Title: Workforce Intelligence and the future care requirements of an ageing population.

Interview with Professor Alison Leary and Sally Hardy (April 7th 2025).

Background: Understanding Future Workforce Needs

Professor Alison Leary MBE, working as a NICHE collaborating partner, leads our Workforce Intelligence Network (WIN) workstream. As Professor of Healthcare and Workforce Modelling at London South Bank University Alison has led multiple workforce-related projects both in the UK and internationally, including work with the World Health Organization.

Working with Alison and her team brings a level of expertise to better understanding how data can be used to address population health and care needs in Norfolk and Waveney area, particularly taking into consideration requirements of coastal and rural communities. Alison's work with NICHE is helping forecast future care demands, especially considering the area's rapidly ageing population.

Norfolk is projected to have one of the oldest population profiles in England. Over the next decade, it's expected to see an increase of 50,700 people aged over 65. By 2041, the number of people aged 85+ is expected to double (Norfolk Insight, 2025). The British Geriatrics Society highlights that one in five people in England will soon be over 65, with men expected to live to 88 and women to 91 on average (Oliver, 2014). This demographic shift brings significant challenges, particularly in addressing complex chronic health conditions, social isolation, and increased demand for dementia, palliative, and community-based care. These demands place considerable pressure on primary care services to provide continuity for patients aged 75 and older.

SH: What's the purpose of WIN, and what insight has the data revealed so far?

AL: *WIN aims to apply workforce intelligence methods, commonly used in other industries, to healthcare. The intention was to use routinely collected data to support informed decision-making in Norfolk and Waveney. However, that's proven difficult, partly because this approach is still seen as unconventional in healthcare. Lots of people in healthcare collect the data, but not all use data.*

In contrast to industries like aviation, nuclear energy, or retail—where business intelligence is central—healthcare tends to focus on retrospective data and doesn't always use it effectively. Many healthcare professionals collect data, but few apply it meaningfully. Our work uses data to explore equity issues (e.g. workforce race and disability profiles) and patient safety, such as linking workforce changes to hospital mortality rates (Pereira et al., 2025).

SH: Your workforce equity report highlighted unique patterns in Norfolk—what did you find?

AL: *Norfolk's workforce doesn't reflect the national profile, especially in terms of ethnic diversity, even in Norwich. Ethnic minority representation is mostly among newly qualified staff, which*

raises retention concerns. There's a "boomerang" pattern: new staff stay a couple of years, leave, and often return later in their careers. This results in a dip in mid-career professionals, identified as the most proficient group in turn affecting continuity and quality of care. We're also doing predictive modelling to understand future service needs in North Norfolk, which is ageing rapidly. This includes analysis of local authority and Office of National Statistics (ONS) data, as well as systems thinking work with a General Practice (GP) in Great Yarmouth. Often, healthcare only examines parts of a service, but we're looking at the whole system to support long-term planning.

SH: There are many global reports that highlight workforce shortages. What are your views on workforce planning in healthcare?

AL: *The workforce is ageing while demand is rising. The traditional NHS approach uses "activity" as a proxy for workload, which doesn't reflect complexity of the work taking place. This often leads to cost-based decisions, such as diluting skill mix, such as hiring more staff at lower grades, which can negatively impact outcomes. Our upcoming WIN paper shows how these decisions are linked to higher mortality.*

Healthcare productivity should consider effectiveness and outcomes, not just activity. In industries like aviation, they evaluate risk and safety comprehensively. In contrast, healthcare often overlooks the value of experienced staff and the critical coordination roles; like nurses acting as care organisers or "project managers" of people's complex care needs.

SH: What about Allied Health Professions (AHPs)? Is there sufficient data on their contributions?

AL: *Unfortunately, no. While AHP data collection has begun, it's insufficient for detailed analysis. Unlike nursing, which is broadly split into registered and support roles, AHPs include 42 different professions. There isn't yet the granularity in the data to track their specific interventions or impact. With THEO, (NICHE Workstream 2) we'll gather some signals from AHPs, but not enough for rigorous analysis.* So this is one of the things we are really looking at with THEO project, to see whether there is a model of nursing, whether primary nursing (Manthey, 1980) or another model, that will hopefully help reduce length of stay, and we are hoping to look at that evidence with THEO.

SH: Who should be hearing about these insights? How do we influence change?

AL: *We must share our findings through publications, but getting them in front of the right decision-makers is challenging. Change is unlikely without local interest and political will. That's why our work with Norfolk coastal communities is so important.*

Despite low social care vacancy rates, demand is high. District nursing and rehabilitation services are crucial for keeping people out of hospital, and we need to invest in an agile, community-based workforce. If I could invest in one area, it would be social care.

I often compare this to flying: you wouldn't board a plane if the pilot only had minimal training and relied heavily on autopilot. Similarly, healthcare needs experienced professionals who can

make nuanced decisions under pressure. Delegating to less qualified staff adds a supervisory burden, causing stress and anxiety for registered professionals. We've published research showing how this impacts their wellbeing (Leary et al., 2024).

SH: I read a study recently on Lebanese nurses experiencing high anxiety and physical strain due to poor working conditions (Elbejjani et al., 2020), so that echoes global workforce concerns.

AL: *Absolutely. I regularly hear from distressed professionals. Basic working conditions, such as not being able to take breaks, no where to take them except in their cars for example, these stories are unacceptable. Leaders often dismiss these as minor issues, but they significantly impact performance, intention to stay and wellbeing.*

SH: So how do we move forward with our WIN evidence-based recommendations?

AL: *We continue to produce strong evidence and engage those in positions of power, the decision makers and commissioners. Globally, there's a shortage of healthcare workers, and the usual response is to cut corners on safety. But we must draw a line.*

The most effective care models invest in district nursing and general practice. Workforce decisions need to be based on actual demand, not just short-term financial constraints. Unlike other industries that consider risk and consequences, healthcare is still overly driven by annual budgets.

That said, I'm optimistic about our work in Great Yarmouth. Their openness to systems thinking and demand-led planning is refreshing. There's genuine appetite for change there—and they've read the research!

SH: Thank you, Alison.

Professor Alison Leary MBE, is a NICHE collaborating partner leading our Workforce Intelligence Network (WIN) workstream. She is Professor of Healthcare and Workforce modelling, at London South Bank University, and had undertaken several projects considering workforce demands in this country and overseas, engaged often in her role as Senior Consultant at the World Health Organisation. We are really pleased to be working with Alison, and her team to help understand the requirements of our

population health and care needs, across the Norfolk and Waveney, coastal, rural communities.

Our interview took place on 7th April, 2025, where we discussed what her work with us in NICHE was indicating, particularly when considering the future care requirements of an ageing population. Within the Norfolk geography, the population is projected to have an older profile than any other area across England. Estimates identify an increase over the next ten years is expected to reach 50,700 people over 65, and by 2041 this is anticipated to double in terms of the number of people living to be 85+ years (NorfolkInsight, 2025). According to the British Geriatric Society, one in. 5 people in England will be over 65, and men on average will live until they are 88, and women 91 years (Oliver, 2014).

This ageing population profile therefore brings with it a care requirement that needs to consider complex chronic care needs, alongside social risks of deprivation and loneliness, which requires additional dementia, palliative and community engagement to enable people to live independently with multiple conditions, which places considerable demand on primary care to provide continuity of care for people over 75.

I asked Alison what the purpose of undertaking WIN was, and what the data is revealing in terms of useful insights into the current situation in our Norfolk and Waveney geography and what actions need to be taken to address these from a workforce perspective?

AL: *Many different industries use this kind of intelligence to look at workforce, but also to look at their capacity. The idea really was to work with this (Norfolk and Waveney) locality to use their routinely collected data, or another data as it came available to inform decision making. However, it has not worked out like that. One of the issues I think is that (NICHE and the WIN project) is quite an unconventional way of offering to work for people who work in healthcare looking at workforce modelling. It is very normal in other industries, and we do use it a lot in healthcare, but people don't always see the potential of it. It is used a lot in critical safety industries, (such as nuclear, aviation, or transport, chemical processing) or even areas like retail. As it's a form of business intelligence in those industries, but healthcare doesn't really do business intelligence in the same way. So a business intelligence approach to workforce would affect everything from strategic planning to informing decision making and operational management of different aspects of the business. But it's an unusual thing in healthcare. Plus with healthcare data there is quite a lag, (in terms of using retrospective data). Lots of people in healthcare collect the data, but not all use data.*

Data informed decision making is quite unusual I think, but we have been using data to look at issues of equality (e.g. NHS workforce race, equality and disability profiles). We have looked at issues of safety, through looking at mortality rates (via Summary Hospital level Mortality Indicator) and the workforce, and particularly changes in the workforce and how that effects mortality. This is all in a paper we have submitted for publication (Periera et al, 2025).

SH: In terms of equity in the workforce you mentioned – what were the sorts of things the report identified – it was a long and detailed report you did for us, which is on our NICHE website and came from routinely collected data.

AL: *We find the same things that probably are not that much of a novelty actually – the workforce in Norfolk doesn't really reflect the rest of the country, particularly urban conurbations, even in areas like Norwich. There are fewer ethnic minorities, apart from in newly qualified personnel. Which raises a question for me about newly qualified staff staying in the area – or are they moving on?*

SH: If I remember correctly, the pattern is they stay for first couple years, then move away, and then towards end of their careers they start to come back again.

AL*: Ah, so boomerang. And that is very much reflected in the data that you see, it used to be a lot easier in nursing particularly because people were 19 when they went into nursing, and that's a bit harder now, because how long people have been qualified compared to their age, but you do see a sort of boomerang, which were called binomial, like a sort of camel's back shape (where there are two humps) and the issue for the workforce is that we are losing the mid career people, who are identified as the most proficient workers*

SH: What do you mean by mid career?

AL: The people who have been qualified a few years, and either they drop out at that point, or they are going somewhere else, and then coming back. It is not quite clear in the data because we don't know, but you know that you've got that kind of dip, as a loss of proficient workers.

Then we are looking at the request of some citizens, where we are doing some predictive modelling of what services are going to be needed in the North Norfolk coastal area, in the future, because it is the fastest aging place in the country. We have also looked at the Office of National Statistics and some local authority data, looking at what services might be needed. And then, the other project we working on with a general practice in Great Yarmouth, where we are doing some systems thinking work

with them. So quite often in health care people look at parts of something, parts of a service, or they look at process, but they are very rare.

We know that the workforce is smaller, when responding to Mike Richards (2019) report. The workforce is ageing, and the population is ageing. So it's a risky scenario. Demand is likely to go up and up, actually quite sharply, over the next 10 years. So what we are doing is once we have finished the predictive modelling, we are going to run different scenarios about different things happening and then that will help people maybe make some decisions about what kind of workforce they are going to need, how they are going to attract people. Plus, the interaction with other services. So one really interesting thing, was looking at where there is going to be a big need for carers in Norfolk, but what stops people doing those jobs. And partly it's the aging people in Norfolk, but also things like transportation. It's really interesting talking to the people who run the buses in North Norfolk and also thinking about some strategies that are used in other industries.

SH: We have had recent news that the NHS England is going to be abolished, (NHS Confederation) am I correct that they use a supply and demand approach to workforce modelling?

AL: *NHS England use activity as a basis for workload, which we have had for a long time and isn't a good reflection of workload. Basically, they identify how many people they can afford, which is why there is a tendency to dilute the workforce skill mix, because then you can have more people for less money. This has significant drawbacks, and the paper we are about to publish shows this, that these issues are effecting mortality, when you choose to do that.*

A straightforward view of productivity is inputs over outputs - so it's not even economical, it is the amount of work that is done for the amount of money that is spent. I always liken it to air traffic control and only count the number of planes that take off, as being productive. It's a bit like areas in retail, where you're really just looking at activity, you're looking at the amount of work being done. The amounts of units moved, which in retail is fine, because you know just what that many tins of beans have been sold. But you don't look at outcomes – that's quite risky for healthcare, when using that type of approach to productivity. Generally, it's in the critical industries that think more in terms of effectiveness. The quality of work done, for the money. So value , but the NHS see costs, not value.

SH: Value in terms of human capital, those sorts of values , or value still as a cost benefit?

AL: *I will do 20 of this, and they all go well, rather than trying to do 100, and 20 of them don't go well, so I then have to pay for that 20, and I am going to use more resources fixing that 20. So it's not just about costs, they look at the spreadsheet how much things cost, not their value. I mean, it certainly is in terms of productivity and in terms of work, so when you have a more task focused taylorist view of work, you know it's a production line, we will do X, Y, Z and then you lose sigh of what is actually, really really important work that might not be seen as important, but it is important. For example, for nursing one important aspect is the organisation of care. Nurses are organisers of care. Nurses are care project managers, and they know what all the other people are doing, at least they used to. So this is one of the things we are really looking at with THEO project, to see whether there is a model of nursing, primary nursing (Manthey, 1980) or another model, that will hopefully help reduce length of stay, and we are hoping to look at that evidence with THEO.*

SH: We have talked about the focus of nursing with THEO, and the data is there, but am I right in saying we haven't been able to look at Allied Health Professions contributions as the data is less available for us to make any inferences about care outcomes?

AL: *Yes, if you think the outcomes of THEO in terms of what we are looking for, is essentially the impact of expert nursing practice and its effect on efficiency, does it reduce length of stay for example, certainly when we look at specialisms, if you have access to advanced care specialists, who is case managing your work – you will get seen quicker. We see this in cancer pathways, you are more likely to survive a year longer – but we don't know that specifically for inpatient work. What we do have is a baseline in the data. So when you have got a registered nurse, and you have support workers, they started to collect data for AHPs, but it doesn't tell you the kind of things we need to know, as AHPs are a tiny fraction of the care delivery process, even if they are doing nursing jobs. There is not the collective of AHPs to fully understand what they are doing, it is not really recoded anywhere in the data, which makes it really difficult to then say, well actually, look, there is four hours of AHP input here, and this is all the interventons for that type of AHP. Whereas nurses, we have got two groups basically, registered and non registered. With AHPs there are 42 different groups of people to consider. It's not that you couldn't do it, but it is not the data we are collecting with THEO. We would need to do a step before that and also probably through THEO be able to pick up signals from them because we know there are going to be AHPs around. So we will start to pick up signals I think from our two ward areas, but we couldn't achieve a quasi experimental design using that small amount of data.*

SH: Going back to the horizon scanning you mentioned earlier, who do you think needs to hear the evidence of what we find? How are we to get that work across the right people's desks? What is your advice?

AL: It is obvious we need to disseminate the findings, with the usual routes of publication. But I think with policymakers, it is hard, as you can get the work on their desks, but will they read or listen? If there is local interest or there is a lack of appetite for that then change will not happen. That is one of the reasons we are doing that piece of work with the Norfolk coastal communities. I think that is actually key. It is clear that community services in Norfolk are constrained. Although it is interesting that the vacancy rate is low in social care, which surprised me somewhat – but the demand is there, so you wonder what's going on. What will help people stay out of hospital is district nursing and rehab re-enablement, those I think get a real sense of what is needed looking at the data - these things will expand, and you will need a workforce. If I could put money in anything it would be social care, it would be that group as a really agile worker.

I mean if you turn that around and think about would I get onto a plane if I had this generic worker, that had some knowledge of flying – but relied heavily on autopilot – and didn't have the education and flight experience to address justifiable deviance, should something go wrong. Other things you can teach, but healthcare is not a factory where everything is the same size, or predictable, so you need discrimination judgement to do things well. You have to decide what to do and what not to do, and that's increasing in healthcare. And the way you do that with less risk, is by having experienced people do the work.

SH: I always argue, you can have 55 males, aged 55 with diabetes, but each will have a unique experience of that issue so there is not uniformity across a disease specification either.

AL: *Not at all, you've got a human with a problem whatever. And then who is going to help them, as all those people will have different experiences, different training and the diversification and optimisation of the workforce I think has actually been quite grim, because essentially, its meant that - one, there isn't any consistency, and the other is that the delegation model that is really common now delegating work to less, lower paid, lower qualified workers brings a supervisory burden to the registered professionals. We have published a paper on that , you know these people are being asked to supervise more and more inexperienced and less qualified people and its gives them anxiety (Leary et al, 2024).*

SH: I was reading something this morning a paper about Lebanese nurses, who are experiencing anxiety and they found there was a lot of musculoskeletal disease associated with temporal and high task allocation, and low team work climate (Elbejjani et al, 2020).

AL*: I have an inbox full of distressed people on a daily basis. I have no problem calling it 'frontline', because they are suffering quite often. The way leaders are responding is that this is just basic workforce hygiene issues, not being able to sit anywhere to take breaks, or have a drink after 12 hours, you cannot expect people to work under those conditions, and be good performers.*

SH*:* So what can we do about this? What can we give people in terms of the evidence about workload and workforce intelligence?

AL: *We make evidence driven recommendations. We can try and get our evidence in front of the right influential people. Certainly, the problem that the UK faces although it's got some very specific problems is not unusual. There is a global shortage of health care workers. So the response is generally to compromise on safety. But there is a line. I think an open debate about where that line would be is really important, because I've seen the line go down. Over the last 10 years, I have seen that risk appetite increase, and that line to go down. Where you want to keep people out of hospital, you need district nurses and general practice.*

Since I have been doing this work, 15-20 years now, nursing has always been the biggest part of the workforce so they usually get targeted first, and it's usually the highest paid ones that are targeted, but I think it's not unique to nursing, you see that a lot in industry too. But there are consequences to that in terms of government systems are driven by tight financial cycles, and political will, so if you know and have this sense of over or undersupply, it's because it's so tightly tied to financial cycles, year on year. Finances drives workforce not demand or labour. But you get a little bit more in other industries, actually of thinking about what sort of workers are needed, what kind of who is doing what, where and why is that important – a risk and consequence type of conversation.

I am really excited by the work with the Great Yarmouth practice, and surrounding areas, though I think that is going to be a really good project. We will do some soft systems modelling and system thinking, as they are really into demand and failure – John Seddon's (Vanguard) work, we have already had some great conversations, there is real appetite. They have read the work, which is a pleasure for me.

SH: Thank you Alison.

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