completed' or 'signed off') then they may miss the opportunity to learn more widely within a system or contextualise this unique learning. Some more thought may be helpful on how to agree and capture learning gained from any dedicated systems leadership projects or placements and to promote a culture of lifelong learning and critical reflection in public health.

5. Issues around complexity and systems leadership are often best understood through guided experiences and opportunities. Practice supervisors may be reluctant to allow new public health registrars open access into their local systems without confidence in their abilities (due to possible reputational risk). This may mean that low risk learning environments may be needed to practice these skills. In higher risk environments registrars could be encouraged to do systems mapping as observers of the system they are located in rather than manipulating the system themselves.

6. Development support for placement supervisors may also be crucial for this work. Some supervisors may not be familiar with ideas around systems leadership and/or complex adaptive systems. Without

this knowledge supervisors (including coaches and mentors) may struggle to identify the right learning projects for their registrars and/or effectively support their reflection and learning from experience.

7. In addition to the required public health competencies (technical/contextual/delivery) required for public health registrars in placement - learners will need to increase their skills in curiosity, connectivity and coaching, as these skills are often seen to be far more significant qualities of effective leadership in the current health and social care environments.

8. Learning approaches should be experiential and attempt to bring learning into a live system. Learners will need support to not only engage in such projects as technical public health experts but also as network leaders.

The implications for this in relation to pedagogy and programme design are summarised in Table 2 below.

From	To
Linear	Systemic
Technical	Adaptive
Training	Learning and development
Knowledge/skills	Mindset/experiences
Competencies	Capacities
Single profession	Multi-disciplinary
Siloed	Integrated
Individual	Collective
Bounded learning	Lifelong learning

Table 2 – Shifting perspectives on pedagogy and programme design

5.2 Working across levels and boundaries

In complex systems such as public health, leaders need to be able to influence and lead across boundaries. There are multiple boundaries including vertical, horizontal, stakeholder, demographic and geographic (Yip et al., 2016) each of which is associated with different expectations and criteria for assessing the credibility, legitimacy and effectiveness of leadership.

Systems leadership requires leaders to develop their understanding, awareness and capacity to lead across multiple levels - beginning with leading self, leading within teams and organisations, leading collaborations and partnerships, leading local system(s), and leading a wider system/across systems, as illustrated in Figure 4.

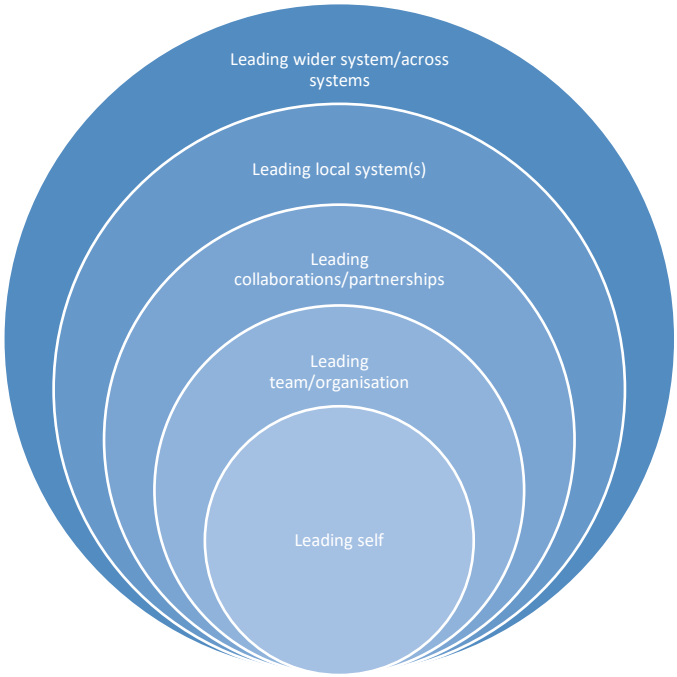


Figure 4 – Levels of systems leadership learning and development

At lower levels these resonate closely with the key transitions identified in the 'leadership pipeline' (Charan et al., 2011) although as people progress in public health the focus moves beyond leading at increasingly senior levels in a single organisation to leadership of place (Hambleton, 2014), alongside people and groups from very different backgrounds. Such a framework could usefully inform a longer-term development strategy for public health professionals, with each of these levels running as threads through the development pathway, with increasing expectations about the level of mastery demonstrated, as illustrated in the next section.

5.3 An indicative development framework for public health registrars and consultants

Informed by the principles outlined so far in this chapter we now present an indicative framework that could underpin the development of public health registrars and consultants. This would undoubtedly need to be developed and refined in collaboration with representatives from PHE, FPH, Schools of PH, etc. Alongside the focus on levels outlined earlier we reference the system leadership capabilities from the VSC review (as discussed in section 3.1.1) and how these develop and build over time. To facilitate alignment with the existing public health curriculum we map this against the public health training pathway, incorporating a third phase to capture post-qualification development into the role of public health consultant, as indicated in Table 3.

The six levels outlined in the bottom row of the table each span two or more years of training/professional practice to indicate that individuals are likely to acquire a capacity for systems leadership at different rates, depending on a range of factors such as prior experience, developmental opportunities acquired through placements, quality of supervision and personal temperament/disposition. Whatever rate they develop, however, it is suggested than an approach that focuses on incrementally enhancing the scale, complexity and ambition of their systems leadership influence is advisable. Should a framework such as this be adopted within UK public health then future iterations might usefully consider how the developmental pathway could be extended beyond consultant to DPH.

PHASE 1			PHASE 2		PHASE 3	
ST1	ST2	ST3	ST4	ST5	CPH1	CPH2+
KNOWS	KNOWS HOW/SHOWS	SHOWS HOW/ DOES		DOES	MASTERS/SUSTAINS	
	ARCP	ARCP	ARCP	ARCP	POST QUALIFICATION	
	PART A**	PART B***				
2 years (normally up to 30 months maximum). Part A and Part B MFPH obtained in this phase and public health knowledge and core skills gained. Registrars are also expected to begin to demonstrate development of ability to integrate their use of those skills as progress towards independent practice. In phase 1 this will be assessed by examination, at each annual appraisal and ARCP.			This phase allows the registrar to take increasing levels of responsibility leading to the final year when registrars are expected to work at consultant level but under supervision. In the final year, supervision will become increasingly 'light touch' as the Educational Supervisor judges that the registrar can be entrusted with work reflecting a high level of responsibility. 'Acting up' into a consultant post is encouraged in the final year of training. In phase 2 workplace-based assessment, annual appraisals and ARCP will continue to assess this progress.		This phase encompasses the transition from registrar to consultant and their ongoing systems leadership development post-qualification.	
REGISTRAR in PH (in training)					CONSULTANT in PH (in post)	

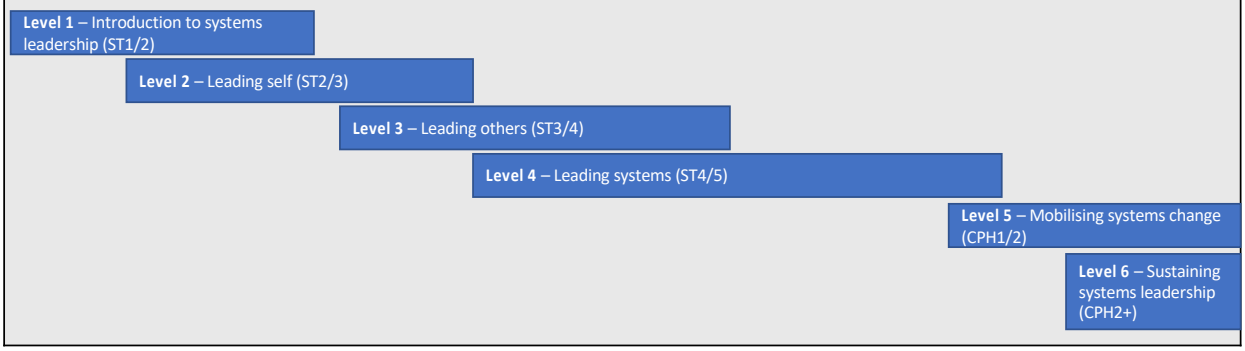


Table 3 – Extended public health training pathway (adapted from Faculty of Public Health, 2015, p. 20)

5.3.1 PHASE 1

Level 1 – Introduction to systems leadership

Years 1-2 of Registrar Training

Introduction to basic principles of systems leadership, including systems thinking, working with complexity and the need for systems thinking in public health. Focus on *ways of thinking* and *ways of perceiving*.

Elements include:

- What is systems leadership, systems thinking and complexity and why do they matter?
- The changing context of public health in the UK.
- Differing perspectives and ways of knowing.
- Initial placement(s) – observation, listening and critical reflection.
- Systems mapping exercise.

Intended learning outcomes:

- Develop an understanding of the key concepts informing the theory and practice of systems leadership, including systems thinking and complexity.
- Identify key factors shaping the public health landscape in the UK and how this is changing over time.

- Appreciate the relative strengths and weaknesses of different forms of knowledge and ways of knowing.
- Develop your skills of observation, listening and critical reflection during a placement.
- Demonstrate the ability to map different stakeholders and dimensions of a complex adaptive system, including the key boundaries/challenges that need to be worked across.

Level 2 – Leading self
Years 2-3 of Registrar Training

Exploration of personal values, beliefs, qualities, experience and preferences and how these influence your approach to issues/challenges and your relationship with others. Focus on *ways of feeling* and *ways of being*.

Elements include:

- Systems leadership and identity.
- Personal values and beliefs.
- Personal timeline/narrative.
- Psychometrics/de-railers.
- Personal resilience and wellbeing.
- Stretch experience – engaging with communities/groups beyond public health; working with difference.

Intended learning outcomes:

- Explore your own role and identity as a systems leader.
- Identify your core values and beliefs and how they relate to your personal timeline/narrative.
- Develop a personal narrative that provides a compelling and inspiring story for you and others to engage with.
- Enhance your self-awareness through personality profiling and identification of potential 'de-railers'.
- Develop a strategy for maintaining commitment, energy and motivation and the capacity to overcome personal challenges/difficulties.
- Experience engaging with communities/groups different from yourself, reflecting on how you felt and your ability to build a sense of connection/rapport.

5.3.2 PHASE 2

Level 3 – Leading others
Years 3-4 of Registrar Training

Understanding groups and organisations, interactions with others and how these influence your approach to issues/challenges and relationship with others. Focus on *ways of relating* and *ways of doing*.

Elements include:

- Peer review/feedback.
- Building collaboration and common purpose through public narrative.
- Working with complexity, uncertainty and ambiguity.
- Dealing with conflict and disagreement.
- Leadership exchange[20].

Intended learning outcomes:

- Engage in a 360-degree peer-review exercise to explore how others perceive/experience your leadership.
- Develop your capacity to build collaboration and purpose across different stakeholder/interest groups through public narrative/collective sensemaking.
- Enhance your ability to work with complexity, uncertainty and ambiguity, including the ability to embrace paradox.
- Demonstrate your conflict management skills and ability to resolve inter-personal differences.
- Engage in a two-way leadership exchange to sharpen your skills in observation, listening and reflexivity.

Level 4 – Leading systems
Years 4-5 of Registrar Training

Developing capacity for leading and influencing beyond formal authority, working across boundaries. Focus on integrating *all 6 dimensions* of the VSC integrated framework (feeling, perceiving, thinking, relating, doing and being).

Elements include:

- Monitoring and evaluating change in complex systems.
- Developing a systems change strategy.
- Completing an integrative assignment.

Intended learning outcomes:

- Demonstrate capacity for critical analysis and synthesis of complex and contested issues.
- Develop a systems change strategy in collaboration with key stakeholders and/or community groups for addressing a specific 'wicked' issue related to public health.
- Compile and present an integrative systems leadership assignment for a diverse set of stakeholders.

[20] For an overview of the Leadership Exchange approach see the article by Jonathan Gosling on p. 32 of What is Leadership Development: Purpose and practice, https://ore.exeter.ac.uk/repository/handle/10036/77193.

5.3.3 PHASE 3

Level 5 – Mobilising systems change
Years 1-2 as new consultant

Taking up and expanding your role as a systems leader. Enacting and embedding systems change. Focus on positively influencing the local and/or *wider context* for systems leadership.

Elements include:

- Leadership of place.
- Implementing a systems change initiative.
- Coaching and mentoring.
- Action learning and support networks.

Intended learning outcomes:

- Develop a nuanced understanding of the local context in which you lead.
- Devise and implement a place-based systems change initiative.
- Engage in regular coaching and/or mentoring.
- Regularly attend an action learning set and/or other professional support network.

Level 6 – Sustaining systems leadership
Years 2+ as new consultant

Ensuring mechanisms are in place for ongoing learning, development and review. Re-visiting personal values, purpose and role. Peer review and feedback in role.

Elements include:

- Engaging in CPD around systems leadership and systems thinking.
- Supporting the development of new/emerging leaders in public health/beyond.
- Creating a shared vision.
- Peer review/feedback.

Intended learning outcomes:

- Engage in an ongoing portfolio of CPD that includes elements directly linked to systems leadership.
- Demonstrate active support for new/emerging leaders through your role as a coach/mentor.
- Seek regular 360 peer-review/feedback (at least every 2-3 years).

5.4 Monitoring and evaluation

Whatever mechanisms are put in place for enhancing systems leadership development it is advisable to implement a robust research and evaluation framework to monitor progress, assess impacts, refine

interventions and enrich understanding of the nature and mechanisms for systems leadership and change in public health. Only limited insights relevant to this point were raised during the research for this scoping project however a suitable approach is likely to include the following aspects:

- **Formative evaluation** – to engage with different communities and stakeholders in order to scope and design the intervention(s), develop a sense of ownership and commitment, and clarify understandings and expectations against which to monitor/assess impacts. Useful methodologies include focus groups, collaborative design sessions, stakeholder interviews, systems mapping, appreciative inquiry.
- **Interim evaluation** – to assess progress over time in order to adapt and refine the intervention(s) and monitor progress against outcome/performance indicators. The timing of such evaluation would need to be determined in relation to the specific intervention(s) and, where possible, aligned with existing data collection/monitoring processes. Useful methodologies might include session evaluation forms, surveys, collation of secondary data sources, focus groups.
- **Transformative evaluation** – this complements the formative and interim evaluation by embedding a culture of learning throughout the intervention to enhance its impact and effectiveness through the promotion of ongoing critical thinking and reflection. Useful methodologies include reflective portfolios/diaries, action research, collaborative inquiry, storying, theory of change, visual dialogue.
- **Summative evaluation** – to be completed at the end of an intervention/once it has been running long enough to impact on key behaviours/outcome indicators in order to assess effectiveness against aims, objectives and resource allocation. Useful methodologies include case studies, economic and social return on investment, 360-degree review.

A number of existing frameworks for evaluation exist that could easily be adapted to a public health context, such as the NHS Leadership Development Evaluation Framework (NHS Leadership Academy, 2017), EvaluLead (Grove et al., 2005) and Revaluation (Darnton, 2017)[21]. In addition, the work of Harry Rutter has recommendations on embedding a complexity approach within public health research and evaluation (Rutter et al., 2017).

Evaluation and research are an integral aspect of effective leadership and organisation development interventions and should be factored in and properly resourced from the outset. Hirsh et al. (2012) note that some experts recommend that around 10% of the cost of the intervention should be spent on evaluation although this is rarely done.

[21] A useful compendium of evaluation resources, including those framed around systems and complexity in health, is available at http://insites.org/resources/.

6 Recommendations and conclusions

This report has compiled and analysed a range of evidence on systems leadership and how it could be more firmly embedded within the training and development of public health registrars and consultants in the UK. A number of suggestions for action that arose from the stakeholder engagement process are included in Chapter 4. In this chapter, however, we take a broader perspective across the issues, evidence and implications arising from this work to provide a number of targeted recommendations for those involved in, and responsible for, the delivery of professional accreditation for public health registrars and consultants.

6.1 Recommendations

The following key recommendations (outlined in Table 4) have been synthesised from the range of suggestions arising from our consultations. Our intention here is to identify a limited number of specific and actionable recommendations and to identify which stakeholders might take a lead in implementing them, whilst recognising that all recommendations will require partnership working by all stakeholders for successful implementation. Developing systems leadership for registrars and new consultants will require a collaborative system-wide approach.

Recommended action	**By whom** Lead organisation in bold Suggested route given (via) or key partners (supported by)
Curriculum development *(chapters 3 & 4)*	
1. Incorporate systems leadership knowledge and skills (including systems thinking and complexity theory) into the Public Health Specialty Training Curriculum, ensuring clear guidance on intended learning outcomes.	**FPH** via Education Committee
2. Incorporate systems leadership knowledge and skills (including systems thinking and complexity theory) into public health masters programmes.	**Universities** via MPH directors
3. Develop online learning resources for enhancing literacy and fluency in complex systems approaches to public health action - including a shared definition of systems leadership in public health, illustrative examples, case studies, videos and readings.	**HEE** digital supported by PHE and FPH [PH portal]
4. Develop a forum for debate, research and the sharing of good practice on systems leadership in public health (e.g. online networks, conferences, journals).	**PHE** via Research, Translation and Innovation supported by NHS Leadership Academy
5. Conduct a thorough analysis of the conceptual underpinnings of the Public Health Specialty Training Curriculum when it next comes up for review, in order to ensure consistency and coherence of	**FPH** via curriculum and assessment committee

approach and compatibility with insights from a complexity approach.	supported by GMC and UKPHR
Specialty training programme *(chapters 4 & 5)*	
6. Incorporate a staged learning and development programme for systems leadership across all years of the specialty training programme. Ensure that training placements for systems leadership provide sufficient time to participate in, develop and take responsibility for, place-based initiatives, relevant to training stage.	**HEE** via Heads of School (HoS)
7. Embed systems leadership knowledge and skills (including systems thinking and complexity theory) into supervisor training, CPD and accreditation.	**HEE** via HoS
8. Provide registrars with opportunities for systems leadership coaching and mentoring with skilled mentors/coaches external to the public health field.	**HEE** via HoS
9. Map and provide a directory of educational, clinical, academic and activity supervisors and key stakeholders with systems leadership expertise to inform placement decisions.	**HEE** via HoS
10. Monitor placements to ensure experience is gained in applying systems change skills in different environments and system levels.	**HEE** via HoS
11. Schools of public health to track and share their learning on systems leadership development with each other and the wider system.	**HEE** via HoS supported by FPH
Transition to new consultants *(chapter 4)*	
12. Create and sustain a peer support network for new consultants (e.g. online forum, peer support, social media groups, action learning sets, mentoring, buddying).	**PHE** via Centres supported by DsPH
13. Ensure accessible (e.g. low cost) annual development events available to new consultants in every region.	**PHE** via Centres supported by DsPH
14. Regular surveys of new consultants on development needs, in particular regarding systems leadership.	**FPH** via Education Committee
15. Protected time for new consultants for systems leadership development.	**Employers** [including local authorities, PHE, NHS, Universities] supported by DsPH, LGA [standing group on local PH teams]
Wider system *(chapters 3, 4 & 5)*	
16. Public health community to support and participate actively in the development of an evidence base for public health action based on a systems/complexity perspective.	**PHE** via Leadership and Talent & Research, Translation and Innovation supported by universities

17. Compile a database of regional and national systems leadership programmes/workshops that public health professionals can access at different stages of their career and signpost potential sources of funding.	**PHE** via Leadership and Talent
18. PHE to take a national role in advocating a systems leadership approach, informed by a robust evidence base on the value of cross-sector collaboration to tackle 'wicked' health and social care challenges.	**PHE** supported by arm's length bodies

Table 4 – Recommended actions arising from this scoping study

6.2 Conclusions

This study has revealed a pressing need to incorporate systems leadership and complexity more fully and consistently within the training and development of public health registrars in the UK and to establish a culture of CPD and lifelong learning for post-qualification public health consultants.

There remains a fair degree of ambiguity and uncertainty about the nature of systems leadership and the underlying conceptual and empirical evidence base, even amongst established professionals, which suggests a need to develop a repository of readily-available resources and evidence, and to extend access to training and development more widely. Given the significance of the public health specialty curriculum in determining the structure, content and assessment of training and development for registrars across the UK this is an obvious point at which to intervene in order to enhance engagement with, and uptake of, systems leadership development opportunities. Particular attention is encouraged with regards to placements (including scoping, duration and responsibilities) and the role of the educational supervisor and locally-based leaders. Those consulted during the project stressed the importance of registrars being able to experience and engage in systems leadership in practice, and the potential variability of learning opportunities between locations.

It was recommended that all registrars should have direct experience of systems leadership in complex and politicised environments at some stage during their training, and the opportunity to learn through reflection on experience (including learning from mistakes), which would increase their capacity to make the transition to consultant once they qualify.

The literature review and stakeholder engagement highlight a range of factors that impact on the likely effectiveness and outcomes of the public health training programme, some linked to the local enabling environment and some to the wider context of public health. It was noted that public health, as a profession, is undergoing a significant period of change that poses both threats and opportunities. A systems approach, informed by principles of complexity and systems change, was advocated as necessary and important for public health to secure influence at local, regional and national levels.

A number of principles informing a systems-based approach to learning and development are outlined, along with an indicative developmental framework for public health professionals, extending beyond the formal registrar training programme into the role of public health consultant.

The report concludes with a series of recommendations and suggested actions to be taken forward by PHE, FPH, HEE and other relevant partners. We hope that this document provides a valuable resource for those involved in the development and accreditation of public health professionals in the UK and a timely

call to action. Please do not hesitate to contact the authors should you wish to explore any of these issues further.

> *"Is there any realistic hope that a sufficient number of skilled system leaders will emerge in time to help us face our daunting systemic challenges? We believe there are reasons for optimism. First, as the interconnected nature of core societal challenges becomes more evident, a growing number of people are trying to adopt a systemic orientation […] Second, during the last thirty years there has been an extraordinary expansion in the tools to support system leaders […] Last, there is a broad, though still largely unarticulated, hunger for processes of real change." (Senge et al., 2015)*

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