Profile of the UK prosthetic and orthotic workforce and mapping of the workforce for the 21st century

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Foreword

It has been long accepted that prosthetic and orthotic workforce data was inadequate despite actions taken to improve data collection. The commissioning and delivery models for many services mean that workforce data has not been visible across the UK. For small but vital professions this creates risk to informed workforce planning and therefore to workforce supply pipelines. This project was commissioned to offer an anchor point for workforce data to allow for real time data to be offered into the Long Term Workforce Planning process this year.

This project offers us a step change and I applaud the courage of Peter Iliff (Chair BAPO) and Lynne Rowley (Prev. Chair BAPO) who both laid the foundations for this work and for Peter courageously accepting the commission and working so closely with Dr Nicky Eddison and the team at Staffordshire University to complete this crucial work. Since our first workforce summit in 2017 which was led by Andy Sharman from Health Education England and, in collaboration with BAPO, work has continued to push forward on growing our numbers of prosthetists, orthotists and technicians. The subsequent review by Gill Rawlinson meant that the profession has made significant progress, moving from two universities training the future workforce in the UK to four, including a pre-registration MSc at Keele University, a level 3 apprenticeship to create a recognised programme to develop prosthetics and orthotics technicians and a degree level apprenticeship completing a further route for individuals to become HCPC registered prosthetists and orthotists.

Leadership across the profession is invaluable, with key leaders like Juliet Sturgess and Dr Nicky Eddison driving transformational work to deliver new workforce solutions. We are indebted to everyone driving change with people and populations to improve access to high quality prosthetics and orthotics.

This workforce review is the first study to explore the entire UK P&O workforce across all sectors and present findings on staff numbers, geographics, demographics, employment, career plans, satisfaction, skills, and education. This work has already impacted future workforce planning in England and I am exceptionally grateful to the research team led by Nicky Eddison and Staffordshire University for the thoroughness of their work and to every single colleague and organisation who generously responded to our requests for information.

Thank you.

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List of abbreviations

AE	Above elbow
AFO	Ankle foot orthosis
AHP	Allied health professions
BAPO	The British Association of Prosthetists and Orthotists
BE	Below elbow
BHTA	The British Health Trades Association
ED	Elbow Disarticulation
FO	Foot orthosis
FOI	Freedom of Information
HB	Health Board
HCPC	The Health and Care Professions Council
HEE	Health Education England
HEI	Higher education institution
HKAFO	Hip knee ankle foot orthosis
ISPO	The International Society of Prosthetic and Orthotics
KAFO	Knee ankle foot orthosis
LGBTQ+	Lesbian, gay, bisexual, transgender, queer, and others
NHS	The National Health service
NOMAG	The National Orthotic Managers' Association Group
P&O	Prosthetic & Orthotic
PO	Prosthetist/Orthotist
SD	Shoulder Disarticulation
WHO	World Health Organization

Executive summary

This report has been created by the research team at the Centre for Biomechanics and Rehabilitation Technologies (CBRT) at Staffordshire University. The report was commissioned by the British Association of Prosthetists and Orthotists (BAPO) and funded through Health Education England's Allied Health Profession (AHP) Workforce Reform Priorities Project. It is formed into two parts. The first part is based on information from surveys and freedom of information requests, and is titled 'Exploration of UK prosthetic and orthotic (P&O) workforce'. The second part is titled the 'Prosthetic and Orthotic Profession for the 21st Century'.

Previous work established the benefits of prosthetic and orthotic services, identifying significant health and quality life benefits for patients, financial benefits for the NHS and economic benefits for the wider health economy. These benefits flow when patients can access P&O services in a timely and effective manner, supported by an appropriately skilled and available workforce.

The 'Exploration of UK prosthetic and orthotic (P&O) workforce' forms a landmark report, which has captured and described a deficit within UK P&O, in the clinical, technical and support workforce. By World Health Organization standards an additional number of between 142 to 477 prosthetists and orthotists are needed, with 1,133 to 1,803 extra technicians and support workers required. Employers reported significant issues in recruiting staff. Over the last five years between 47-58 students have graduated annually from the established pre-registration BSc courses, and although numbers cannot be accurately forecast additional students will graduate from two new programmes delivered by Keele University and the University of Derby.

The prosthetic and orthotic profession have been on the UK's shortage of occupations list for many years, although now removed even though there doesn't appear to have been a positive change in the workforce numbers. A concerning theme is that 20% of prosthetists and orthotists (POs) who responded to this study reported they 'definitely do not' or 'probably do not' plan to remain in the UK P&O workforce. This is aligned with other research, with one study that reported 37% of a sample of orthotists indicating that they would leave the profession if they could, and HCPC reporting 12.5% of POs have left the HCPC register within four years of their first registration (the highest rate amongst all professions on the HCPC register).

The risk of early year attrition is highlighted by the data, with only one of the six prosthetists in the 21-25 years age group and five of the twenty-two prosthetists in the 26-30 years age group, indicating that they would definitely remain in the workforce for the coming years. For orthotists in their early years of service (21-35 years), the percentage of those who would definitely or probably leave the profession ranged from 17.3% to 28.6%. There was no clear evidence to link the intention to leave to those with caring responsibilities. A higher percentage of privately employed prosthetic and orthotic workers (24.1%) reported that they would definitely or probably leave the UK P&O workforce within five years, compared to their NHS-employed counterparts (16.7%).

To make the required contribution asked of AHPs and aligned to the NHS Long Term Plan, the workforce requires additional skills and knowledge, in areas that include mental health and wellbeing, trauma informed care and public health.

With 62% of POs employed by private providers who deliver a sub-contracted service to NHS providers, not being employed by the NHS does lead to issues, including complicating the process of collecting workforce data. Also, formal workforce roles, such as Advanced Clinical Practice, appear to be poorly understood by the privately employed workforce, with staff operating outside the NHS career framework and Agenda for Change bandings. The report suggested that the workforce strongly associated an advanced level of practice with competency in delivering the more technically complex orthotic or prosthetic devices, as opposed to the broader concept of practicing at a higher level, within each of the four pillars of practice. Consequently, few clinicians reported having skills in research and management/leadership, skills which are required to fulfil HCPC's standards of proficiency and ensure an evidence-base underpins clinical practice.

In addition to early year attrition, there is an issue with a proportionally high ageing workforce approaching retirement. Almost 20% of technicians were aged 56-60 years which suggests a substantial age-related risk to the sector. The survey only identified a very small support worker population, which may offer a significant and affordable route for future workforce expansion. Specifically, almost a third of support workers felt they did not currently have the skills to carry out their job, whilst a similar number of support workers reported having skills that are not used. There are opportunities to train and develop support workers, as part of a strategic response to the workforce shortage.

The report on the 'Prosthetic and Orthotic Profession for the 21st Century' develops themes within the workforce survey. Looking at P&O in the context of AHP Modernisation and Reform it references previous work highlighting the workforce shortage, a problem compounded by high levels of all groups of workers in the sector considering leaving their roles within the next five years, including 37.4% of the clinical staff, 69.7% of technicians and 18.8% from the small sample of support workers.

The most significant factors leading clinicians to consider leaving included a lack of career progression, work/lifestyle balance and the ability to earn more elsewhere. Some themes were more influential amongst prosthetists and these included lack of flexibility in hours worked, not feeling valued as a member of the team and poor treatment from managers and colleagues. Similar theses were reported by technicians and support workers.

The report highlights the makeup of the registered workforce, which in the main is qualified via the BSc route from the University of Salford and the University of Strathclyde, and reference the new programmes emerging from Keele University (MSc) and the University of Derby (Apprenticeship). A small number of technicians and support workers aspire to higher education. 43% of support workers expressed an interest in progressing to become registered P&Os which the new apprenticeship programme could support.

The report lists a long list of skills that POs believe will be useful in the future and these include a range of technical skills, understanding of microprocessor componentry and 3D imaging, and softer skills relating to communication and the being able to deliver person-centred care. Areas identified where there was a lack of knowledge included prescribing rights, being able to carry out mental health and wellbeing checks and advanced clinical skills. Reported areas with a shortage in technical knowledge included the use of artificial muscle, robotics and prosthetic neuro-implants.

Respondents reported concerns that traditional craft skills were not lost to more modern virtual techniques. It was noted that many of the clinical assessment skills registrants thought to be required, do not form part of the pre-registration curriculum, with examples including muscle stretching/strengthening programmes, serial casting or wound care. The report suggests that to keep up with other AHPS, more POs should develop the skills and knowledge to undertake mental health and wellbeing checks and contribute to support the public health goals embraced by the NHS. It was noted that access to prescribing rights will enable POs to have greater impact across the many clinical pathways where they are engaged. The potential impact should be explored.

Drivers for the future demand for prosthetic and orthotic care in the UK include the ageing population and associated increase in disability, where the forecasted increased prevalence in diabetes and MSK conditions will increase demand for P&O. There is also the potential for long covid to impact demand, where mobility is affected.

With a highly probable increase in the number of people who will require care and current shortages in the workforce (142 to 477 POs and 1,133 to 1,803 P&O technicians and support workers) steps will be required to mitigate this undersupply of prosthetic and orthotic care.

Key findings to be addressed are:

- The clear gap in the current and required skills for the future P&O workforce.
- A significant number of the P&O workforce have reported they are considering leaving the profession, due to the lack of progression, work/life balance, ability to earn more elsewhere and work/case load.
- The P&O workforce shortage which impacts the ability to meet the current and future needs of the population.

Peter Iliff
Chair, British Association of Prosthetics and Orthotics

Key highlights

- There are 631 orthotists and 295 prosthetists currently employed in the UK; the current ratio for the number of prosthetists/orthotists (POs) for the population is 1 orthotist per 106,181 population and 1 prosthetist per 227,119 population. An additional 142 to 477 POs are needed to meet the World Health Organization (WHO) recommendation of 15–20 POs per million population.

- There are 877 non-clinicians (819 P&O technicians and 58 P&O support workers) currently employed in the UK. Although the support workforce might be defined differently in various countries, an additional 1,133 to 1,803 individuals are needed in the UK to meet the WHO recommendation that each PO is supported by two non-clinicians.

- The NHS currently employs 328 POs and private companies employ 535 POs, with 13 POs employed by higher education institutes. This accounts for 876 of the 1164 Health and Care Professions Council (HCPC) registered POs, the employment of the remaining 288 POs is unknown.

- Over half (57%) of all POs in the private sector are employed by three companies (Blatchford, Opcare, and Steeper).

- Private sector P&O companies do not have sufficient historical records (last five years) of their P&O workforce in terms of numbers, whole-time equivalents, and vacancies.

- Nearly half (43.5%) of UK NHS Trusts/Health Boards and 57% of private companies who had P&O workforce vacancies reported that they had not been able to recruit.

- A fifth of POs who responded to the workforce survey reported that they "definitely do not" or "probably do not" plan to remain in the UK P&O workforce for the next 5 years.

- POs appear to lack the knowledge/skills to carry out mental health and wellbeing checks and provide trauma informed care.

- A lack of skills/knowledge of public health is evident in the P&O workforce.

- The P&O workforce has demographic diversity:
  - POs identifying as transgender is equal to the national average.
  - POs reporting to have a disability is higher than the average across the AHP workforce.
  - POs identifying as LGBTQ+ is higher than the national average.
  - The P&O workforce is made up of 26 different nationalities
  - The P&O workforce can speak 31 languages.

- There appears to be a large number of students applying to UK P&O registration courses. However, the number who meet the criteria for entry appears to be small.

- On average 54 students graduate each year with eligibility to register with the HCPC and practice as a PO.

- Almost a third (31%) of support workers felt they did not currently have the skills to carry out their job and 31% felt they could be better utilised and have skills that are not being used.

Background

Who is the P&O workforce?

Within the P&O workforce there are three categories: (1) prosthetist/orthotist (PO), (2) P&O technicians, and (3) P&O support workers.

Who are prosthetists and orthotists (POs)?

There are 14 separate allied health professions (AHPs) within NHS England, and POs are the smallest of these professions. POs are protected titles in the UK and there are 1,187 (as of 1 March 2023) registered with the Health and Care professions Council (HCPC)[1]. POs use evidence-based practice to provide clinical assessment, prescription, technical design, and fabrication of prosthetic and/or orthotic devices. POs can transform the life of a patient by helping them to run, walk better, or simply stand without pain. They can help to reduce the risk of further deterioration of a patient's condition. Prosthetists and orthotists give back the power of movement to their patients, in a way that's as pain-free as possible, using the latest technology to create and fit prosthetic or orthotic devices.

Orthotists
Orthotic services are integral to many clinical care pathways and provide an essential impact on a range of clinical conditions in the health service priority lists. This includes, chronic diseases, trauma, neurological, musculoskeletal, and congenital conditions. Many of these are policy priorities for the government and the NHS[2]. Orthotists are autonomous registered practitioners who provide gait analysis and engineering solutions to patients with problems and conditions of the neuro, muscular, and skeletal systems. Their qualifications make them competent to design, manufacture and provide orthoses (such as insoles, braces, splints, callipers, footwear, spinal jackets, and helmets) that modify the structural or functional characteristics of the patient's neuro-muscular and skeletal systems. Enabling patients to mobilise, eliminate gait deviations, reduce falls, reduce pain, prevent, and facilitate healing of ulcers, and help people recover from or avoid injury or live with lifelong conditions[3].

Prosthetists
Prosthetists are autonomous registered practitioners. Prosthetists utilise gait analysis and engineering solutions to provide artificial limbs to assist people who have part or all of a limb missing. Their qualifications make them competent to design and provide prostheses that replicate the structural or functional characteristic of the patients absent limb[3]. The number of patients with an amputation or congenital limb deficiency attending specialist rehabilitation service centres in the UK is estimated at 55,000 – 60,000. NHS England spends approximately £60 million per year on these services[4].

1. The Health and Care Professions Council. Registrant Data and Statistics.; 2023. https://www.hcpc-uk.org/about-us/insights-and-data/the-register/
2. Eddison N, Scott DA, Pankhurst C, Chockalingam N. The challenge of service planning and development without adequate data: The case for orthotic services. J Eval Clin Pract. 2022;(November 2022):525-528. doi:10.1111/jep.13801
3. Health Education England. The Future of the Orthotic and Prosthetic Workforce in England. Response to the NHS England Report 'Improving the Quality of Orthotic Services in England.; 2017. https://hee.nhs.uk/sites/default/files/documents/Orthotic Report Final Version_0.pdf
4. NHS. Prosthetics Service Review.; 2023. https://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-d/rehabilitation-and-disability/prosthetics-review/

How are POs trained?

POs are extensively trained at the undergraduate level in biomechanics, material science, technical componentry, along with anatomy, physiology, and pathophysiology.

POs in the UK are trained via either:

- A four-year BSc (Hons) in prosthetics and orthotics course at the University of Strathclyde.
- A three-year BSc (Hons) in prosthetics and orthotics course at Salford University.
- A two-year prosthetic and orthotic master's course leading to registration as a PO is available at Keele University.
- A three-year prosthetic and orthotic degree apprenticeship via the University of Derby is another way to become a prosthetist or an orthotist.

How many POs are trained each year?

The data from Strathclyde and Salford universities from 2017 – 2022 indicate that on average 53 students (range 47-58) graduate each year with eligibility to register with the HCPC and practice as a prosthetist and/or orthotist. There are no graduates from the Derby and Keele programmes as yet, as these programmes have only recently been introduced. However, Keele University reported having the capacity to accept 20 students to their programme. The University of Derby did not disclose their programme capacity for apprentice their prosthetic and orthotic degree apprenticeship programme.

How is the training for the P&O workforce funded?

An NHS learning support fund (LSF)[5] is available for courses leading to registration as a PO, offering a training grant of £5,000 per academic year. The LSF included parental support of £2,000, if you have at least one dependent child under 15 years, or under 17 years if registered with special educational needs. Money back for excess travel and temporary accommodation costs (Travel and Dual Accommodation Expenses) while you're on your practice placement is also available. A range of scholarships are available for international students. Course fees for apprenticeships are funded by the employer.

Who are prosthetic & orthotic (P&O) technicians?

Prosthetic or orthotic technicians design and manufacture custom made devices to meet the specification/prescription determined by the PO. In prosthetics, these are an artificial limb (prostheses). In orthotics it can be a range of devices from diabetic footwear to spinal bracing (orthoses). Using the specification/prescription provided they make devices that aid movement, correct deformity, and relieve discomfort for adults and children. These devices are designed to replace, support, or improve the functioning of a limb or the spine. Technicians have an understating of the many clinical conditions requiring P&O devices including scoliosis, polio, spina bifida, multiple sclerosis, stroke, rheumatoid arthritis, diabetes, musculoskeletal injury, and cerebral palsy. Some patients who use the devices may have congenital conditions such as being born with a limb missing or a spine that has not formed fully; others have lost a limb through trauma from being in an accident or during military service; and others have lost a limb or part of limb due to disease as a result of their health condition e.g., diabetes, cancer, peripheral arterial disease.

Technicians are highly skilled individuals able to work with many different types of materials and processes to manufacture their devices using the appropriate materials and technologies. The work of a technician requires attention to detail as each device is bespoke to the patient, their conditions and functionality. As people's conditions and requirements change over time and technologies improve or change, their P&O devices will need adapting and replacing. Technicians work for the NHS, independent companies contracted to supply a service to the NHS, or work for a company that provides a private service direct to individuals. Some technicians work in a department based in a hospital environment or within a manufacturing unit on site or away from a hospital base[6]. The University of Derby introduced a Level Three Prosthetic and Orthotic Technician Apprenticeship in September 2022.

5. NHS Business Services Authority. NHS Learning Support Fund (LSF).; 2023. https://www.nhsbsa.nhs.uk/nhs-learning-support-fund-lsf
6. Institute for Apprenticeships and Technical Education. Prosthetic and Orthotic Technician.; 2023. https://www.instituteforapprenticeships.org/apprenticeship-standards/prosthetic-and-orthotic-technician-v1-1

Who are prosthetic & orthotic (P&O) support workers?

Prosthetic and orthotic support workers work with prosthetists and orthotists to deliver patient care, working under a range of supervisory arrangements which sometimes include guidelines and frameworks. Support worker responsibilities can range from performing routine tasks, such as welcoming and preparing patients for treatment, to direct clinical and support tasks such as administration, preparing clinics, evaluating P&O devices, preparing P&O orders, sourcing P&O products, or helping patients meet their care plans. Support workers are employed in the majority of AHP services, working with registered professionals providing care and treatment.

Useful links

https://www.hee.nhs.uk/our-work/prosthetics-orthotics
https://BAPO.com

Section 1: Exploration of UK prosthetic and orthotic (P&O) workforce

Introduction

Several reports[2,3,7–12] have highlighted the benefits of prosthetic and orthotic services. Including significant health and quality life benefits for patients, financial benefits for the NHS and economic benefits for the wider health economy when patients are able to access P&O services in a timely and effective manner. To achieve this, an appropriately skilled and available workforce is required. Research examining UK orthotic service provision in 2017[13] identified long appointment waiting times and lead times for footwear and orthoses, with the recent Covid-19 pandemic found to be adding to appointment waiting time issues[14]. POs had been on the UK's shortage of occupations list for many years, although they have been removed even though there does not appear to have been a positive change in the workforce numbers. To ensure the P&O workforce can meet the needs of the UK population who access their services, a detailed picture of the entire UK P&O workforce is required.

In 2017 a Health Education England (HEE) commissioned report was published which looked at the orthotic workforce[3]. The report presented data on the number of orthotists (356), dual practicing POs (44), orthotic technicians (478), orthotic support workers (43), and orthotic apprentices (1), from 34 private companies and 17 NHS Trusts. The report did not look at the workforce data from Scotland, Wales, and Northern Ireland. It did not provide data on prosthetists, or P&O students, and the report's focus was to present the number of staff in each staffing group, no details were provided on the demographics or the skills of the workforce. One report highlighted poor and incomplete national workforce data, reporting that difficulties collecting data from the commercial/private sector was a significant barrier[12]. Within the 2017 HEE report[3], and their follow-up report one year later[15] actions were set out to improve the quality of orthotic services in England. While the 2018 report stated that the majority of the actions from their planning event have been achieved, it is unclear if the new actions set out within this report were realised.

The HCPC produce monthly registrant data and statistics on POs, which provides information on gender, age, and application type (whether P&O training was completed in the UK or internationally). The latest report (March 2023) indicates there are 1,187 POs registered with the HCPC[16]. There is no available data for the number of P&O technicians in the UK workforce. However, there is NHS data indicating the number of P&O support workers employed by the NHS is 49. The data does not define what job roles have been included under the term 'support worker'. The data appears to include technicians, but it is not clear.

Thus, there is no available data which captures the entire P&O workforce in the UK. Also, the number of staff in each group provides only part of the information which is required. Stakeholders must have an in-depth understanding of the P&O workforce, their demographics, skills, and future work plans.

A recent paper stated that the orthotic profession within England and Wales may be facing a staff retention crisis, reporting that 37% (46) of the orthotists who took part in the study indicated that they would leave the profession if they could[17]. Also, a recent HCPC report[18] on attrition rates concluded that 12.8% (1 in 8) of POs have left the HCPC register within four years of their first registration. This rate was the highest amongst all the AHPs on the HCPC register.

2. Eddison N, Scott DA, Pankhurst C, Chockalingam N. The challenge of service planning and development without adequate data: The case for orthotic services. J Eval Clin Pract. 2022;(November 2022):525-528. doi:10.1111/jep.13801
3. Health Education England. The Future of the Orthotic and Prosthetic Workforce in England. Response to the NHS England Report 'Improving the Quality of Orthotic Services in England.; 2017. https://hee.nhs.uk/sites/default/files/documents/Orthotic Report Final Version_0.pdf
7. NHS England. Improving the Quality of Orthotics Services in England.; 2015. https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2015/11/orthcs-final-rep.pdf
8. Hutton JL, Hurry M. Orthotic Service in the NHS - Improving Service Provision. York Health Economics Consortium.; 2009.
9. NHS Scotland. Scottish Orthotic Services Review.; 2005. https://www.sehd.scot.nhs.uk/publications/dc20050614orthotics.pdf
10. Centre for Economics and Business Research. The Economic Impact of Improved Orthotic Services Provision.; 2011. http://www.bhta.net/sites/default/files/document-upload/2012/Orthotics_review_Cebr_report_04_07_2011.pdf
11. Business Solutions. Orthotic Pathfinder: A Patient Focused Strategy and Proven Implementation Plan to Improve and Expand Access to Orthotic Care Services and Transform the Quality of Care Delivered.; 2004.
12. Centre for Workforce Intelligence. Workforce Risks and Opportunities: Prosthetists and Orthotists.; 2012.
13. Chockalingam N, Eddison N, Healy A. Survey of Orthotic Service Provision in the UK: Does where you live affect the service you receive? BMJ Open. 2019;9(10):e028186. doi:10.1136/bmjopen-2018-028186
14. Eddison N, Healy A, Chockalingam N. How has the COVID-19 pandemic affected orthotic services in the United Kingdom? Prosthet Orthot Int. 2021;45(5):373-377. doi:10.1097/PXR.0000000000000031
15. Health Education England. The Future of the Prosthetic and Orthotic Workforce in England: One Year On.; 2018. Accessed November 8, 2018. https://hee.nhs.uk/sites/default/files/documents/The future of the prosthetic and orthotic workforce in England - one year on.pdf
16. The Health and Care Professions Council. Registrant Snapshot - 1 March 2023. https://www.hcpc-uk.org/resources/data/2023/registrant-snapshot-march-2023/
17. Prosser K, Achour N. Job satisfaction among NHS and private orthotists: a cross-sectional comparative study. British Journal of Healthcare Management. 2023;29(1):42-50. doi:10.12968/bjhc.2021.0081
18. The Health and Care Professions Council. Retention Rates of First Time HCPC Registrants 2013 to 2018.; 2023. https://www.hcpc-uk.org/resources/reports/2023/retention-rates-of-first-time-hcpc-registrants-2013-to-2018/

Review of available information on the P&O workforce

During this workforce review, data from the HCPC and other sources of data on the P&O workforce were analysed, with several gaps identified. The NHS do not record contracted P&O staff on their electronic staff record (ESR) and POs are not always correctly coded when they are added. Instead of using their protected titles, the NHS use the following terms:

- For Prosthetics and Orthotics Consultant Therapist / Scientist - SAI
- For Prosthetics and Orthotics Manager – S0I
- For Prosthetics and Orthotics Therapist – S1I
- For Prosthetics and Orthotics Technician – S4I

Often, POs are not recorded on the ESR under the correct staffing group (AHPs), instead they are often coded as healthcare scientists or technical, which means they are often missed when looking at AHP workforce data in the NHS.

Current data from the HCPC diversity data report[19] is based on 31% of the registrants (346/1,114) and only looked at a small number of demographic characteristics. The data does not supply information on skills, place of work, salary, current role, or career goals. The HCPC data does not supply information for the wider workforce (e.g., P&O technicians and P&O support workers).

The data currently available on the P&O workforce is insufficient. This report details the findings of a UK wide P&O workforce review, which includes all P&O staffing groups.

This workforce review is the first study to explore the entire UK P&O workforce and present findings on staff numbers, geographics, demographics, employment, career plans, job satisfaction, skills, and education.

Methods

To complete this workforce review, the research team worked in consultation with industry stakeholders to encourage engagement from the wider P&O industry, to capture data, and to learn from previous work completed in this area. The stakeholders included:

- The British Association of Prosthetists and Orthotists (BAPO)
- The British Healthcare Trades Association (BHTA)
- The International Society of Prosthetics and Orthotics (ISPO)
- The Health and Care Professions Council (HCPC)
- The Australian Orthotics and prosthetics Association (AOPA)
- Higher Education Institutions offering P&O courses and apprenticeships (University of Strathclyde, University of Salford, Keele University, and University of Derby)
- National Orthotics Managers Association Group (NOMAG)
- Commercial providers of prosthetic and orthotic NHS services
- Private practice prosthetic and orthotic practitioners
- Global Cooperation on Assistive Technology (GATE)
- AHP professional bodies who have completed similar workforce projects
- UK prosthetists and orthotists
- UK prosthetic and orthotic support workers
- UK prosthetic and orthotic technicians
- UK prosthetic and orthotic students and apprentices.
- The National Health Service (NHS)

To gather the information required to create a detailed picture of the UK P&O workforce two surveys were devised 1) a survey for the UK P&O workforce 2) a survey for the UK P&O companies who employ P&O staff. In addition, freedom of information (FOI) requests were sent to every NHS Trust and Health Board (HB) in the UK and each higher education institute in the UK offering programmes for the P&O workforce.

19. Health & Care Professions Council. HCPC Diversity Data Report 2021.; 2021. https://www.hcpc-uk.org/globalassets/resources/reports/hcpc-diversity-data-report-2021.pdf?v=637689354700000000

Survey of the P&O workforce

To address the current gap, a survey was designed to capture the demographic characteristics of the entire UK P&O workforce. The survey was open from 4th October until 6th December 2022. The online survey was created using Qualtrics (Qualtrics International, USA) and distributed via social media, prosthetic and orthotics networks, BAPO, BHTA, the 2022 UK ISPO conference, NOMAG, HEE contacts, Salford University, Keele University, the University of Strathclyde, the University of Derby, and student representatives. A suite of videos from influential members of the P&O profession and stakeholders were created to help promote the survey via social media.

The survey was open to all UK based POs, P&O technicians, P&O support workers, and PO students/apprentices. The survey asked a range of detailed questions on the following parameters:

- Demographics (age, location, sex, gender, sexual orientation, nationality, ethnicity, marital status, disability, religion, caring responsibilities, language skills, and education)
- Plans for further education
- Career goals
- Skills – current and requirements for the future
- Populations they treat
- Employment, employer, working hours, work settings, salary
- Job satisfaction

Survey of private P&O companies

To address the current gap, a survey was designed to capture the number of staff employed by the UK P&O private sector. The survey was open from 4th October until 6th December 2022.

The P&O companies' survey was sent directly to our known stakeholders and distributed via a dedicated social media campaign. The survey asked a range of questions on the following parameters:

- Which P&O staff groups they employ
- Number of employees and whole time equivalent
- Staffing data for the previous five years
- Number of current vacancies
- Vacancies data for the previous five years
- Recruitment issues

Freedom of Information request to all UK NHS Trusts/Health Boards

To address the current gap, an FOI was sent to all UK NHS Trusts/HBs (194) in October 2022, to capture the number of staff employed by the NHS. The FOI asked a range of questions on the following parameters:

- Which P&O staff groups they employ
- Number of employees and whole time equivalent
- Staffing data for the previous five years
- Number of current vacancies
- Vacancies data for the previous five years
- Recruitment issues

Freedom of Information request to Higher Education Institutes providing programmes for the P&O workforce

To address the current gap, in October 2022 an FOI was sent to the higher education institutes providing programmes leading to registration as a PO. FOIs were sent to Salford University, Strathclyde University, Keele University, and the University of Derby. The FOI asked a range of questions on the following parameters:

- Number of staff within each of the P&O staffing groups
- Level of education of staff members the P&O staffing groups
- Number of current students on PO programme leading to HCPC registration
- Age, gender, ethnicity, nationality, religion, and declaration of disability of current students on their P&O programmes
- Full and part time student numbers
- Mode of attendance e.g., in person or distance learning
- Number of students in receipt of a bursary or scholarship and funder
- Figures from the previous five years for number of students on the programme
- Skills and knowledge included in the curriculum
- Number of applicants over the last five years
- Capacity of the programme
- Plans for expanding capacity
- Number of students accepted on to the programme (previous five years data)
- Number of students who have graduated from the programme (previous five years data)
- Number of students who have successfully obtained a job as a prosthetist and/or orthotist (previous five years data)

Results - Overview
Survey of the P&O workforce

A total of 905 responses to the survey were received, a breakdown of the responses by staff grouping and students/ apprentices is provided in Table 1.

Staff group	Number of responses
Orthotist	419
Prosthetist	177
Dual practicing PO	45
Orthotic technician	46
Prosthetic technician	34
Dual practicing P&O technician	19
Orthotic support worker	11
Prosthetic support worker	3
Dual practicing P&O support worker	2
University student studying to qualify as a PO	140
Apprentice studying to qualify as a PO	6
Apprentice studying to qualify as a P&O technician	3

Table 1: Breakdown of responses from the survey of the P&O workforce by staffing groups, students and apprentices

At the time the survey responses were collected there were 1,164 HCPC registered POs[20]; responses were received from 641 POs, of which 633 were HCPC registered, equating to 54% of HCPC registered POs completing the survey (see Table 2).

20. The Health and Care Professions Council. Registration by Profession 1 December 2022.; 2022. https://www.hcpc-uk.org/globalassets/about-us/insights-and-data/registrants/2022/1-dec-2022---total-registrations.pdf

Respondents	Total	Female	Male	Unknown		
HCPC Registered POs (1 Dec 2022)	1164	613	490	61		
% of total		53%	42%	5%		
				Non-binary /third gender	Prefer not to say	Did not respond
HCPC registered survey respondents	633	302	237	1	19	74
% of HCPC registered POs	54%	49%	48%			

Table 2: Comparison of the number of PO responses to the workforce survey to the number of HCPC registered POs.

P&O workforce survey response rates:

- POs - responses were gathered from 641 POs which represented 74% (641/863) of the known workforce.
- P&O technicians - responses were gathered from 99 technicians which represented 12% (99/819) of the known workforce.
- P&O support workers - responses were gathered from 16 support workers which represented 26% (16/58) of the known workforce.
- PO students - responses were gathered from 140 university students studying to qualify as a PO, which represented 53% (140/262) of the known PO students.
- PO apprentices – responses were gathered from six apprentices studying to qualify as a PO, which represented 60% (6/10) of the known PO apprentices.
- P&O technician apprentices - responses were gathered from three apprentices studying to qualify as a P&O technician, which represented 19% (3/16) of the known P&O technician apprentices.

Survey of private P&O companies

Forty-eight private P&O companies responded to the survey, with 25 companies reporting employing one or more P&O staffing groups.

Unfortunately, the whole-time equivalent data from the companies could not be analysed as it was either not recorded or provided in a manner which was not useful for analysis. Similarly, the data over the previous five years could not be analysed because it was limited. Overall, private companies were not able to provide historical data over the previous five-year period.

Freedom of Information request to all UK NHS Trusts/Health Boards

A total of 181 responses, out of a potential 194, were received, equating to a response rate of 93.29%.

Freedom of Information request to Higher Education Institutes providing programmes for the P&O workforce

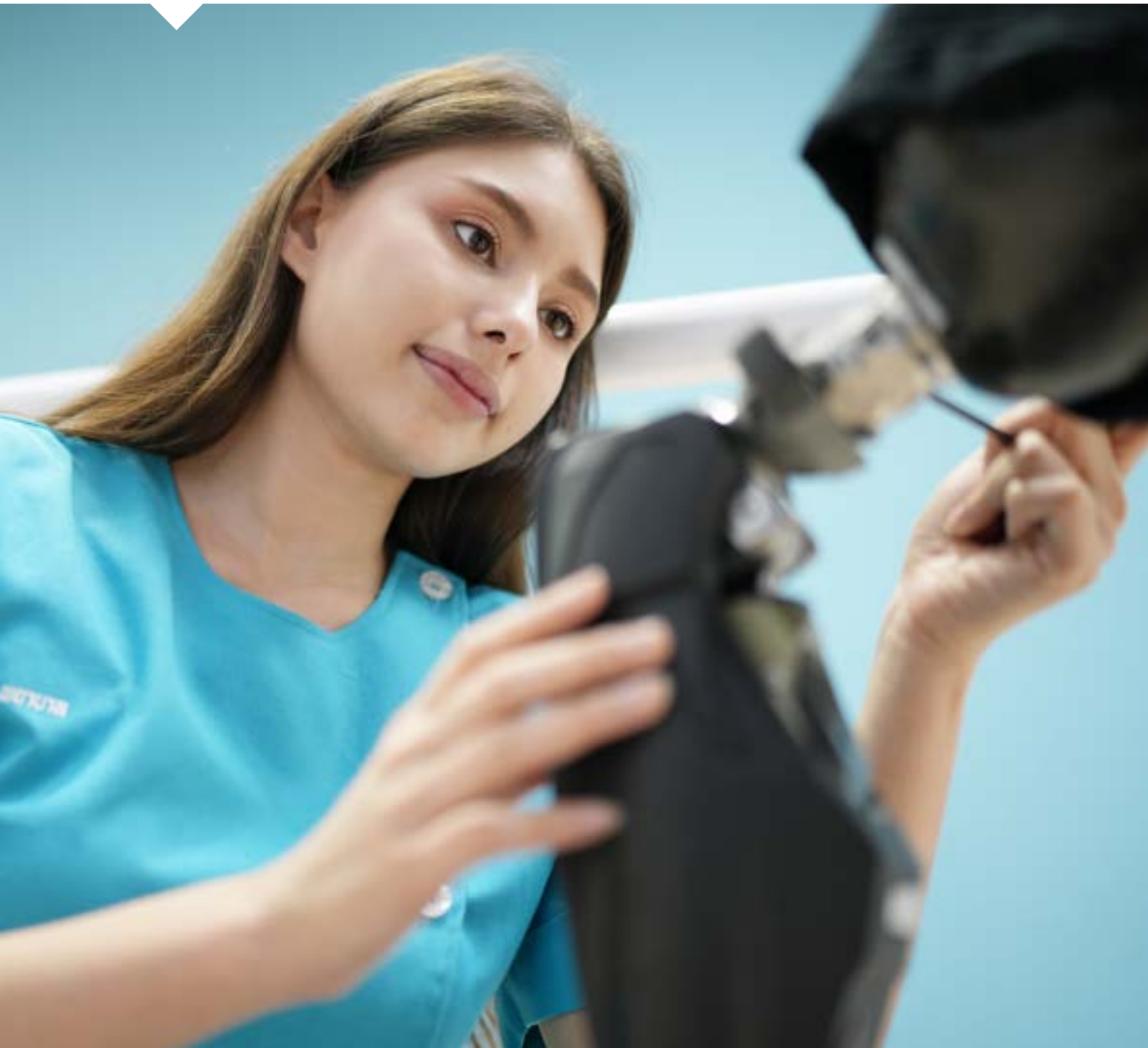
Responses were received from all four higher education institutions (Salford University, Strathclyde University, Keele University, and the University of Derby), with varied completeness of data across the institutions' responses.

How many prosthetic and orthotic services are in the UK?

Whilst there are some differences between various data sources available across the health systems and organisations, the information presented in this section is based on the responses from the freedom of information requests to the NHS Trusts/HBs.

Responses from the freedom of information requests to the NHS indicated that the NHS has a total of 54 in-house orthotic services; 41 in England, eight in Scotland, five in Wales and none in Northern Ireland. The NHS has 15 in-house prosthetic services, seven in England, five in Scotland, three in Wales, and none in Northern Ireland. Sixty-five of the 181 Trusts/HBs who responded reported that they have directly employed one or more of the prosthetic and orthotic staffing groups within the last five years. Forty of the 181 Trusts/HBs reported that they do not currently have or have had a prosthetic or orthotic service in the last five years. Seventy-six of the 181 Trusts/HBs reported their prosthetic and/or orthotic service has been contracted to an external supplier for the past five years.

The number of NHS services that currently have an in-house service reported that this model has remained relatively static over the last five years. It should be noted that NHS Trusts/HB who have not had an in-house P&O service within the last five years did not supply data.



How many people are employed in the P&O workforce?

The information provided in this section is based on the responses from the survey of private P&O companies and the freedom of information requests to NHS Trusts/HBs. See Figure 1 for a breakdown per UK country of the NHS employed P&O workforce and Figure 2 for the P&O workforce employed by private companies. The data shows that 35% of all P&O staff in the private sector are employed by four companies (Blatchford, OpCare, Ottobock, Steepers).

POs

The NHS currently employs 81 prosthetists, 243 orthotists and four dual practicing POs (see Figure 1). The private sector employs 151 prosthetists, 325 orthotists, 59 dual practicing POs (see Figure 4). An additional 13 POs are employed by higher education institutes. This accounts for 876 of the 1,164 HCPC registered POs. The employment of the remaining 288 POs is unknown. More POs are employed by private companies than the NHS (62% vs. 38%). Over half (57%) of all prosthetists and orthotists in the private sector are employed by three companies (Blatchford, Opcare, Steeper).

Regarding recommendations for the UKs requirement for POs there have been different numbers reported. The World Health Organization (WHO) reported in their 2017 Standards for Prosthetics and Orthotics[21] that in high-income countries the number of POs required is 15–20 per million population. This equates to 1,005-1,340 POs for the UK, the current number employed in the UK is 863 and therefore based on this recommendation an extra 142 to 477 POs are required.

An earlier report in 2005 by NHS Scotland[9] reported that BAPO stated that there should be 1,800 orthotists for the entire UK population, which at the time equated to a ratio of 1 orthotist per 30,555 population. There are currently 631 orthotists and dual practicing POs in the UK, and the current estimated UK population is 67 million, therefore the current ratio is 1 orthotist per 106,181 population. To have a ratio of 1 orthotist per 30,555 population then 2,103 orthotists are required, 1,563 more than are currently employed. There are currently 295 prosthetists and dual practicing POs in the UK which equates to a ratio of 1 prosthetist per 227,119 population.

The UK is not alone in this issue of having a lower number of POs for its population, reports from Australia in 2021[22] and the USA in 2015[23] has also highlighted the requirement for more POs in their countries.

P&O technicians

In total we have identified 819 P&O technicians in the P&O workforce. The NHS employs 68 prosthetic technicians, 102 orthotic technicians, and one dual practicing P&O technician (see Figure 1). The private sector employs 147 prosthetic technicians, 424 orthotic technicians, and 78 dual practicing P&O technicians (see Figure 2). Most technicians (63%) in the private sector are employed by five companies (Blatchford, Dacey, Opcare, Ottobock, Steeper).

P&O support workers

In total we have identified 58 support workers in the P&O workforce. The NHS employs four prosthetic support workers, 36 orthotic support workers, and one dual practicing support worker (see Figure 1). The private sector employs one prosthetic support worker, ten orthotic support workers, and six dual practicing support workers (see Figure 2).

The WHO Standards for Prosthetics and Orthotics[21] reported that each PO is normally supported by two non-clinicians (prosthetics and orthotics technicians and support staff), with the definition of support staff possibly being defined differently in various countries. For the UK population, this would equate to a requirement for 2,010-2,680 P&O non-clinicians. The current number employed in the UK is 877 (819 P&O technicians and 58 P&O support workers), and therefore and extra 1,133 to 1,803 P&O technicians and support workers are required.

9. NHS Scotland. Scottish Orthotic Services Review.; 2005. https://www.sehd.scot.nhs.uk/publications/dc20050614orthotics.pdf
21. World Health Organization. Standards for Prosthetics and Orthotics Part 2: Implementation manual. Published 2017. http://apps.who.int/iris/bitstream/handle/10665/259209/9789241512480-part2-eng.pdf?sequence=2
22. Ridgewell E, Clarke L, Anderson S, Dillon MP. The changing demographics of the orthotist/prosthetist workforce in Australia: 2007, 2012 and 2019. Hum Resour Health. 2021;19(1):1-10. doi:10.1186/S12960-021-00581-4/FIGURES/2
23. DaVanzo J, El-gamil A, Heath S, et al. Projecting the Adequacy of Workforce Supply to Meet Patient Demand. Published online 2015:34. http:www.iiofoandp.org/PDF/2015_Work_Study.pdf

P&O professions employed by the NHS

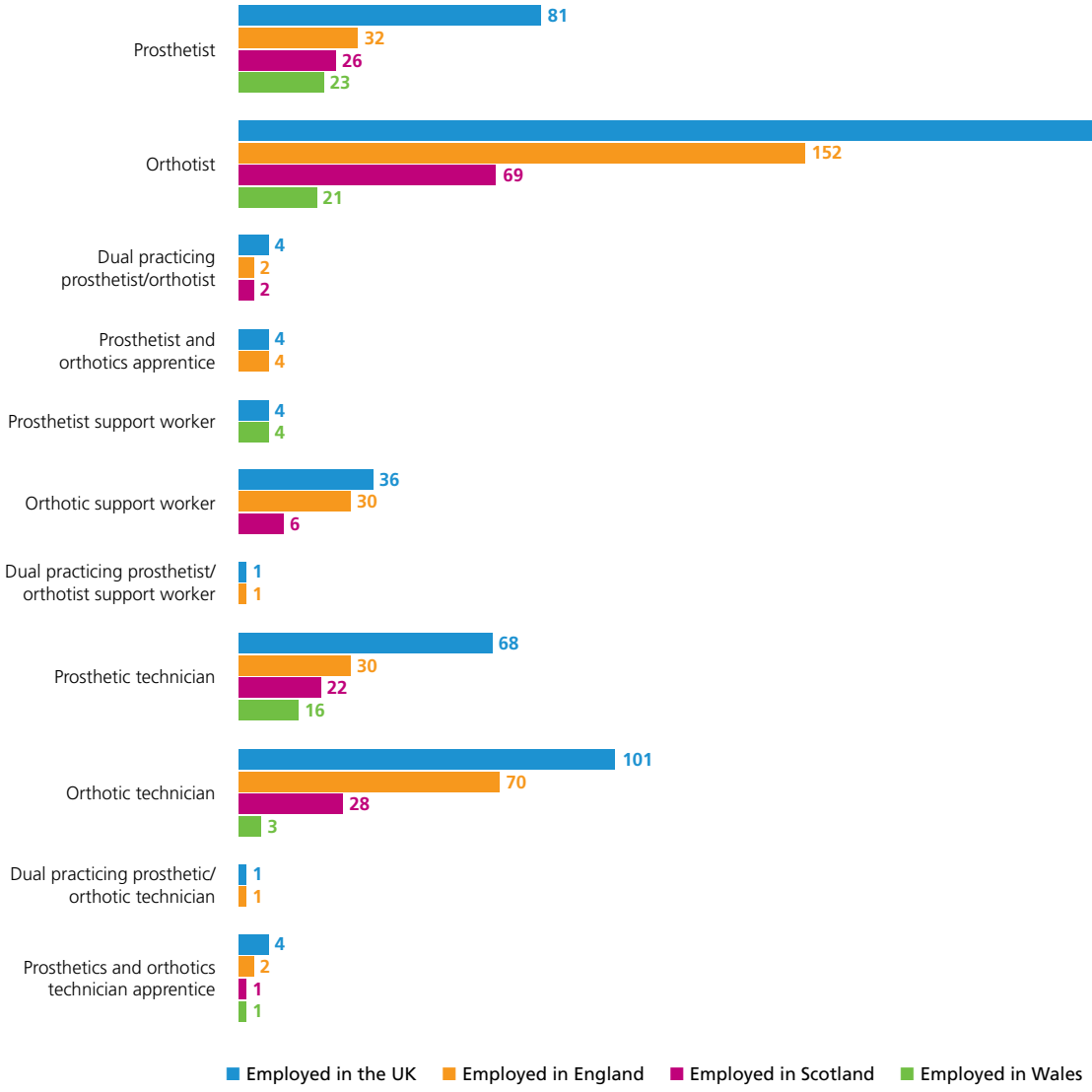


Figure 1: P&O professions employed by the NHS across the UK.

P&O professions employed by private companies

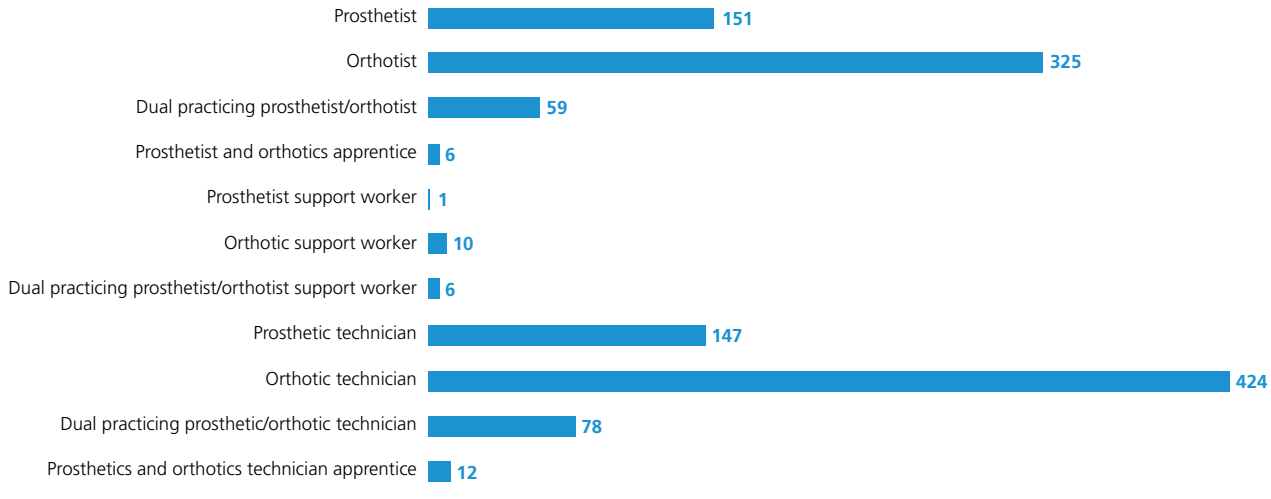


Figure 2: P&O professions employed by private companies.

How many vacancies are there in the P&O workforce?

The information provided in this section is based on the responses from the survey of private P&O companies and the freedom of information requests to NHS Trusts/HBs. There are currently 109 vacancies in the P&O workforce (see Figure 3). The NHS Trusts/HBs reported a total of 40 vacancies in the P&O workforce across 23/68 in-house services (see Figure 3). Close to half of Trusts/HBs (43.5%; 10/23) who had vacancies reported that they had been unable recruit. The private sector reported a total of 69 vacancies in their P&O workforce across 14/25 companies, with 57% (8/14) of companies reporting that they had been unable to recruit.

Only 1/68 Trusts/HBs and 3/25 private companies reported using international recruitment agencies for the P&O workforce. A total of five of the NHS P&O workforce and two of the private sector P&O workforce had been recruited from overseas.

Vacancies

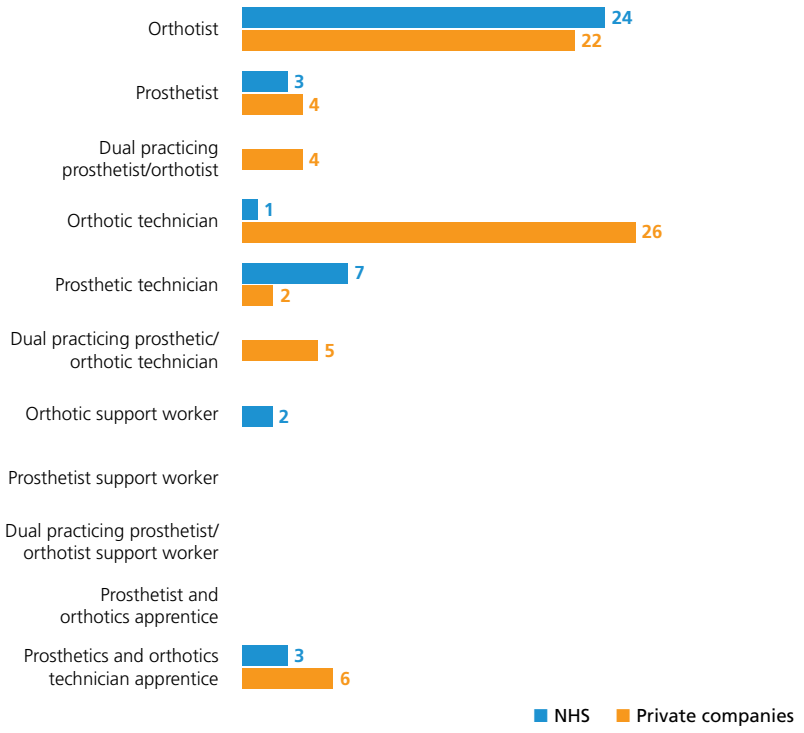


Figure 3: Vacancies within the NHS and private companies.

What are the demographics of the people in the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce. This section details the demographic characteristics of the P&O workforce. The characteristics presented are:

- Age
- Sex
- Gender
- Transgender identity
- Nationality
- Ethnicity
- Communication languages
- Sexual orientation
- Marital status
- Religion, belief, or non-belief
- Disability status
- Caring responsibilities
- Employment by geographical regions

POs

The breakdown of the ages of the PO survey respondents are presented in Figure 4 and Figure 6. A greater percentage of the prosthetist survey respondents were in the older age categories than the orthotist survey respondents.

For prosthetists, the highest number of respondents were in the 41-45 years category (16.4%), followed by 26-30 years and 31-35 years (both 12.4%). For orthotists, the highest number of respondents were in the 26-30 years category (16.5%), followed by 31-35 years (14.8%) and 36-40 years (12.2%). For dual practicing POs, the same number of respondents were in the 12-28 years, 26-30 years, 36-40 years, and 41-45 years categories (15.6% each).

The age at which the orthotists reported entering the profession ranged from 16-53 years, with most entering the profession between 21 and 23 years old (53.3%). The age at which the prosthetists reported entering the profession ranged from 15-42 years, with most entering the profession between 21 and 23 years old (54.8%). The age at which dual practicing POs reported entering the profession ranged from 16-53 years, with most entering the profession between 21 and 23 years old (62.2%).

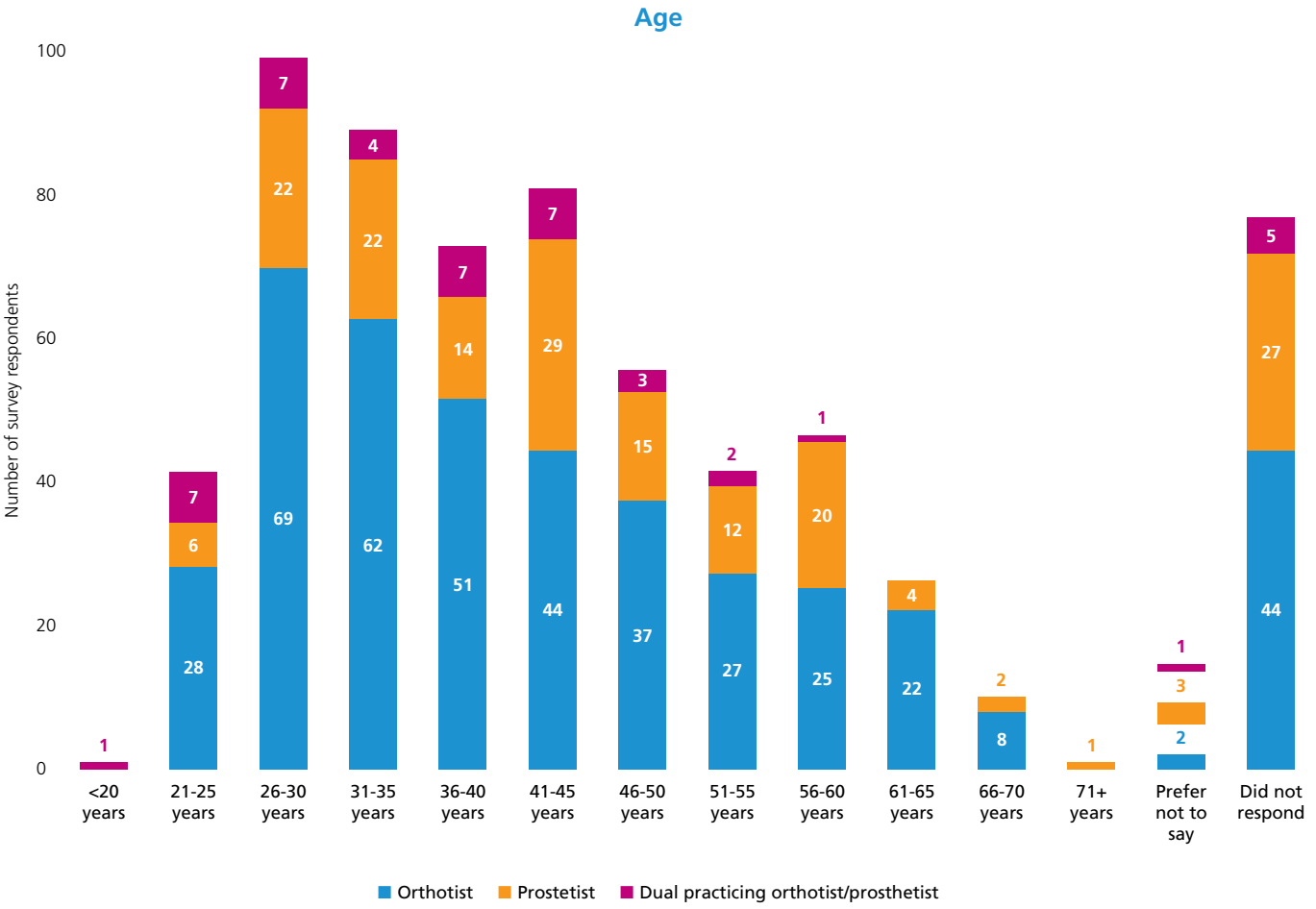


Figure 4: Breakdown of the ages of PO survey respondents.

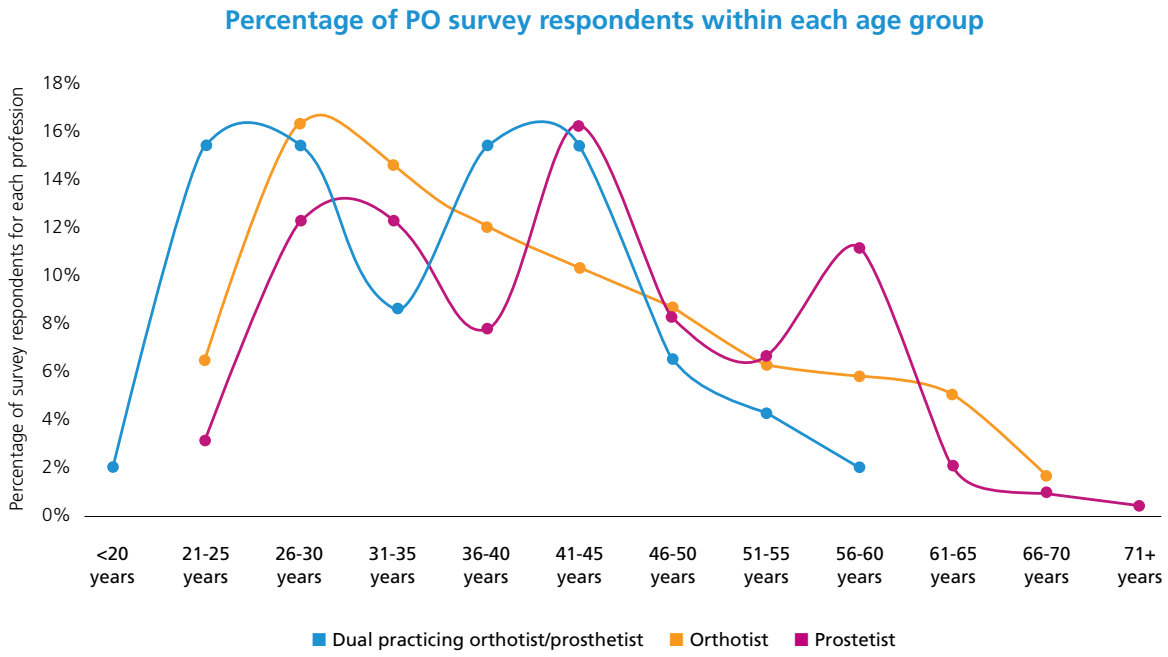


Figure 5: Percentage of PO survey respondents within each age category of PO survey respondents.

There was a similar response across the three professions for sex and gender (see Figure 6 and Figure 7), with a higher percentage of female and women respondents (Female: orthotist 46.8%, prosthetist 49.7%, dual practicing PO 46.7%; Women; orthotist 46.3%, prosthetist 47.5%, dual practicing PO 46.7%). A small number of respondents identified as non-binary/third gender and genderfluid. Three orthotists (0.7 %), two prosthetists (1.1%) and one dual-practicing PO (2.2%) identified as transgender (a total of 1% of POs). The recent HCPC diversity survey[19] reported that approximately 0.3% of the AHP workforce identify as transgender, and the national average is estimated to be 1% of the population[24].

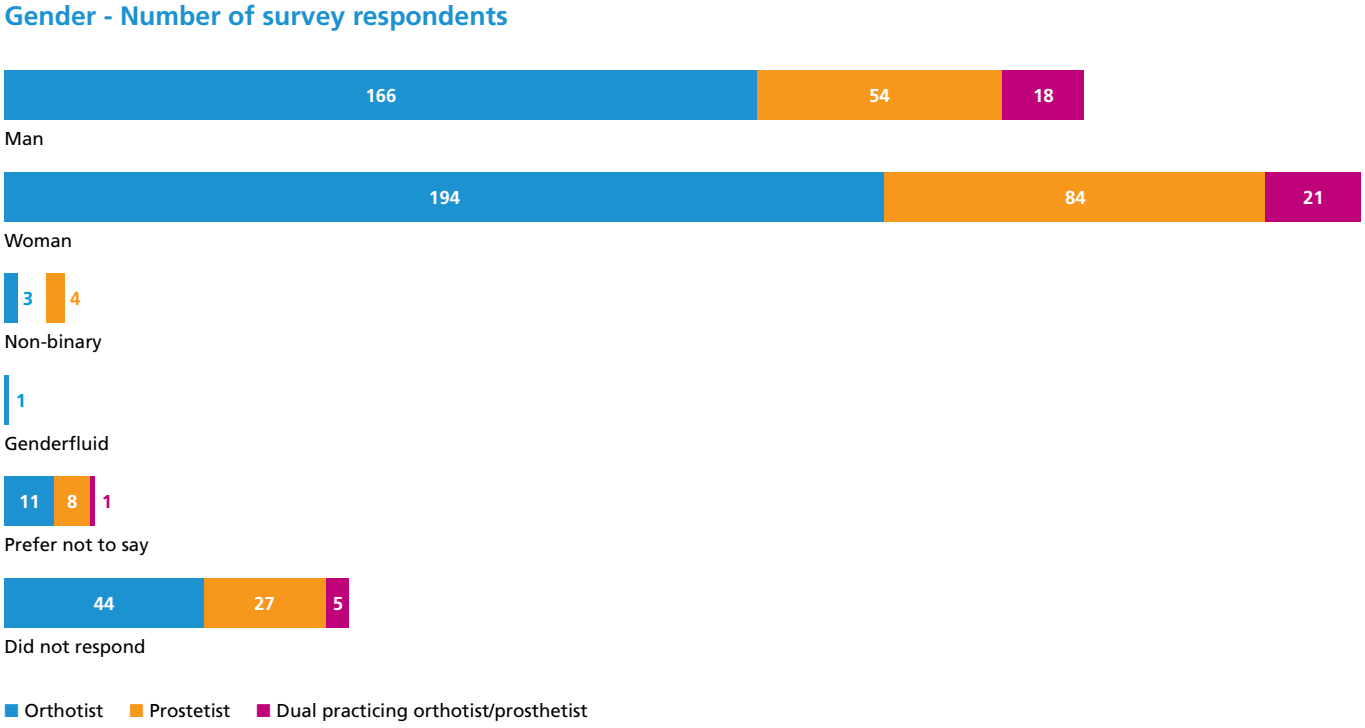


Figure 6: Gender demographics of PO survey respondents.

19. Health & Care Professions Council. HCPC Diversity Data Report 2021.; 2021. https://www.hcpc-uk.org/globalassets/resources/reports/hcpc-diversity-data-report-2021.pdf?v=637689354700000000
24. Stonewall. The Truth about Trans.; 2023. https://www.stonewall.org.uk/the-truth-about-trans#trans-people-britain

Sex - Number of survey respondents

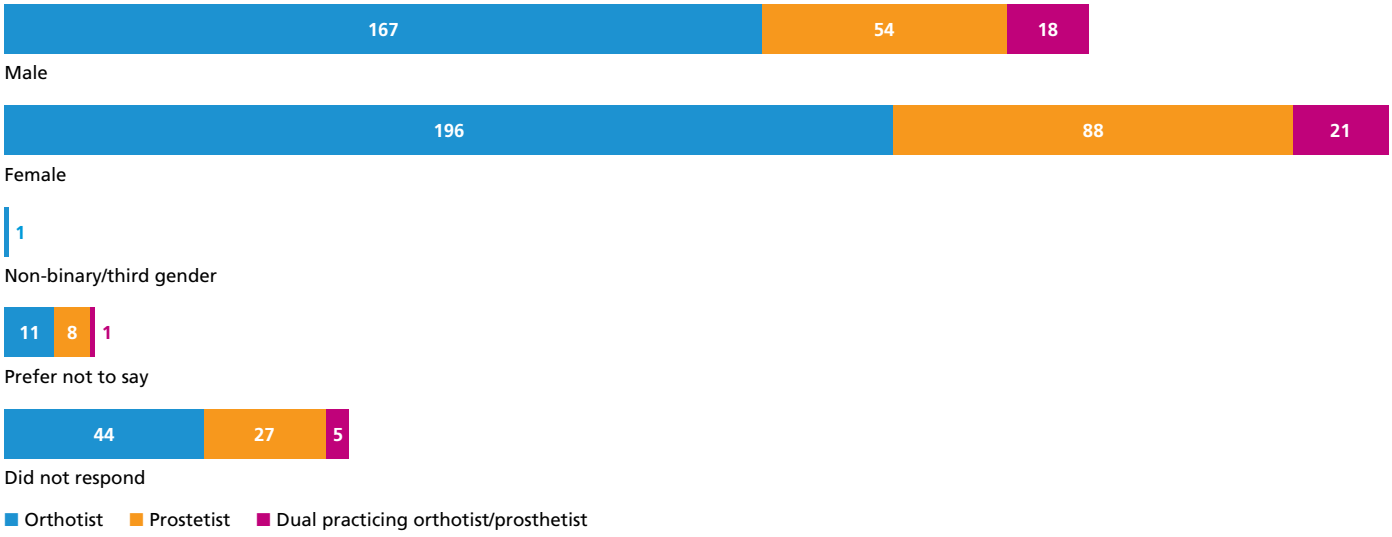


Figure 7: Sex demographics of PO survey respondents.

The PO survey respondents reported 26 different countries as their nationality (see Table 3); 79.5% of orthotists, 71.8% of prosthetists, and 57.8% of dual practicing POs identified as British, English, Scottish, Welsh or Northern Irish.

Nationality	Orthotist		Prosthetist		Dual practicing PO	
	Number	%	Number	%	Number	%
English	199	47.5%	66	37.3%	12	26.7%
Scottish	105	25.1%	45	25.4%	13	28.9%
Welsh	11	2.6%	4	2.3%		
Northern Irish	10	2.4%	5	2.8%		
British	8	1.9%	7	4.0%	1	2.2%
Irish	6	1.4%				
Australian	4	1.0%			1	2.2%
Portuguese	3	0.7%	4	2.3%		
American	2	0.5%	1	0.6%		
Bruneian	2	0.5%				
Indian	2	0.5%	1	0.6%		
South African	2	0.5%	1	0.6%	2	4.4%
Ugandan	2	0.5%				
Dual citizenship - British - Iranian	1	0.2%				
Dual citizenship - British - Pakistani	1	0.2%				
Iranian	1	0.2%			1	2.2%
New Zealander	1	0.2%				
Nigerian	1	0.2%			1	2.2%
Canadian			1	0.6%		
Dual citizenship - English - Cypriot					1	2.2%
Egyptian			1	0.6%		
Omani					1	2.2%
Pakistani					3	6.7%
Saudi Arabian			1	0.6%	1	2.2%
Swedish			1	0.6%		
Zambian			1	0.6%		
Prefer not to say	12	2.9%	10	5.6%	3	6.7%
Did not respond	44	10.5%	27	15.3%	5	11.1%
Invalid response	2	0.5%	1	0.6%		

Table 3: Nationalities of PO survey respondents.

The PO survey respondents reported 15 different ethnicities (see Table 4); 76.4% of orthotists, 73.4% of prosthetists, and 59.1% of dual practicing PO identified as White English, Welsh, Scottish Northern Irish or British.

Nationality	Orthotist		Prosthetist		Dual practicing PO	
	Number	%	Number	%	Number	%
White English, Welsh, Scottish Northern Irish or British	320	76.4%	130	73.4%	26	59.1%
White Irish	6	1.4%	1	0.6%		
African	5	1.2%	1	0.6%	1	2.3%
Mixed *(other)*	5	1.2%	1	0.6%	1	2.3%
Chinese	4	1.0%				
Indian	3	0.7%	1	0.6%		
Pakistani	2	0.5%			3	6.8%
Caribbean	2	0.5%	1	0.6%		
White and black Caribbean	2	0.5%			1	2.3%
White and Black African	2	0.5%				
White and Asian	2	0.5%	1	0.6%	3	6.8%
Arab	2	0.5%	2	1.1%	3	6.8%
White *(other)*	2	0.5%	3	1.7%		
White Roma	1	0.2%	1	0.6%		
Asian	1	0.2%				
Prefer not to say	14	3.3%	7	4.0%		
Did not respond	44	10.5%	27	15.3%	6	13.6%
Invalid response	2	0.5%	1	0.6%		

Table 4: Ethnicity of PO survey respondents.

Most respondents stated that English was their first language (84.7% of orthotists, 76.3% of prosthetists, and 71.1% of dual practicing POs). A total of 30 different languages (see Figure 8) were reported as being spoken by 33 (8%) orthotists, 17 (8%) prosthetists and 14 (31%) dual practicing POs. Urdu (11 respondents), Arabic, Portuguese and Spanish (7 respondents each) were the most frequently reported languages. When asked if they were proficient in communicating in sign language 7 (1.7%) orthotists, 2 (1.1%) prosthetists, and 3 (6.7%) dual practicing POs selected "yes".

Figure 8: Languages (other than English) spoken by PO survey respondents.

Most respondents identified as heterosexual; 75.7% of orthotists, 68.9% of prosthetists, and 73.3% of dual practicing POs (see Figure 9). The PO workforce appears to be diverse with 7.6% reporting to be LGBTQ+, which is higher than the AHP workforce average of 7%[19]. Comparing to the national data which shows Lesbian, Gay, and Bisexual to be average 3.1%[25], POs is higher at 5.6%.

19. Health & Care Professions Council. HCPC Diversity Data Report 2021.; 2021. https://www.hcpc-uk.org/globalassets/resources/reports/hcpc-diversity-data-report-2021.pdf?v=637689354700000000
25. Office for National Statistics. Sexual Orientation, UK:2020.; 2022. Accessed April 18, 2023. https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/sexuality/bulletins/sexualidentityuk/2020

Sex orientation - Number of survey respondents

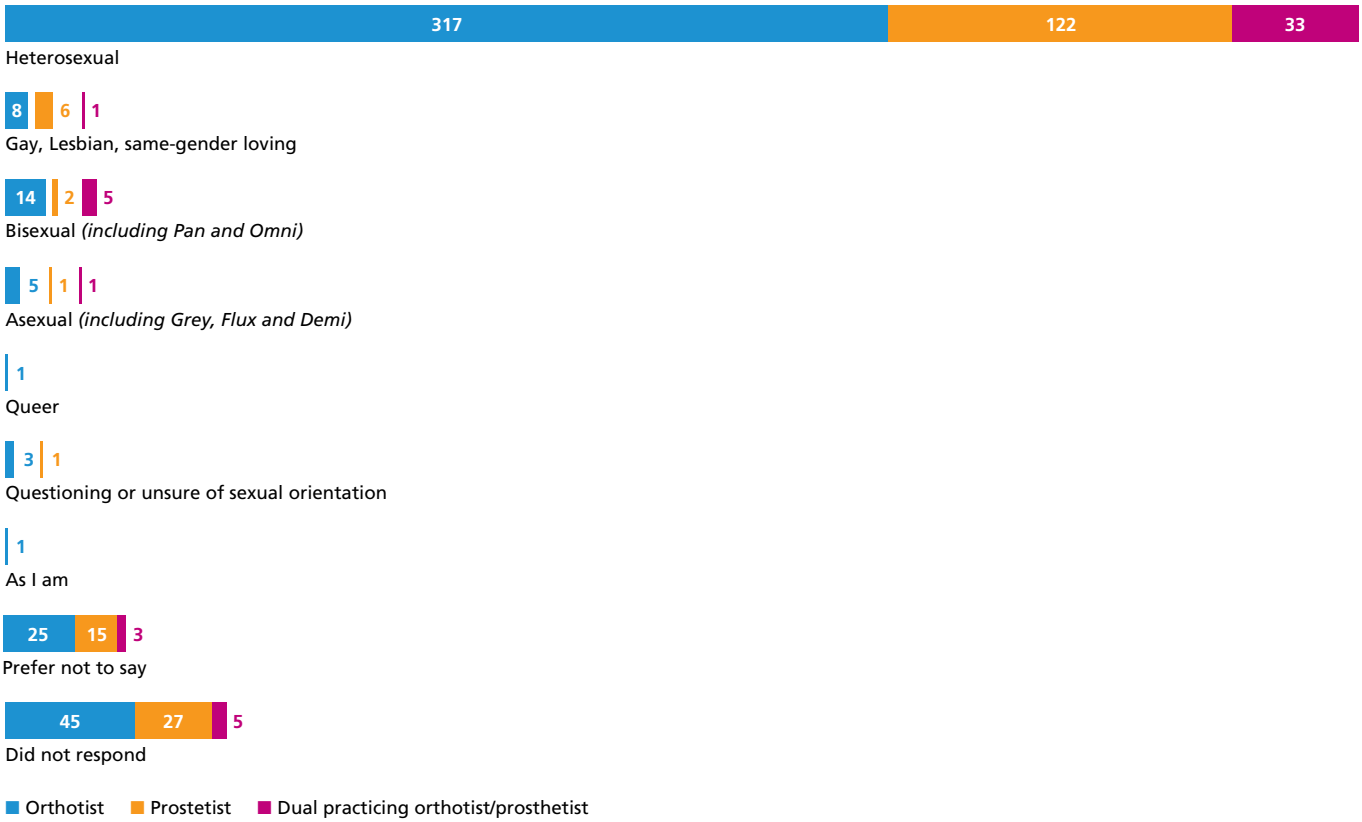


Figure 9: Sexual orientation of PO survey respondents.

Around half of the survey respondents were married; 50% of orthotists, 48.6% of prosthetists, and 55.6% of dual practicing POs, with being single and co-habiting the next highest responses, respectively (see Figure 10).

Marital status - Number of survey respondents

Figure 10: Marital status of PO survey respondents.

Christianity was the religion most reported by orthotists, prosthetists, and dual practicing POs, 31.7%, 27.1% and 42.2%, respectively, this was followed by no religion or belief, 21.5%, 25.41% and 22.2%, respectively. Atheist, agnostic, and Muslim were the next most selected responses (see Table 5).

Religion, belief, or non-belief	Orthotist		Prosthetist		Dual practicing PO	
	Number	%	Number	%	Number	%
Christian	133	31.7%	48	27.1%	19	42.2%
No religion or belief	90	21.5%	45	25.4%	10	22.2%
Atheist	67	16.0%	18	10.2%	1	2.2%
Agnostic	35	8.4%	20	11.3%	1	2.2%
Muslim	7	1.7%	4	2.3%	6	13.3%
Buddhist	6	1.4%	2	1.1%		
Humanist	5	1.2%			1	2.2%
Other	4	1.0%	3	1.7%		
Hindu	1	0.2%				
Sikh	1	0.2%				
Pagan	1	0.2%				
Jewish			1	0.6%		
Prefer not to say	25	6.0%	9	5.1%	1	2.2%
Did not respond	44	10.5%	27	15.3%	5	11.1%
Invalid response					1	2.2%

Table 5: Religion, belief or non-belief of PO survey respondents.

When survey respondents were asked if they considered themselves to have conditions, illnesses or disabilities that act as a substantial or long-term barrier to carrying out day-to-day activities, 11.2% of orthotists, 10.2% of prosthetists, and 15.6% of dual practicing POs selected "yes". On average 8% of the AHP workforce consider themselves to have a disability[19]. The UK government reports that 21% of working-age adults in the UK have a disability[26]. Regarding caring responsibilities of children and/or adults, including being a parent, 46.1% of orthotists, 41.8% of prosthetists, and 40% of dual practicing POs selected "yes".

The geographical regions where the survey respondents reported working are presented in Figure 11, with all regions represented for all three professions. For orthotists a smaller percentage reported working in England East (5.3%) and North East (7.9%), Wales (6%) and Northern Ireland (3.3%). Similarly for prosthetists a smaller percentage also reported working in England East (7.9%) and North East (4.5%), Wales (7.9%) and Northern Ireland (1.7%), as well as Yorkshire and Humber (5.6%).

19. Health & Care Professions Council. HCPC Diversity Data Report 2021.; 2021. https://www.hcpc-uk.org/globalassets/resources/reports/hcpc-diversity-data-report-2021.pdf?v=637689354700000000
26. Department for Work & Pensions. Family Resources Survey: Financial Year 2019 to 2020. https://www.gov.uk/government/statistics/family-resources-survey-financial-year-2019-to-2020/family-resources-survey-financial-year-2019-to-2020#disability-1

Where do you work?

Orthotist

Scotland	63	(15%)
Northern Ireland	14	(3.3%)
Wales	25	(6%)
North East	33	(7.9%)
North West	65	(15.5%)
Yorkshire and Humber	58	(13.8%)
East Midlands	50	(11.9%)
West Midlands	52	(12.4%)
East	22	(5.3%)
London	55	(13.1%)
South East	47	(11.2%)
South West	55	(13.1%)
Prefer not to say	8	(1.9%)
Didn't repsond	14	(3.3%)

Prosthetist

Scotland	23	(13%)
Northern Ireland	3	(1.7%)
Wales	14	(7.9%)
North East	8	(4.5%)
North West	26	(14.7%)
Yorkshire and Humber	10	(5.6%)
East Midlands	20	(11.3%)
West Midlands	12	(6.8%)
East	14	(7.9%)
London	27	(15.3%)
South East	24	(13.6%)
South West	16	(9%)
Prefer not to say	10	(5.6%)
Didn't repsond	11	(6.2%)

Dual Practicing othotist/prosthetist

Scotland	7	(15.6%)
Northern Ireland	2	(4.4%)
Wales	1	(2.2%)
North East	4	(8.9%)
North West	7	(15.6%)
Yorkshire and Humber	5	(11.1%)
East Midlands	4	(8.9%)
West Midlands	3	(6.7%)
East	4	(8.9%)
London	13	(28.9%)
South East	11	(24.4%)
South West	8	(17.8%)
Prefer not to say	4	(8.9%)
Didn't repsond	4	(8.9%)

Figure 11: Employment by geographical regions for PO survey respondents.

P&O technicians

Results were gathered from 99 technicians, of these 46 were orthotic technicians, 34 were prosthetic technicians, 19 were dual practicing P&O technicians. The age categories of the current technician workforce varied from 21 years to 65 years, with most (19.2%) in the 56-60 years category, followed with 17.2% in the 51-55 age group category. The age at which technicians entered the workforce was quite varied ranging from age 15 to age 56. Most were male (75, 76%), nine were female, three preferred not to say three (3%) identified as transgender, and 12 did not answer. Most selected their nationality as English (62.6%), followed by 14.1% as Scottish, 3% as British, 3% as Irish, 1% as American, 1% as Canadian, 3% preferred not to say, and 12.1% did not answer. Most (81.8%) selected their ethnicity as White English, Welsh, Scottish, Northern Irish or British, 2% as White Irish, 1% as Indian, 1% as Chinese, 2% preferred not to say and 12.1% did not answer. Nearly all (83.8%) stated that English was their first language, and a small number reported speaking Cantonese, French, Hindi, Mandarin, Punjabi and Urdu. None of the P&O technician workforce said they could communicate proficiently in sign language. Nearly three-quarters (71.7%) described themselves as heterosexual, 2% described their sexual orientation as gay, lesbian, same-gender loving, 1% described themselves as bisexual (including pan and omni), 11.1% preferred not to say, and 13.1% did not answer.

Around half (47.5%) of P&O technicians were married, 15.2% were single, 10.1% were cohabiting, 4% were divorced, 2% were civil partnered, 3% were separated, 6.1% preferred not to say, and 12.1% did not answer. Around one-third of P&O technicians (34.3%) described themselves as Christian, 32.3% said they had no religion or belief, 7.4% said they were agnostic, 6.1% were atheist. 1% were Sikh, 7.1% preferred not to say, and 12.1% did not answer. When asked if they considered themselves to have any conditions, illnesses or disabilities that act as a substantial or long-term barrier to carrying out day to day activities 11.1% selected "yes". Close to half (40.4%) of the P&O technician workforce reported having caring responsibilities.

All geographical regions were represented, with the most P&O technicians working in Yorkshire and Humber (18.4%), 14.6% worked in London, 13.6% worked in the England South East, 11.7% worked in Scotland, with the rest split across the other regions.

P&O support workers

Of the 16 respondents, 12 were female, three were male, one did not answer this question. Most of them (11, 69%) were orthotic support workers, three were prosthetic support workers and two were dual practicing P&O support workers.

The age categories of the support workers varied from 26-30 to 61-65 years; the highest number of responses (4) were in the 56-60 years category. The age at which the support workers entered the profession was widely varied, with the youngest starting at 21 years old and the oldest at 62 years, (39±12.1 years). No support workers identified as transgender. Most support worker (12, 75%) were English, one each was Scottish and British, one selected "prefer not to say" and one chose not to leave a response. The support worker respondents were not ethnically diverse, with 87.5% (14) selecting White English, Welsh, Scottish Northern Irish or British, one selected "prefer not to say" and one chose not to leave a response. English was the first language spoken by 87% (14), and one support worker reported being fluent in Italian. One support worker did not leave a response. No support workers reported that they are proficient in sign language.

Three-quarters (12) described their sexual orientation as heterosexual, one described their sexual orientation as gay, lesbian, same-gender loving and three chose not to answer. Regarding marital status, 43.8% (7) were married, 12.5% (2) each were divorced or co-habiting, and 6.3% (1) each reported being single, civil partnered, separated or engaged. Over half (9, 56.3%) described themselves as Christian, one was Buddhist, one was atheist, two said they had no religion or belief, and two preferred not to say. One support worker respondent considered themselves to have a condition, illness or disability that acts as a substantial or long-term barrier to carrying out day-to-day activities. Six support worker respondents reported having caring responsibilities, and one did not respond to this question.

The majority worked in the England East Midlands, England South East and England South West. No support workers were working in England North East, London, Wales or Northern Ireland.

The responses showed that more POs and P&O support workers are women, and more P&O technicians are men.

What are the experience levels of the P&O workforce and what are their and their parents' educational qualifications?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

The largest response for respondents' highest level of education (see Figure 12) was undergraduate degree; 57% of orthotists, 58.2% of prosthetists, and 40% of dual practicing POs. This was followed by postgraduate master's degrees; 13.1% of orthotists, 7.3% of prosthetists, and 28.9% of dual practicing POs.

Regarding their parents' education (see Figure 13), the largest responses were for undergraduate degree, secondary school up to 16 years (G.C.S.E. or equivalent), and higher/secondary/further education (A-levels, BTEC, etc.).

Highest level of education - Number of survey respondents

Figure 12: Highest level of education of PO survey respondents.

Parents' Highest level of education - Number of survey respondents

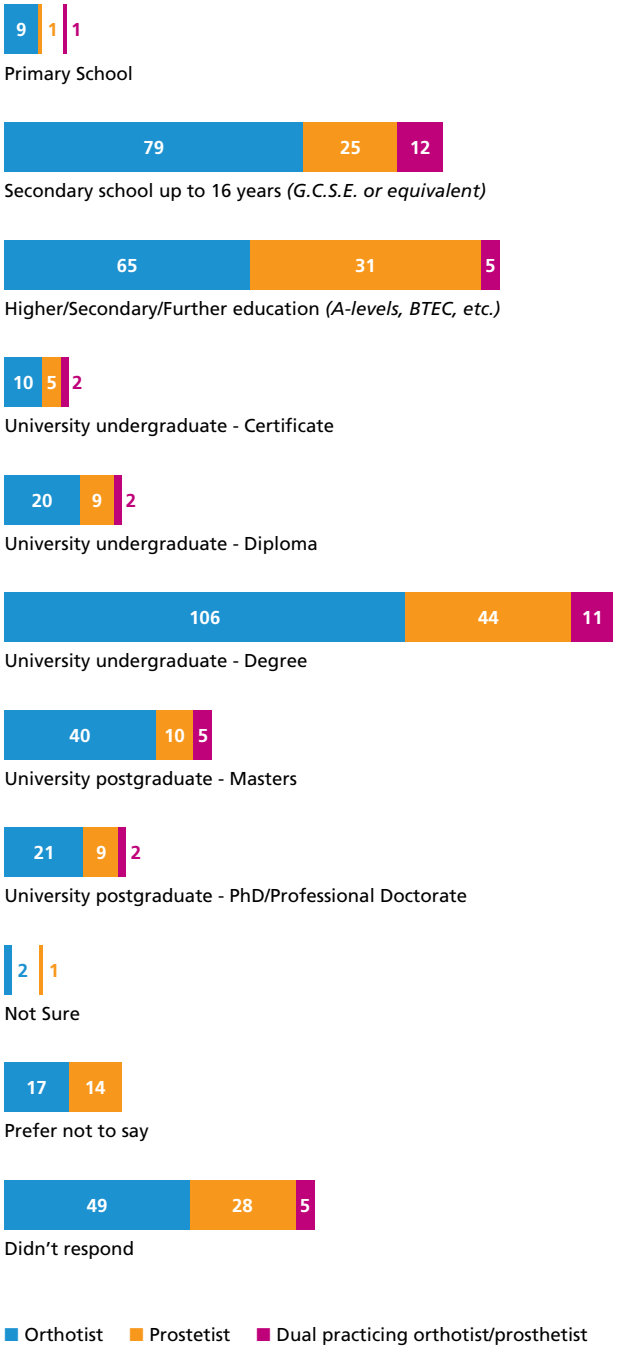


Figure 13: Highest level of education of PO survey respondents' parents.

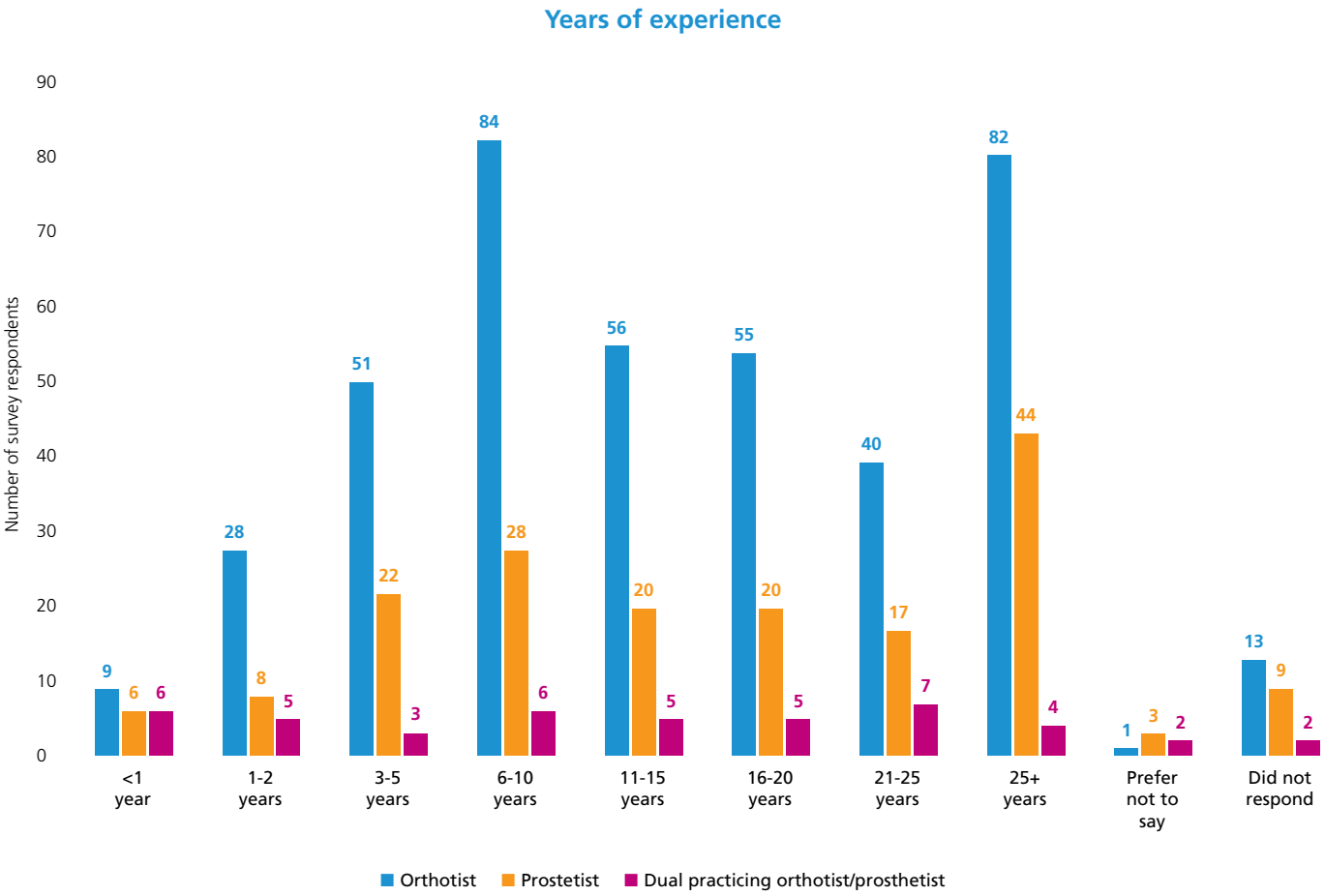


Figure 14: Years of experience of PO survey respondents.

P&O technicians

Regarding their highest level of education (87 responded), 37.9% (33) had achieved A levels/BTEC, 27.6% (24) secondary education GCSE or equivalent, 2.3% (2) had completed a master's degree. The remaining respondents had completed varying combinations of university foundation degrees, diplomas, postgraduate certificates and other institution diplomas (25), and 3 preferred not to say.

Of those 87 respondents, 86 then answered the same question relevant to their parents' highest level of education. Of these respondents, 37.2% stated that their parents' educational level was GCSE or equivalent, 22.1% A level or equivalent, 5.8% had a master's degree, 1.2% had a PhD, 17.4% preferred not to say, and the remaining were various university qualifications. Years of experience varied widely from <1 year to 25 years+, 38.5% (37) had 25 years+ experience.

P&O support workers

Higher/secondary/further education (A-levels, BTEC, etc.), was the highest level of education for the majority (56%) of respondents, followed by secondary school up to 16 years (G.C.S.E. or equivalent) (19%) and university undergraduate diploma (13%). Half of the respondents selected that their parents' highest level of education was secondary school. Their reported years of experience varied widely from <1 year to 25 years+, with most (6) having 3-5 years of experience.

Who are the people in the P&O workforce employed by, and what is their employment contract?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

The responses on employment from the P&O workforce survey were compared to the information received from the private company survey and the freedom of information request to the NHS Trusts/HBs to establish how representative the data was of the entire workforce (Table 6).

The data represents between 52.5% and 77.5% of POs employed by private companies and between 51.9% and 100% of POs employed by the NHS. More of the survey respondents were employed by private companies than the NHS (384 vs. 201 survey respondents) (see Figure 15). Three orthotists and one prosthetist indicated that they were employed by both the NHS and a private company. Most PO survey respondents had a permanent/substantive contract (Table 7).

Employer	Orthotist	Prosthetist	Dual practicing PO
Private company (Data from company survey)	325	151	59
NHS (Data from FOI request)	243	81	4
PO survey respondents			
Employed by private company (% of total private company employees)	236 (72.6%)	117 (77.5%)	31 (52.5%)
Employed by NHS (% of total NHS employees)	155 (63.8%)	42 (51.9%)	4 (100%)

Table 6: Responses on employment from the PO workforce survey compared to the information received from the private company survey and the freedom of information request to the NHS Trusts.

Employer - Number of survey respondents

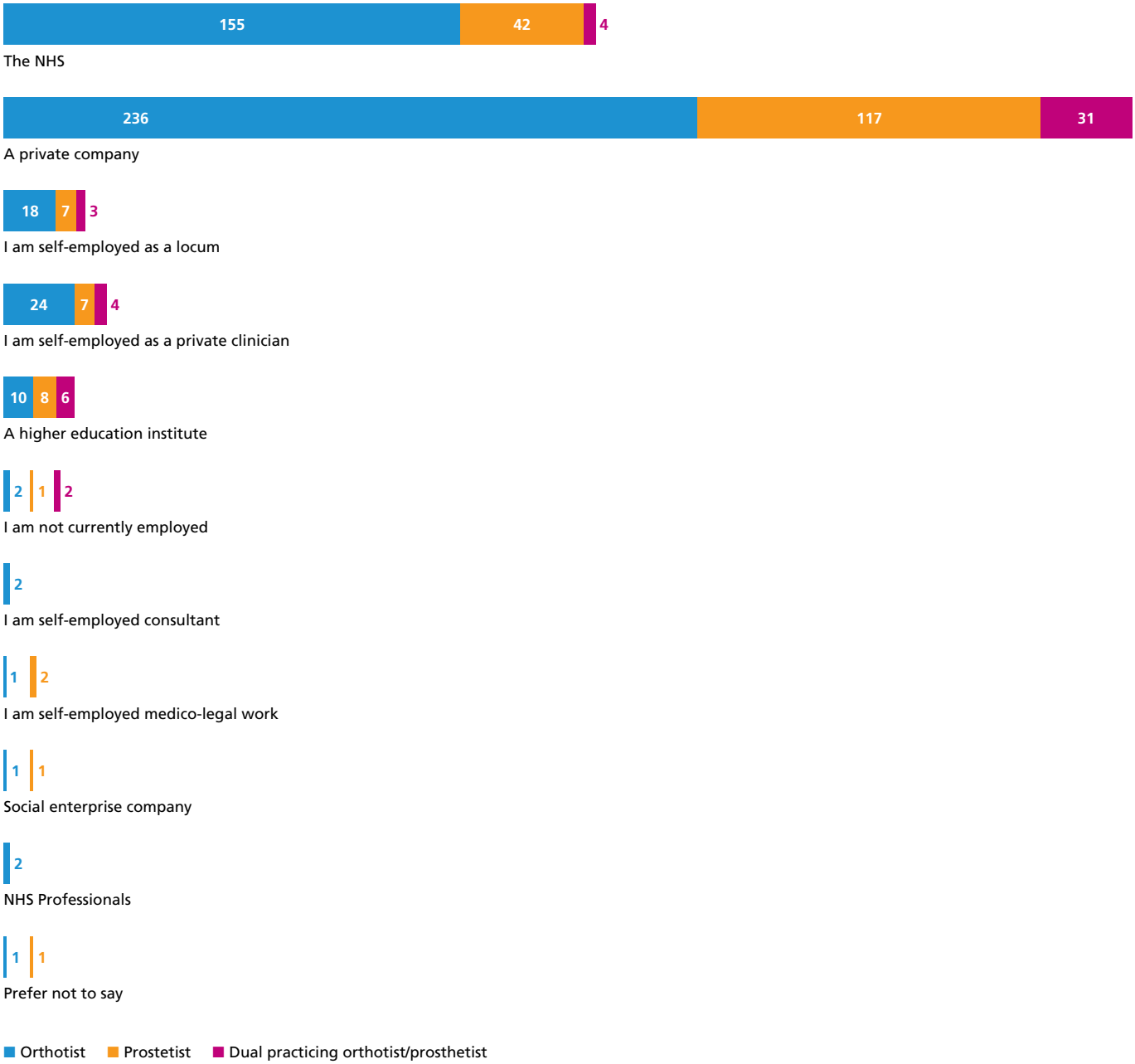


Figure 15: Employers of PO survey respondents.

Contract type	Orthotist			Prosthetist			Dual practicing PO		
	Number	%		Number	%		Number	%	
Permanent/Substantive	379	90.5%		164	92.7%		34	75.6%	
Fixed term	13	3.1%		6	3.4%		5	11.1%	
Temporary	12	2.9%		3	1.7%		2	4.4%	
No company - self employed	6	1.4%		2	1.1%			0.0%	
No contract - company director	1	0.2%			0.0%			0.0%	
Prefer not to say	2	0.5%		1	0.6%		1	2.2%	
Did not respond	5	1.2%		1	0.6%		3	6.7%	
Invalid response	1	0.2%			0.0%			0.0%	

Table 7: Contract type of PO survey respondents.

P&O technicians

The NHS reported that they employ 40 P&O technicians, 25 orthotic, 14 prosthetic, and one dual practicing P&O technician. The private companies reported they employed 649 P&O technicians, 147 prosthetic, 424 orthotic, and 78 dual practicing P&O technicians. A quarter (25) of the technical workforce who responded to the workforce survey were employed by the NHS, whereas 70% (69) were employed by a private company. Two respondents (2%) were employed by a higher education institute. Others stated they were self-employed (7), two were not currently employed, and one preferred not to say. Nearly all technicians (85, 85.9%) were employed on a permanent contract, 6.1% (6) were on a fixed term contract, and 5.1% (5) were on a temporary contract.

P&O support workers

The NHS reported they employed 20 support workers, 18 orthotic support workers, one prosthetic, and one dual practicing P&O support worker. The private companies reported they employed 17 P&O support workers, 10 orthotic, one prosthetic, and six dual practicing P&O support workers. Over half (9, 53%) of P&O support workers who responded to the survey reported they were employed by the NHS, with the remaining 47% (8) employed by a private company (one respondent selected that they were employed by both the NHS and a private company). All support worker respondents were employed on a permanent contract.

What are the salaries of the P&O workforces?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

The reported salaries of the survey respondents are presented in Figure 16, with all salary ranges represented. Most respondents' salaries were equivalent to NHS Band 5, 6, 7 and 8a; 75.9% of orthotists, 74.6% of prosthetists, and 42.2% of dual practicing POs.

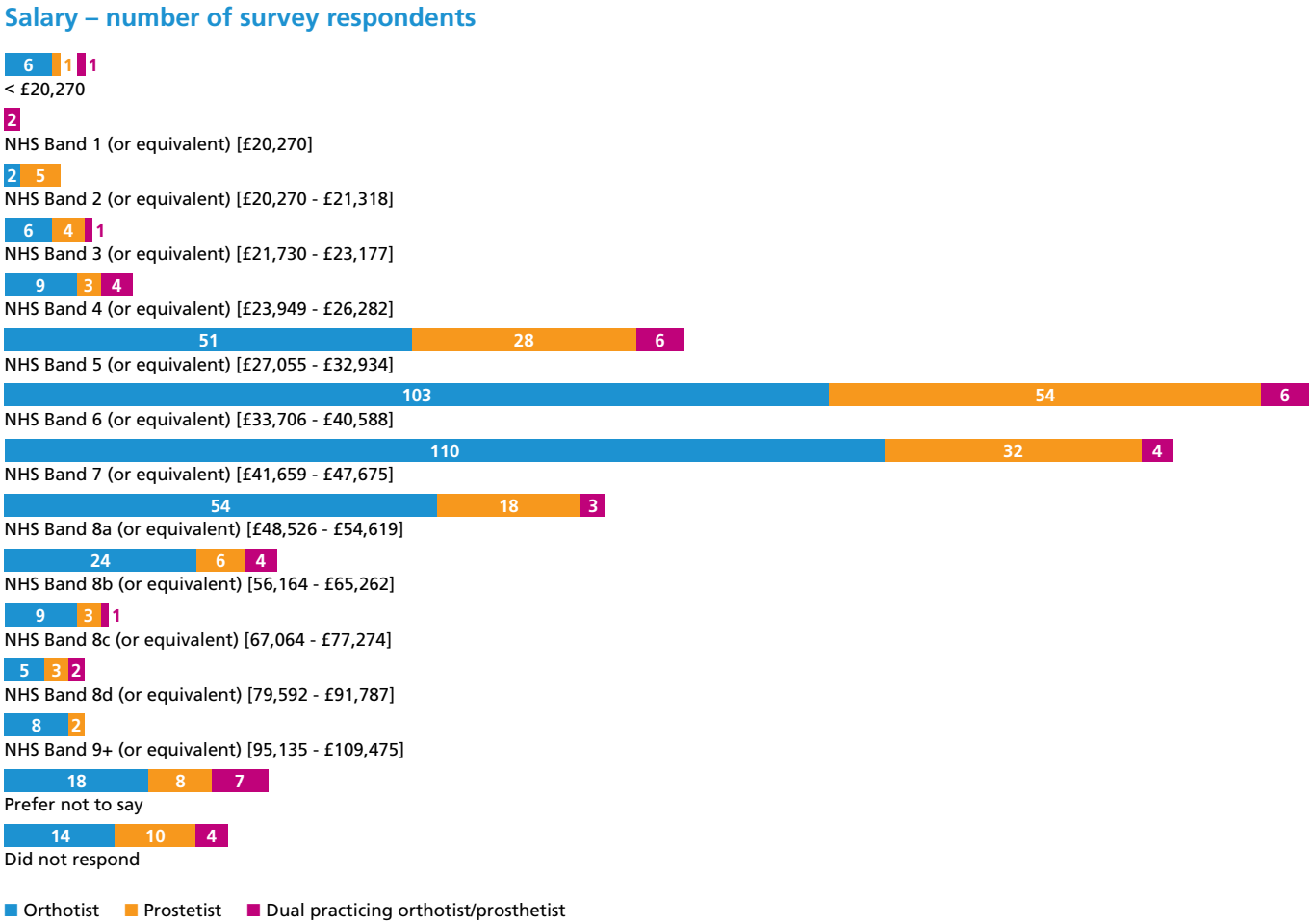


Figure 16: Salaries for PO survey respondents.

P&O technicians

P&O technician salaries varied from <£20,270 to £65,262, with most selecting NHS band 5 or equivalent 31.3% (31), followed by band 4 (16.2%) and band 6 (21.1%). Six respondents reported their salary as NHS equivalent band 7, 8a or 8b.

P&O support workers

P&O support worker salaries varied widely from <£20,270 to £48,526-£54,619, with most (6, 37.5%) reporting an income equivalent to NHS band 4 level. Two support workers recorded that their income was equal to an NHS Band 8a, which is not typical based on the job description of a support worker. It was not possible to tell if this was accurate data.

In what settings do the P&O workforce work?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Survey respondents were asked if there was clinical work within their role(s); 94.7% of orthotists, 96.6% of prosthetists, and 82.2% of dual practicing POs selected "yes". A breakdown of the percentage of their role(s) which represented clinical work is presented in Figure 17.

For orthotists, 43% of respondents reported clinical work represented 91-100% of their role(s), 22% reported clinical work represented 81-90% of their role(s), with 2-9% reporting clinical work represented 0-80% of their roles. For prosthetists, 34% of respondents reported clinical work represented 91-100% of their role(s), 13% reported clinical work represented 81-90% of their role(s), with 3-11% reporting clinical work represented 0-80% of their roles. For dual practicing POs, 32% of respondents reported clinical work represented 91-100% of their role(s), 14% reported clinical work represented 51-60% or 71-80% of their role(s), with 0-8% reporting clinical work represented the remaining percentages. A breakdown of respondents' work settings is presented in Figure 18, Figure 19, and Figure 20.

For orthotists (see Figure 18), a sizeable proportion of respondents (162, 38.7%) reported spending up to 10% of their time working in an in-patient setting. Over half (218, 52%) reported spending 71-100% of their time working in an out-patient setting. Lower responses (0.2-14.8%) were reported for the remaining settings; schools, higher education/university/research, non-clinical setting/administration/business, NHS mental health service, and manufacturing site.

For prosthetists (see Figure 19), over half (95, 53.7%) reported spending 91-100% of their time working in an out-patient setting. Lower responses (0.6-7.9%) were reported for the remaining settings.

For dual practicing POs (see Figure 20), 20% reported spending up to 10% of their time working in an in-patient setting, 17.8% reported spending 91-100% of their time working in an out-patient setting, with lower responses (2.2-13.3%) for the remaining settings.

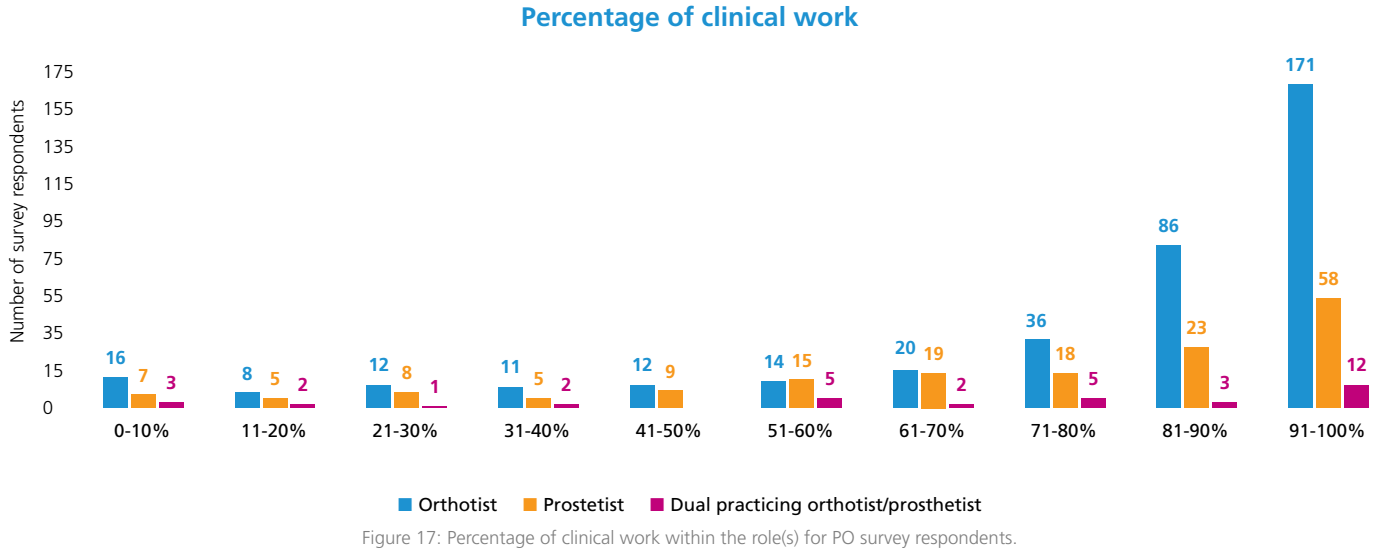


Figure 17: Percentage of clinical work within the role(s) for PO survey respondents.

Othotists

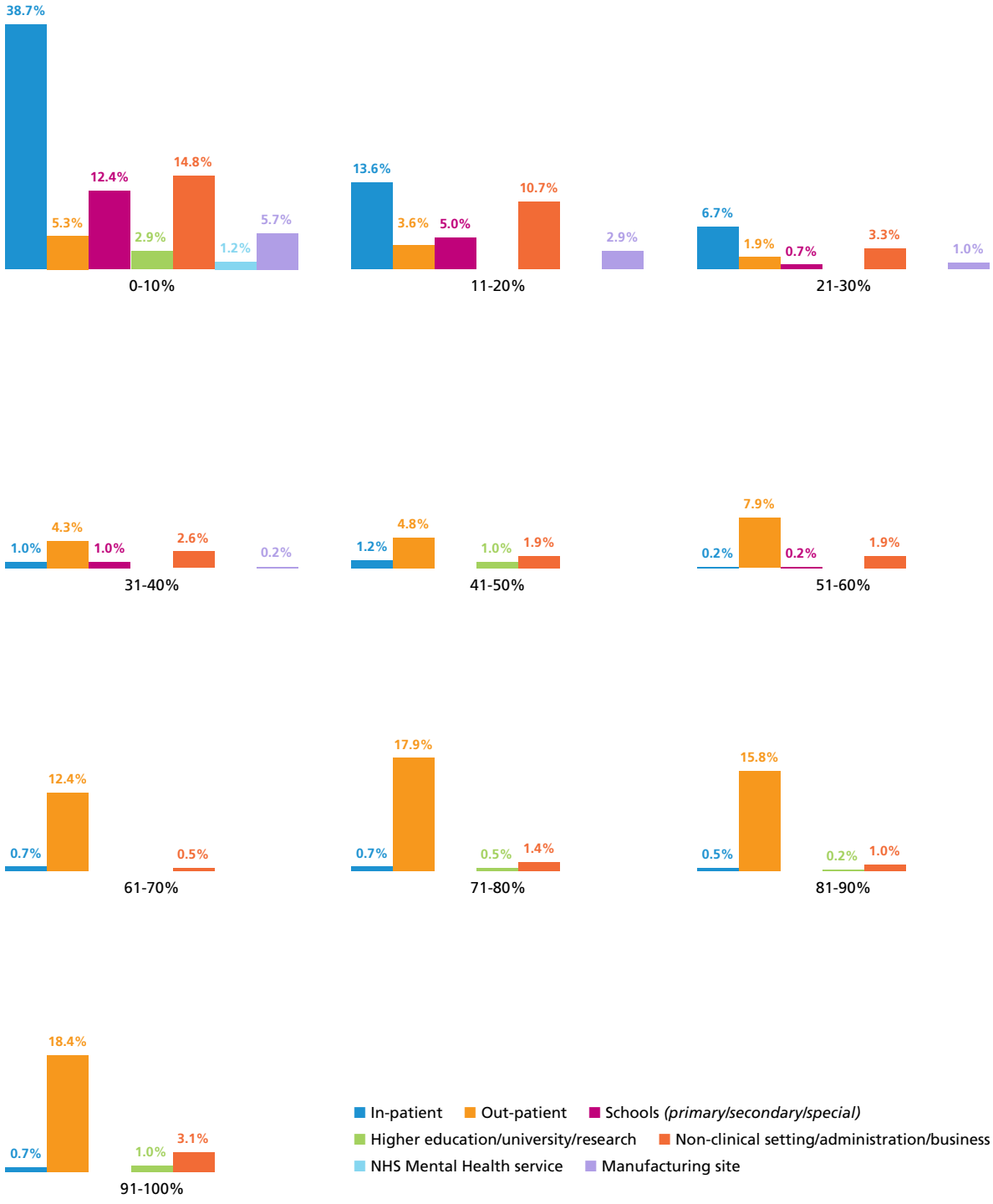


Figure 18: Work settings for orthotist survey respondents.

Prosthetists

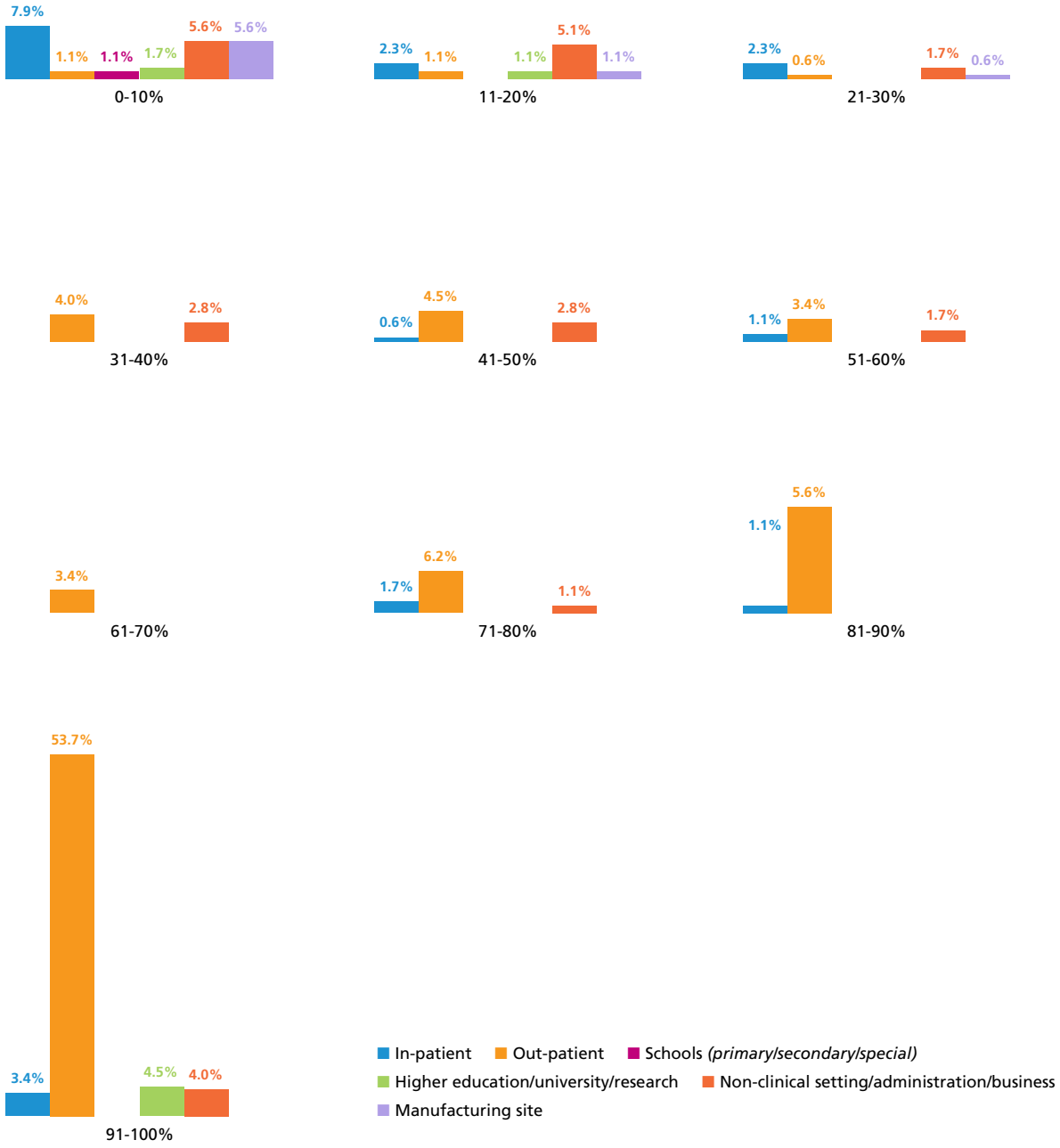


Figure 19: Work settings for prosthetist survey respondents.

Dual practicing othotists/prosthetist

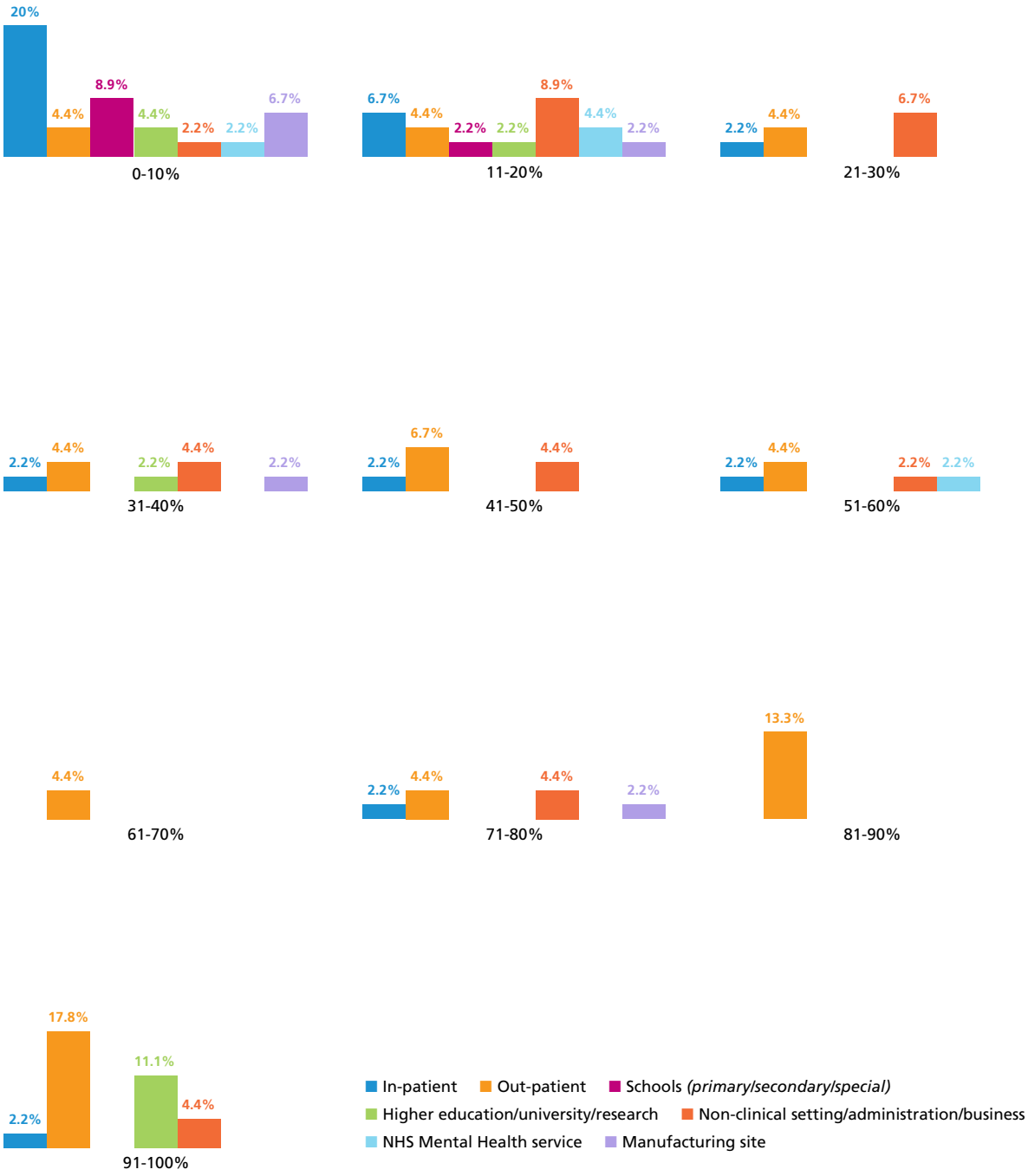


Figure 20: Work settings for dual practicing PO survey respondents.

P&O technicians

Most P&O technicians (64, 64.6%) reported having clinical work within their role(s), which was defined for technicians as patient contact alongside a PO. Nearly half of those with a clinical role (31, 48%) reported that there was up to 10% clinical work within their role(s), with a small number of responders reporting spending between 11-100% of their role undertaking clinical work. Half of the respondents reported spending 91-100% of their time working in a manufacturing setting, with 21% spending 91-100% of their time working in an out-patient setting, and 10% spending 0-10% of their time in an in-patient setting. A small proportion (1-4%) reported working 0-50% of their time in the other work setting categories.

P&O support workers

Most P&O support workers (12, 75%) reported having clinical work within their role, which was defined for P&O support workers as patient contact alongside a PO. The reported clinical work percentages varied from 8-100% across the respondents. Most support workers reported spending their time in out-patient settings, with 50% of support workers spending 100% of their time there, and all responders spending more than 30% of their time in out-patient settings. In-patient, administrative and manufacturing settings were the three next most common working locations. Only one support worker regularly spent time in higher education/university/research (10% of their time), and one in schools (25% of their time).

What are the working patterns of people in the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Most POs who completed the survey reported that they worked full-time hours (Table 8); 73.7% of orthotists, 74.7% of prosthetists, and 88.9% of dual practicing POs.

Work pattern	Orthotist			Prosthetist			Dual practicing PO		
	Number	%		Number	%		Number	%	
Full-time (37.5 hours or more per week)	309	73.7%		132	74.6%		40	88.9%	
Part-time (26-37 hours per week)	49	11.7%		27	15.3%			0.0%	
Part-time (17-25 hours per week)	43	10.3%		12	6.8%		1	2.2%	
Part-time (16 hours or less per week)	5	1.2%		2	1.1%			0.0%	
Flexible hours/Zero Hour contract	7	1.7%		2	1.1%		1	2.2%	
I am not currently working	2	0.5%			0.0%		1	2.2%	
Prefer not to say	2	0.5%		1	0.6%			0.0%	
Did not respond	2	0.5%		1	0.6%		2	4.4%	

Table 8: Work pattern of PO survey respondents.

P&O technicians

Most P&O technicians (88, 88.9%) were working full-time, 6.1% were working part-time (26-37 hours per week) and three part-time (17-25 hours per week).

P&O support workers

Most P&O support workers (12, 75%) were working full-time, with the remaining working part-time, three working 26-37 hours per week and one working 17-25 hours per week.

What are the current skills/knowledge within the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

A full breakdown of the current skills/knowledge of the PO survey respondents are presented in Figure 21, Figure 22, and Figure 23. Person-centred care (84.2%), effective communication (80.2%), and material science (74.2%) were the top three skills that most orthotists felt competent. Knowledge of artificial muscles (5.5%), knowledge of robotics (6.4%), and prescribing rights (9.3%) ranked lowest in terms of the number of orthotists who possess these skills. Person-centred skills also ranked the highest for prosthetists (80.2%), alongside microprocessor componentry (79.7%), and liner technology (76.8%). Artificial muscles (5.6%), neuro-implants for control of prosthetic movement (11.9%), and knowledge of robotics (11.9%) ranked lowest in terms of the number of prosthetists who possess these skills.

Most orthotists (75.4%) and prosthetists (63.3%) reported not having the knowledge/skills to carry out mental health and wellbeing checks. The rate decreased for POs who reported not having the skills to provide trauma informed care (orthotists 55.8%; prosthetists 44.6%).

Less than 40% (orthotists 36.5%; prosthetists 38.4%) reported not having the skills/knowledge of public health, despite a recent report identifying the important role AHPs play in improving health and tackle health inequalities, and a dedicated framework to support AHPs in tackling health inequalities[27].

To ensure the most complex patient groups receive the prosthetic and orthotic care they require; the P&O profession requires a workforce with advanced clinical skills. Less than a quarter of orthotists (24.1%) and 30.5% of prosthetists reported having the skills/knowledge for advanced clinical practice. The definition given in the survey was "a level of practice characterised by a high degree of autonomy and complex decision making which is underpinned by a master's level qualification or equivalent experience". There may have been some misunderstanding in the workforce as to what constitutes advanced clinical practice; it incorporates all four pillars of practice (clinical, education, leadership and management, and research). The role requires a master's level qualification which incorporates the four pillars of practice or the submission of a portfolio of evidence showing how the person meets all the required capabilities which must be assessed by the employer and educator through a process of accreditation[28]. Only 81 POs (13%) reported having a master's level qualification.

27. Dougall D, Buck D. My Role in Tackling Health Inequalities A Framework for Allied Health Professionals.; 2021. https://www.kingsfund.org.uk/publications/tackling-health-inequalities-framework-allied-health-professionals
28. Health Education England. Multi-Professional Framework for Advanced Clinical Practice in England.; 2017. https://www.hee.nhs.uk/sites/default/files/documents/multi-professionalframeworkforadvancedclinicalpracticeinengland.pdf

Orthotists

Figure 21: Orthotist survey respondents reported current skills/knowledge.

Prosthetists

Figure 22: Prosthetist survey respondents reported current skills/knowledge.

Dual practicing orthotists/prosthetist

Figure 23: Dual practicing PO survey respondents reported current skills/knowledge.

P&O technicians

Prosthetic, orthotic and dual practice technicians indicated having skills across all areas. The most common skills reported were effective communication and behaviour change (63.6%), leadership and management (56.6%), technological and digital competency (i.e., telehealth) (52.6%), and new materials to enhance product design (48.5%). When looking at the prosthetic specific skills/knowledge, 'more life-like coverings of prostheses' (25.3%), 'myoelectric control' (21.2%) and 'adaptive prostheses (e.g., seating and high-performance devices)' (19.2%) were the skills/knowledge with the highest responses.

P&O support workers

Prosthetic support workers indicated that they had skills in communication and behaviour change (100%), leadership and management (66.7%), technological and digital competency (33.3%), person centred care (33.3%), osseo-integration (33.3%) microprocessor componentry (33.3%).

Orthotic support workers indicated that they had skills in communication and behaviour change, person centred care (both 90%), leadership and management, technological and digital competency , research skills (all 50%), public health (40%), , ability to carry out trauma informed care (33.3%), ability to carry out mental health and well-being checks (30%), CAD, 3D imaging (both 20%), X-ray interpretation, interpretation of gait lab reports, material science, and 3D printing (all 10%).

What are the areas of expertise within the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Survey respondents were asked if they had an area(s) of expertise, which was defined as "a skill of exceptional standard, which could be recognised via an advanced qualification or an advanced/senior job role". Similar responses were found across the professions with 45.6% (191) of orthotists, 44.1% (78) of prosthetists, and 44.4% (20) of dual practicing POs stating that they had area(s) of expertise.

The orthotists and dual practicing POs stating they had an area of expertise all chose more than one area from the list provided (see Figure 24). All the areas of expertise were chosen by a range of orthotists. The highest response was paediatric ankle foot orthoses (52%), followed by adult ankle foot orthoses (50%), and adult foot orthoses (44%). The expertise with the lowest number of responses were plagiocephaly helmets (1%), spinal orthotics for the elderly (2%), paediatric shoulder/humeral bracing (5%), HKAFOs for elderly patients (5%), and paediatric elbow bracing (5%).

The prosthetists and dual practicing POs declaring an area of expertise also chose more than one area (see Figure 25). The most prevalent choice was transtibial prosthetics for adults (74%), transfemoral prosthetics for adults (73%), and transfemoral prosthetics for the elderly (68%). The areas of expertise with the least responses include microprocessor knees for the elderly (1%), upper limb targeted muscle reinnervation for the elderly (1%), and upper limb targeted muscle reinnervation for paediatrics (1%).

Areas of orthotic expertise

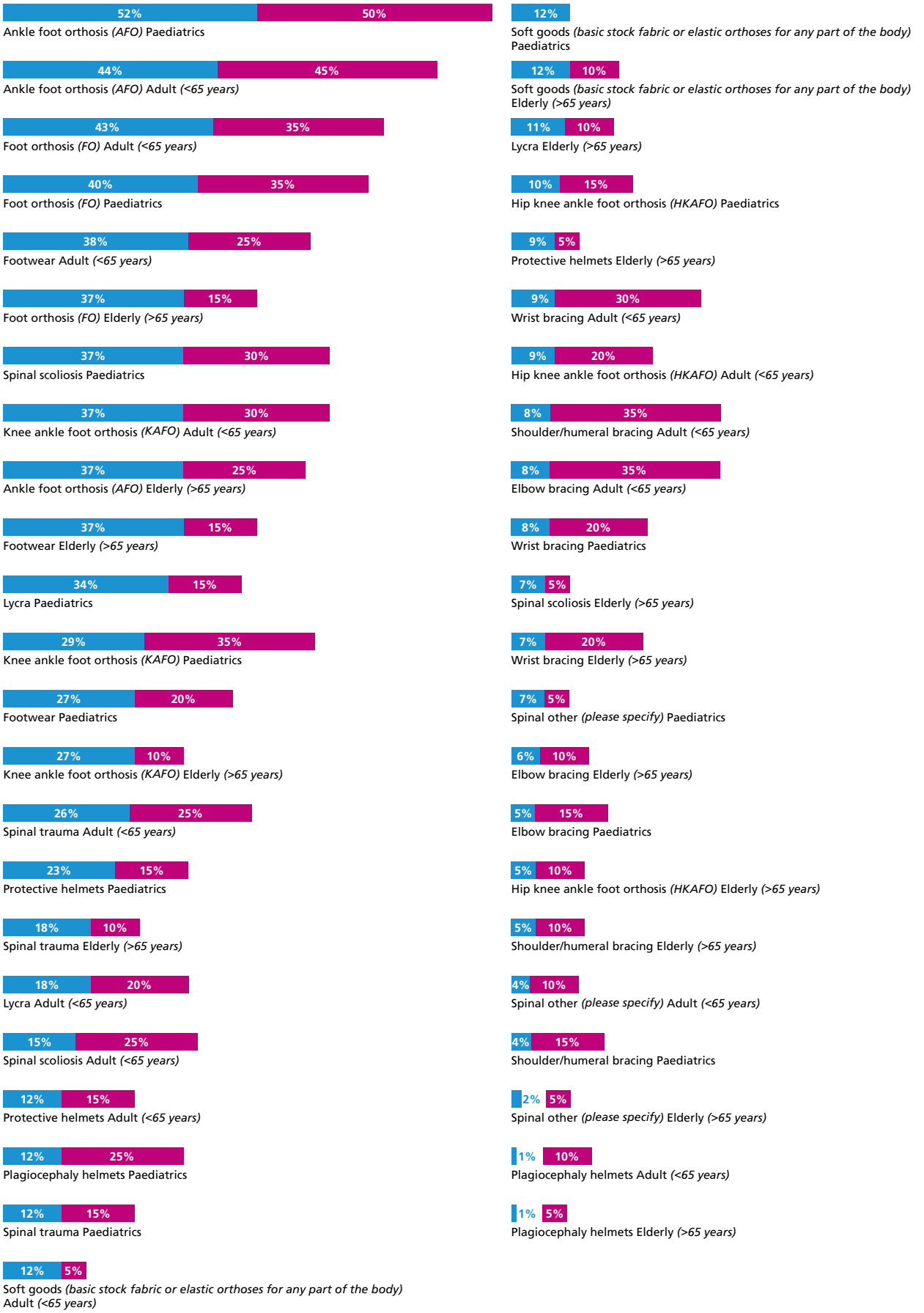


Figure 24: Survey respondents' areas of orthotic expertise.

Areas of prosthetic expertise

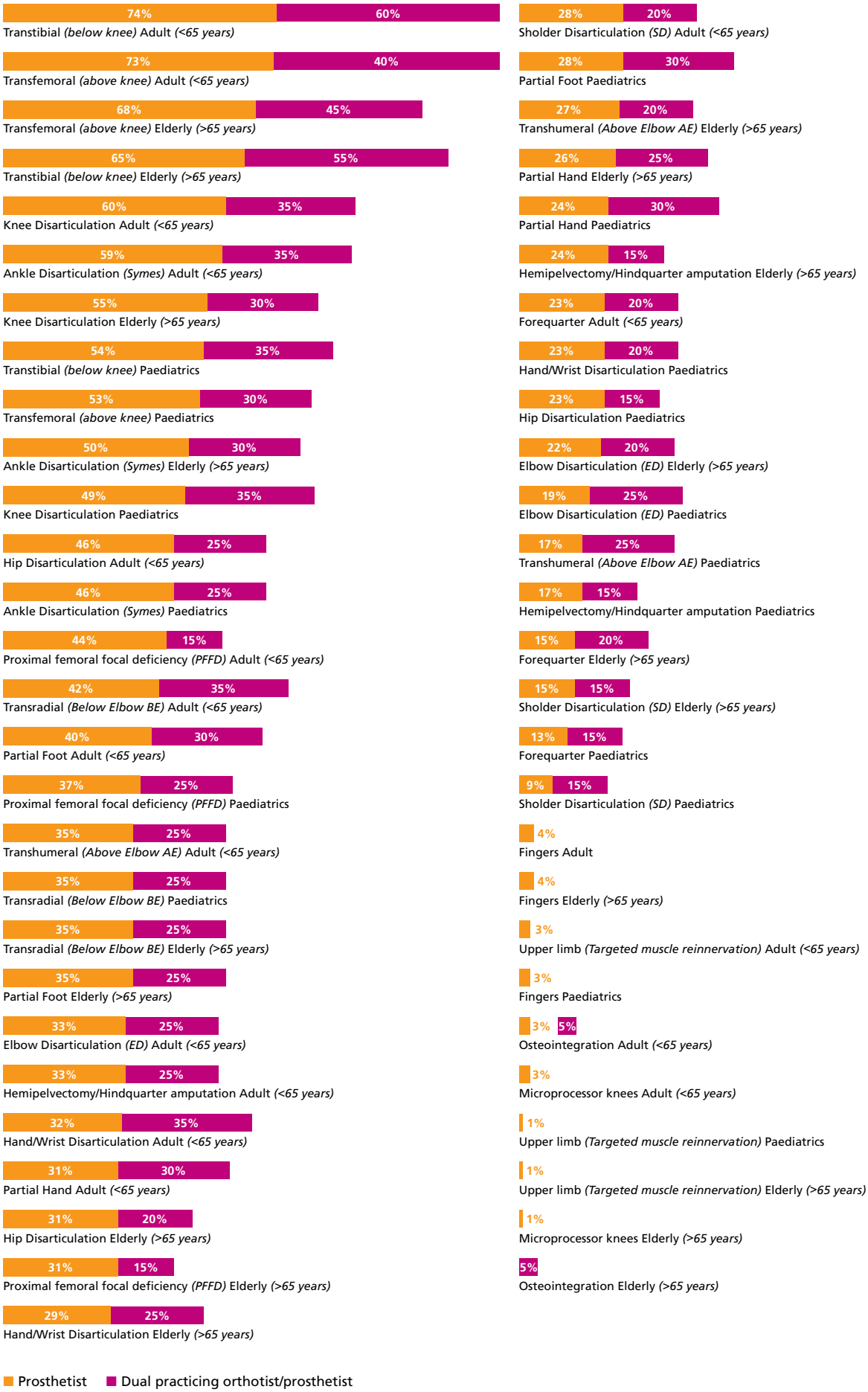


Figure 25: Survey respondents' areas of prosthetic expertise.

P&O technicians

Over half of the technicians (52.5%) reported they had an area of expertise. Twenty-eight reported an orthotic area of expertise, and 28 reported a prosthetic area of expertise. Orthotic technician expert skills were mainly lower limb devices, FOs, AFOs and KAFOs for all age groups, which accounted for 47.5% of the total responses. A further 10% of responses reported expertise in footwear, and 8% for HKAFOs. There were very few reported areas of expertise in protective helmets (2.5%), spinal trauma (2.5%), soft goods (1.9%), or plagiocephaly helmets (1.8%).

Prosthetic technicians' expertise was also mainly in lower limb devices. Most responses (61.5%) of expertise accounted for lower limb skills, mainly; transfemoral (all ages, 9.9%), knee disarticulation (all ages, 11%), transtibial (all ages, 11.3%), ankle articulation (all ages, 10.7%), partial foot (all ages, 8.4%). Upper limp areas of expertise were most common in transradial (7.5%) and hand/wrist disarticulation (7.8%). The least common were forequarter and hindquarter. Expertise related to adult age patients were most common across all amputation levels.

P&O support workers

One P&O support worker identified as having areas of expertise, and selected footwear for adults and elderly as their areas of expertise.

Are there training gaps for the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Most survey respondents reported having the necessary skills to carry out their current role(s); 80.7% (338) of orthotists, 80.8% (143) of prosthetists, and 71.1% (32) of dual practicing POs. Those who selected not having the necessary skills were asked for which skills they thought they would benefit from training. Of the 141 responses, there was a mix of clinical, technical, research, business, and soft skills reported. A theme for ongoing development and review of basic clinical & technical skills which would ordinarily be learnt during undergraduate training was evident in 42% of responses. This may indicative that respondents felt that lack opportunities to consolidate learned knowledge once they begin working.

Thirteen percent of the respondents (19) listed a variety of advanced clinical skills, indicating a desire from respondents to have progression into advanced practice. Other skill sets included lycra, wound care, basic physiotherapy, x-ray interpretation and non-medical prescribing; these made up 7% of responses to this question. Research skills were highlighted in 4% of the responses. Management/leadership skills were mentioned in 11% of responses. People/ communication skills (3%) were noted separately to personal mental health (9%) as there seemed to be a separate theme being highlighted in individuals' abilities to cope with the demands of the job.

P&O technicians

Most technicians (80%) felt they had the necessary skills to carry out their current role(s). The areas of training requested to improve their skills set included computing skills including excel, increased clinical experience, components and adapters, leatherwork, metalwork and new materials, and P&O manufacture generally. One comment stated, *"more detailed working towards becoming an Orthotist"*.

P&O support workers

Nearly a third (5, 31%) of support worker survey respondents reported that they did not have the skills to carry out their job and 31% (5) felt they could be better utilised and had skills that were not being used. Three support workers listed that they would like skills in x-ray reading, spinal bracing, scanning, and spinal anatomy to carry out their job. Others felt they had skills not being used, including technical skills, clinical skills, and skills related to outcome measure collection, and research (more information on this is provided in the next section).

Are the P&O workforce research active?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Research skills are part of HCPC's standards of proficiency[29]. POs were asked *"are you research active, this can mean either you are currently involved or have recently (last 3 years) been involved in a research project (either independently or through a qualification e.g., Master's, a research publication, presenting your research work at a conference etc"*. Nearly a quarter of orthotists (103, 24.6%), 23.2% (41) of prosthetists, and 35.6% (16) of dual practicing POs reported they are research active (see Figure 26). In addition, 11.2% (47) of orthotists, 18.6% (33) of prosthetists, and 26.7% (12) of dual practicing POs reported they have published their research in peer reviewed journals (see Figure 27).

Are you currently research active?

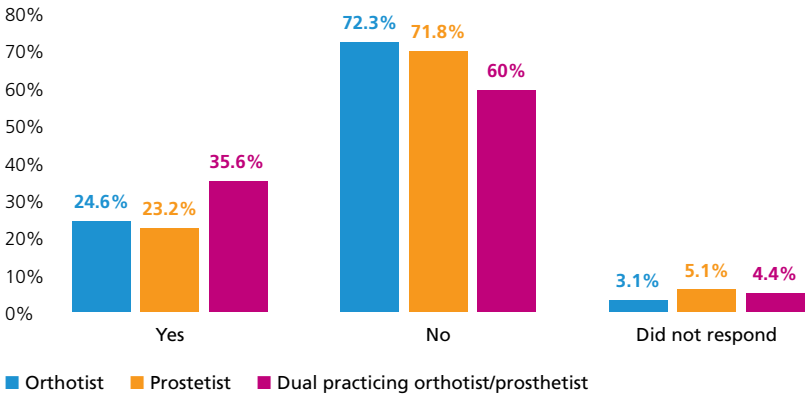


Figure 26: Research activity of PO survey respondents.

Have you published in peer-reviewed journals?

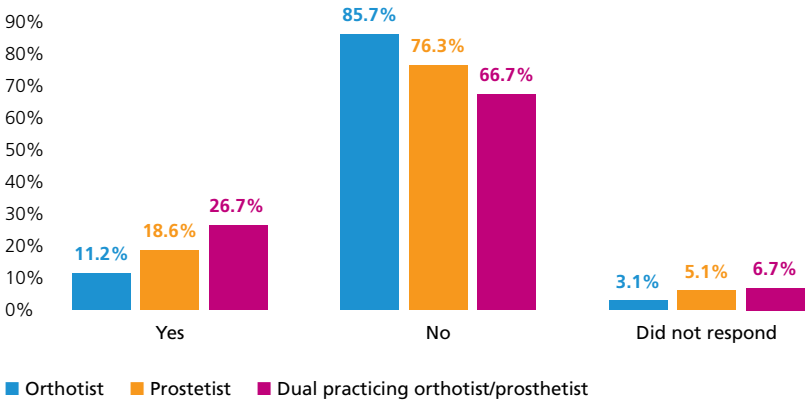


Figure 27: Publication activity of PO survey respondents.

29. The Health and Care Professions Council. The Standards of Proficiency for Prosthetists / Orthotists.; 2018. Accessed March 30, 2023. https://www.hcpc-uk.org/standards/standards-of-proficiency/prosthetists-orthotists/

P&O technicians

A minority of respondents (13, 13.1%) reported they were currently involved or had recently been involved in a research project (either independently or through a qualification) and nine (9.4%) said they had published in peer-reviewed journals. Four respondents were currently spending between 10% and 100% of their time in higher education, university, or research.

P&O support workers

One of the 16 support worker survey respondents (6.3%) was currently involved in research, and no support workers reported having published in peer-reviewed journals.

What is the role of support workers within the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce. Most P&O support workers (12, 75%) reported that they were involved in clinical work. Those involved in clinical work reported spending an average of 63% of their time working clinically. Of those involved in clinical work, 31% (5) were responsible for their own cohort of patients and were able to assess, fit, and supply goods to their patients, while 31% (5) had no independent responsibility with patients. Two of the remaining respondents reported having limited independent responsibilities (could fit or supply devices only).

The support workers reported treating many different clinical populations, with the clinical populations they predominately treat being diabetic patients (adult and elderly), learning difficulties patients of all ages, and MSK patients of all ages. Other populations treated by many of the support workers included neurological and rheumatology patients, adult and elderly, and adults with vascular issues, or history of traumatic injury. Support workers involved in non-clinical work reported their roles to include stock or storeroom management, and order queries.

P&O support workers were asked if they thought the role of P&O support workers could be better utilised? (i.e., do they have skills which are not being used?), with 5 (31.3%) selecting "yes". POs were also asked the same question about support workers, 19.1% of orthotists, 11.3% of prosthetists, and 17.8% of dual practicing POs selected "yes". Those who selected "yes" were then asked to list the skill(s) which they thought were not currently utilised.

Three support workers and 74 POs responded to these questions. Support workers felt that had clinic skills and skills related to outcome measures and research that were not being utilised. The POs responses agreed with this, two thirds of all responses reported that support workers clinical and research skills are not being utilised within their service. An example response stated that support workers can be better utilised in *"fitting basic devices such as post op knee braces, gaiters, stock footwear and insoles"*. Comments also discuss extending the scope of support workers to include clinically related jobs including collection of outcome measures, telephone reviews, patient handling/casting assistance, educating patients on donning/doffing orthoses, and guidance on using orthoses. One responder referenced that *'assistants would find the job more fulfilling if they were in clinic more and developed clinical skills'* linking attrition and the scope of the support workers' job. Other themes throughout the responses included providing public or mental health support, triaging, and technical skills including adjustments or repairs.

Comparative analysis

This section provides a comparative analysis of the responses from the P&O workforce survey, meaning, two or more response categories will be analysed together rather than in silos to provide a richer data set. The narrative will explore the salaries for NHS staff compared to privately employed staff, POs by geographical location, employers by geographical region, P&O workforce intention to leave the profession by geographical region, demographics, employer, salary, caring responsibilities, contract type, and work pattern.

Employer type: Comparison of salaries for POs employed by the NHS and private

(Based on the responses from 564 respondents, including prosthetists, orthotists and dual practicing POs only. Of them, 195 were employed by the NHS and 369 by a private company.)

POs

Prosthetists

(Based on the responses from 42 NHS and 110 privately employed prosthetists.)

Most of both the NHS and privately employed prosthetists who took part in the survey reported to have a salary corresponding to an NHS Band 6 (£33,706 - £40,588). However, the percentage of prosthetists whose salary was within an NHS 6 Band range was higher in the NHS (17, 40.5%) than in private companies (35, 31.8%). The second most common salary range among NHS employers was Band 7 (£41,659 - £47,675) (11, 26.2%), whereas NHS Band 5 (£27,055 - £32,934) received the second highest proportion of responses among privately employed prosthetists (22, 20.0%). While the NHS starting salary for prosthetists was reported to be no less than £27,055 by the prosthetists who took part in the survey, 9% (10) of the privately employed prosthetists reported to have an income for their prosthetic role lower than £27,055.

Orthotists

(Based on the survey responses from 149 NHS and 230 privately employed orthotists.)

Most survey respondents working as an orthotist in either the NHS or private companies reported to have a salary within the NHS Band 6 (£33,706 - £40,588) – Band 7 range (£41,659 - £47,675) (Band 6, NHS: 50, 33.6%; private company: 51, 22.2%; Band 7, NHS: 50, 33.6%; private company: 55, 23.9%). While almost 7% (16) of the privately employed orthotists who took part in the survey stated to earn less than the Band 5 threshold (£27,055), no NHS-employed orthotists reported to earn less than that amount per year. Ten (4.3%) of the orthotists employed by a private company and one of those employed by the NHS preferred not to specify their salary.

Dual practicing POs

(Based on the survey responses from four NHS and 29 privately employed dual practicing POs.)

Most of the dual practicing POs employed by a private company reported to have a salary corresponding to an NHS Band 5 (£27,055 - £32,934) wage. Four NHS dual practicing POs took part in the survey, and they all reported to be in different salary bands (NHS Band 1: 1, 25.0%; NHS Band 5: 1, 25.0%; NHS Band 6: 1, 25.0%; NHS Band 7: 1, 25.0%). While 24.1% (7) of the privately employed dual practicing POs reported to have a salary equal or superior to an NHS Band 8a pay band, no NHS dual practicing POs were in Band 8-9 salary ranges. Four (13.8%) of the dual practicing POs employed by a private company preferred not to disclose their compensation for their P&O role.

Summary

Most prosthetists, orthotists and dual practicing POs employed by both the NHS and private companies reported to be in a salary range corresponding to the NHS Band 6 (£33,706 - £40,588) (NHS: 68, 34.87%; private company: 90, 24.39%), followed by Band 7 (£41,659 - £47,675) (NHS: 62, 31.79%; private company: 76, 20.59%) and Band 5 (£27,055 - £32,934) (NHS: 19, 9.74%; private company: 64, 17.34%). Nevertheless, the percentages of NHS workers within the Band 5 – 7 salary range was higher than that of privately employed workers. This may be related to a more spread-out earning distribution observed in the private company group.

The data showed a number of POs receiving salaries below the NHS band 5 starting salary for a registered AHP role. However, this data included those POs on part-time hours. When part-time workers are removed the data showed that five (3%) of prosthetists and 13 (8%) of orthotists on full-time hours were receiving a salary equivalent to the NHS band 3-4, all of whom are employed by the private sector (see Figure 28 and Figure 29). Five (3%) of dual practicing POs employed by the private sector were receiving a salary equivalent to the NHS band 3-4.

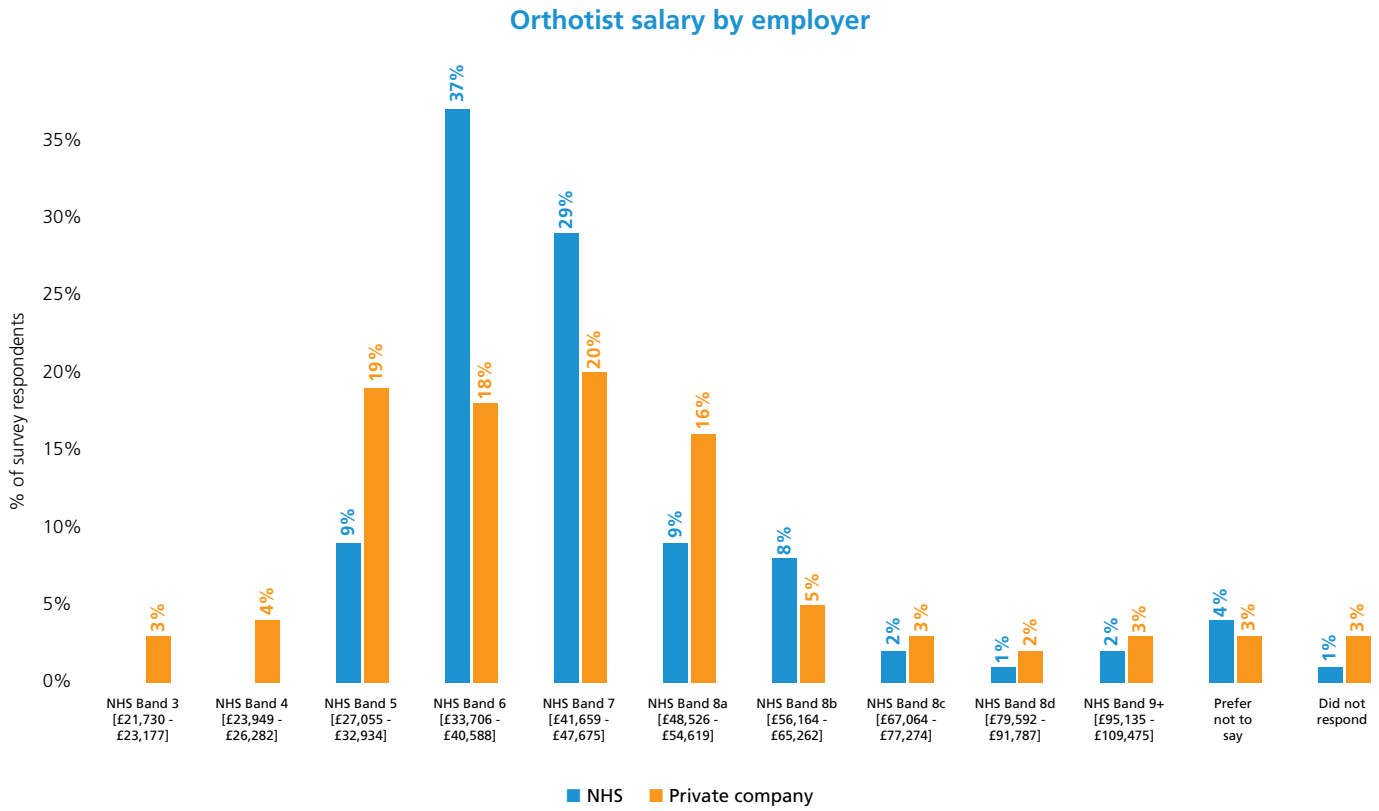


Figure 28: Orthotist salary by employer (full-time employed).

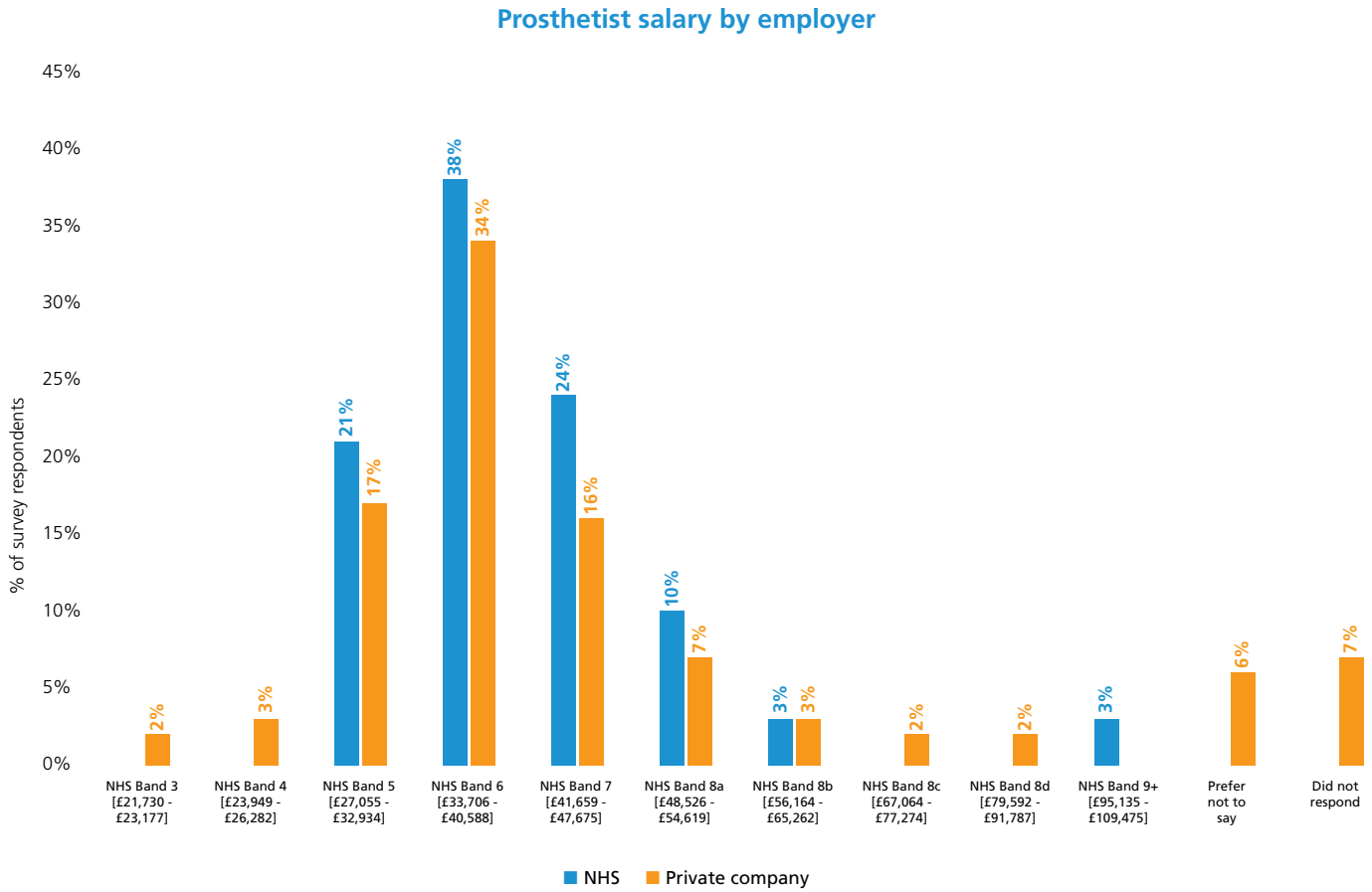


Figure 29: Prosthetist salary by employer (full-time employed).

Geographical regions

Comparison of the number of people working in each geographical region

(Based on the survey responses from 722 respondents.)

POs

(Based on the survey responses from 166 prosthetists, 405 orthotists and 41 dual practicing POs.)

Prosthetists

Out of the 166 prosthetists who answered the survey, 16.3% (27), 15.7% (26) and 14.5% (24) reported to work in London, North-West England and South-East England, respectively. The UK regions with the lowest number of prosthetists were Northern Ireland (3, 1.8%), North-East England (8, 4.8%) and Yorkshire and Humber (10, 6.0%). Additionally, 10 (6%) of the prosthetists chose not to disclose their work location.

Orthotists

Based on the survey responses, the regions with the highest number of orthotists were Yorkshire and Humber (58, 14.3%), North-West England (65, 16.0%), and Scotland (63, 15.6%). A small proportion of orthotic respondents reported working in Northern Ireland (14, 3.5%), the East of England (22, 5.4%), and Wales (25, 6.2%). Additionally, eight orthotists (2.0%) chose not to disclose their work location.

Dual practicing POs

The dual practicing POs who answered the survey mainly worked in London (13, 31.7%), South-East England (11, 26.8%) and South-West England (8, 19.5%). The UK regions where the lowest number of dual practicing POs reported to work were the West Midlands (3, 7.3%), Northern Ireland (2, 4.9%), and Wales (1, 2.4%).

P&O technicians

(Based on the responses from 44 orthotic technicians, 32 prosthetic technicians and 18 dual practicing P&O technicians.)

Prosthetic and orthotic technicians

Most of the orthotic technicians who participated in the survey reported working in Yorkshire and Humber (14, 31.8%), West Midlands (7, 15.9%), and Scotland (13.6%), while the majority of prosthetic technicians stated that they were currently employed in London (10, 31.3%), South-East England (4, 12.5%), and Yorkshire and Humber (4, 12.5%). Based on the survey responses, the UK areas with the lowest number of technicians were East England (orthotic technician, 1, 2.3%; prosthetic technician, 1, 3.1%), North-East England (1 orthotic technician and 1 prosthetic technician), South-West England (2 orthotic technicians and 2 prosthetic technician), Wales (1 orthotic technician and 2 prosthetic technicians), Scotland (2 prosthetic technicians), East England (1 orthotic technician and 1prosthetic technician) and the West Midlands (1 prosthetic technician).

Dual practicing P&O technicians

The survey revealed that dual practicing prosthetic and orthotic technicians were mainly employed in South-East England (5, 27.8%) and Scotland (4, 22.2%). None of the respondents in this staffing group worked in London, North-East England, South-West England, West Midlands, or Wales.

P&O support workers

(Based on the responses from three prosthetic support workers, 11 orthotic support workers and two dual practicing P&O support workers.)

Prosthetic support workers

The three prosthetic support workers who answered the survey reported to work across four UK geographical regions: East Midlands, South-West England, South-East England, and West Midlands.

Orthotic support workers

Of the orthotic support workers who took part in the survey (11), 27.3% (3) were working in the South-West England at the time of the survey. One to two orthotic support workers reported to be working in the following UK regions: East England (1, 9.1%), East Midlands (2, 18.2%), London (1, 9.1%), North-West England (2, 18.2%), South-East England (2, 18.2%), Yorkshire and Humber (1, 9.1%), and Scotland (2, 18.2%). There were no orthotic support workers who reported to be working in North-East England, West Midlands, Yorkshire and Humber, or Northern Ireland.

Dual practicing P&O support workers

The survey respondents included two dual practicing prosthetic and orthotic support workers, one of whom reported working in the South-East England and the other in the West Midlands.

Summary

Most prosthetic and orthotic professionals were working in London (111, 15.37%), North-West England (108, 14.96%), South-East England (100, 13.85%) and Scotland (107, 14.82%) at the time of the survey. According to the survey, the UK areas where the lowest number of P&O professionals worked were the North-East England (47, 6.51%), Northern Ireland (20, 2.77%), and Wales (43, 5.96%). Twenty-five respondents (3.46%) preferred not to say where they work.

Comparison of the number of people working in each geographical region

(Based on the responses from 671 respondents.)

POs

Based on the responses from 151 prosthetists (42 employed by the NHS and 109 by private companies), 379 orthotists (149 employed by NHS and 230 by private companies) and 33 dual practicing POs (4 employed by the NHS and 29 by private companies).

Prosthetists

Most of the NHS employed prosthetists were working in Scotland (18, 42.9%) and Wales (10, 23.8%). Five or less NHS-employed prosthetists reported to work in each of the following regions: East England (1, 2.4%), East Midlands (1, 4.8%), London (2, 4.8%), North-West England (4, 9.5%) and South-East England (5, 11.9%). None of the NHS-employed prosthetists who took part in the survey were working in Northern Ireland, North-East England, Yorkshire and Humber, West Midlands, and South-West England. Of 109 prosthetists employed in the private sector, the majority was working in London (21, 19.3%), South-East England (19, 17.4%), North-West England (176, 15.6%), and East Midlands (17, 15.6%).

Orthotists

Out of the 149 orthotists employed by the NHS who participated in the survey, most indicated that they worked in Scotland (40, 26.8%) or the West Midlands (21, 14.1%). In contrast, among the 230 privately employed orthotists who took part in the survey, the largest numbers worked in the North-West of England (43, 18.7%), South-West England (38, 16.5%), and London (36, 15.7%).

Dual practicing POs

Only four dual practicing POs employed by the NHS answered the survey and reported to work in South-East England (2, 50.0%), London (1, 25.0%), North-West England (1, 25.0%), Scotland (1, 25.0%). Twenty-nine dual practicing POs reported to be employed by a private company and they were working across all UK regions. However, most of them worked in London (11, 37.9%), and South-East England (9, 31.0%).

P&O technicians

(Based on the responses from 29 prosthetic technicians (four from the NHS and 25 from private companies), 45 orthotic technicians (14 from the NHS and 31 from private companies) and 17 dual practicing P&O technicians (six from the NHS and 11 from private companies)).

Prosthetic technicians

Four prosthetic technicians reported to be employed by NHS Scotland and NHS Wales (2 each), respectively. None of the survey respondents reported to be privately employed in these regions. In nine UK regions (East England, London, North-East England, North-West England, West-Midlands, Yorkshire and Humber, and Northern Ireland), all participating prosthetic technicians were exclusively employed by private companies. Among them, the majority worked for a private company, mostly in London (8, 32.0%).

Orthotic technicians

Of the orthotic technicians who took part in the survey, 14 were employed by the NHS in five different UK regions (East Midlands, South-West England, South-East England, Scotland and Wales). More than 70% of them were working between two regions, namely Scotland (6, 42.9%) and the East Midlands (4, 28.6%). Similarly, almost 70% of the privately employed technicians (31) who answered the survey were working between two UK regions: Yorkshire and Humber (14, 45.2%) and the West Midlands (7, 22.6%).

Dual practicing P&O technicians

Of the NHS-employed dual practicing P&O technicians who answered the survey (6), half were working in Scotland (3). Of the 11 privately employed dual practicing P&O technicians who answered the survey, the majority was working in East (3, 27.3%) and South-East England (3, 27.3%).

P&O support workers

(Based on the responses from three NHS prosthetic support workers, 11 orthotic support workers (eight were employed by the NHS, two by private companies and one by both), and two dual practicing P&O support workers from private companies.)

Prosthetic support workers

Among the survey respondents, there were no prosthetic support workers employed by the NHS. Three prosthetic support workers reported to be employed by a private company and to work across four UK regions, namely East Midlands, South-West England, South-East England, and West Midlands.

Orthotic support workers

Eight of the orthotic support workers who answered the survey reported to be employed by the NHS, with the following UK regions having two orthotic support workers each: South-West England, North-West England, and Scotland. The three privately employed orthotic support workers reported to work across five UK regions South-West England (2), East England (1), East Midlands (1), London (1), and South-East England (1).

Dual practicing P&O support workers

None of the dual practicing P&O support workers who answered the survey was employed by the NHS. Two privately employed dual practicing P&O support workers answered the survey and reported to work in the South-East and the West Midlands, respectively.

Summary

According to the survey, the number of people who reported being employed by a private company (443) was almost twice the number of orthotic and prosthetic workers who stated that they had found employment in the NHS (228). The regions with the highest ratio of private company to NHS employees were East England (NHS: private company=1:41), North-East England (NHS: private company=2:42) and Yorkshire and Humber (NHS: private company=9:80). In Scotland and Wales, the number of people reporting employment with the NHS exceeded those reporting employment with a private company (Scotland: NHS: private company=72:29; Wales: NHS: private company=24:18).

In all but one profession (orthotic support worker), the number of survey respondents who reported being privately employed was greater than those who reported being NHS-employed workers. The largest ratio of NHS to private company employment was found among dual practicing POs, where the survey indicated that private companies employed 7.25 times more dual practicing POs than the NHS did (29 compared to 4).

Characteristics of P&O workforce considering leaving the profession

Comparison of P&O workforce considering leaving the profession by geographical regions

POs

(Based on the survey responses from 151 prosthetists, 381 orthotists and 40 dual practicing POs.)

Prosthetists

Based on the survey results, the UK regions with the highest percentages of prosthetists who are likely to leave the workforce by 2027 were North-West England (definitely yes: 3, 12.5%; probably yes: 6, 25.0%), South-East England (definitely yes: 4, 19.0%; probably yes: 3, 14.3%) and East Midlands (probably yes: 5, 26.3%). Less than 10% of the prosthetists currently working in East England (probably yes: 1, 8.3%), South-West England (probably yes: 1, 6.7%), West Midlands (probably yes: 1, 8.3%), Scotland (definitely yes: 1, 5.3%), and Wales (definitely yes: 1. 7.7%) indicated that they may leave the workforce in the next five years.

The percentages of prosthetists who would definitely remain in the profession for the next five years varied across the UK regions (range: 28.6%-100%). Specifically, only around 30% of the prosthetists working in South-East England (5, 28.6%) would definitely remain in the workforce for the next five years. Approximately 70% of the prosthetists currently working in North-East England (5, 71.4%), Scotland (13, 68.4%), and Wales (9, 69.2%) would definitely continue to be part of the workforce until 2027. All three prosthetists currently working in Northern Ireland also expressed their willingness to remain in the workforce for the next five years.

Orthotists

Based on the survey findings, South-East England (definitely yes: 4, 8.7%; probably yes: 11, 23.9%), Yorkshire and Humber (definitely yes: 3, 5.6%; probably yes: 10, 18.5%), and Scotland (definitely yes: 3, 5.0%; probably yes: 12, 20.0%) had the highest percentages of orthotists who may leave the P&O workforce in the UK by 2027. In contrast, only one orthotist in Wales reported definite plans to leave the profession in the next five years.

Only two UK regions, Northern Ireland (7, 50.0%) and Wales (12, 52.2%), had orthotists with a likelihood of definitely remaining in the workforce until 2027 exceeding 50%. In Scotland (18, 30.0%), Yorkshire and Humber (16, 29.6%) and East Midlands (14, 28.0%), only around 30% of the orthotists who participated in the survey reported that they would definitely remain in the workforce for the next five years.

Dual practicing POs

No dual practicing POs reported to have intentions to leave the P&O workforce except for three UK regions, namely London (probably leave: 2, 25.4%), South-East England (probably leave: 2, 18.2%) and Yorkshire and Humber (definitely leave: 1, 20.0%).

All dual practicing POs who participated in the survey and worked in East-England, East Midlands, North-East England, West Midlands, Northern Ireland, and Wales indicated that they would definitely remain in the workforce for the next five years. In other UK regions, the percentages of dual practicing POs who reported they would definitely continue in the profession until 2027 ranged from 38.5% (London) to 80.0% (Yorkshire and Humber).

P&O technicians

(Based on the survey responses from 42 orthotic technicians, 29 prosthetic technicians, and 16 dual practicing P&O technicians.)

Prosthetic technicians

Most prosthetic technicians currently working in the UK had no definitive plans to leave the P&O workforce within the next five years. However, two prosthetic technicians in both North-West England (66.7%) and London (22.2%) indicated that they would probably leave the workforce before 2027. One of the two prosthetic technicians working in Yorkshire and Humber also reported having the same intention.

Although the remaining prosthetic technicians working in the UK reported that they may remain in the workforce for the next five years, only one or two prosthetic technicians working in each of the following UK regions indicated having definitive plans to remain in the workforce until 2027: London (1), North-West England (1), South-East England (2), South-West England (1), West-Midlands (1), and Wales (1). This indicated that only one of the prosthetic technicians working in London had a definitive plan to remain in the profession for the next five years.

Orthotic technicians

A significant proportion of orthotic technicians in certain UK regions reported that they are likely to leave the P&O workforce by 2027. Specifically, half (3) of those working in Scotland, a third of those (20) in Yorkshire and Humber, and a fifth of those (20) in London indicated that they would definitely or probably leave. One respondent who did not specify their region also reported that they would probably leave. No orthotic technicians from other regions indicated their intention to leave.

The percentage of orthotic technicians who said they would definitely remain in the workforce for the next five years varied greatly across the UK regions (range: 16.7% - 80.0%). The regions with the lowest percentage of orthotic technicians who planned to stay in the workforce until 2027 were London, South-East England, and Scotland, with only one respondent from each region saying they would definitely stay. The highest percentage of orthotic technicians who would definitely remain was recorded in the East Midlands, with four respondents (80.0%) indicating they would definitely stay.

Dual practicing P&O technicians

One dual practicing P&O technician from East England (33.3%), South-East England (33.3%) and Northern Ireland (100.0%), respectively, stated that they would probably leave the workforce within the next five years. While the remaining dual practicing P&O technicians may remain in the workforce for the next five years, in only four UK regions, respondents declared that they would definitely remain in the P&O workforce until 2027. These regions were East Midlands (2, 100%), South-East England (2, 66.7%), Yorkshire and Humber (1, 100%), and Scotland (2, 50%).

P&O support workers

(Based on the survey responses from three prosthetic support workers, 10 orthotic support workers and two dual practicing P&O support workers.)

Prosthetic support workers

All prosthetic support workers, except for one in the West Midlands, who participated in the survey and worked in three UK regions (South-East England, South-West England, East Midlands) indicated that they are likely to remain in the UK workforce for the next five years.

Orthotic support workers

Most orthotic support workers in the UK who took part in the survey had no definitive plans to leave the workforce by 2027. However, both orthotic support workers who responded to the survey and worked in North-West England stated that they would probably leave the profession by 2027. Additionally, one of the three support workers currently working in South-West England may also leave the workforce during the same time frame.

Only one orthotic support worker in Yorkshire and Humber indicated that they would definitely remain in the workforce for the next five years. Other orthotic support workers currently working in East England (1), East Midlands (2), London (1), South-West England (1), and South-East England (2) also indicated that they would probably remain in the profession.

Dual practicing P&O support workers

Two dual practicing P&O support workers reported that they would definitely or probably remain in the workforce until 2027. They were working in the West Midlands and South-East England, respectively.

Summary

The group with the highest number of P&O professionals who expressed their intention to leave the workforce by 2027 were those who chose not to reveal their workplace (8, 34.7%). Following them were the regions of South-East England, Yorkshire and Humber, and North-West England, where 26.9% (25), 23.6% (20), and 21.7% (21) of P&O workers respectively indicated they may not continue in the profession for the next five years.

The proportion of P&O workers who would definitely stay in the workforce until 2027 varied by region. Northern Ireland (12, 60.0%) and Wales (23, 57.5%) had the highest percentages of those who were committed to continuing in the P&O workforce. In the other UK regions, the percentage of those who definitely planned to remain in the workforce ranged from 26.1% (6, preferred not to disclose) to 45.7% (21, East England).

Comparison of PO workforce considering leaving the profession by age

POs

(Based on the survey responses from 150 prosthetists, 375 orthotists and 40 dual practicing POs.)

Prosthetists

The age groups located at the extremes of the working age spectrum had the highest percentages of prosthetists who expressed a definitive or probable intention to leave the workforce within the next five years (21-25 years: 4, 66.7%; 61-65 years: 4, 100%; 66-70: 2, 100.0%). The remaining age groups of prosthetists had percentages of those with definitive or possible plans to exit the workforce ranging from 13.3% (2) (46-50 years) to 25.0% (5) (56-60 years).

The age group of 36-40 years had the highest number of prosthetists who would definitely remain in the profession (11, 78.6%), with no respondents stating their intentions to leave by 2027. Similarly, between 40% and 58% of prosthetists in the age groups of 31-60 years expressed definitive plans to stay in the profession. However, only 16.7% (1) and 22.7% (5) of prosthetists in the age groups of 21-25 and 26-30, respectively, would definitely remain in the workforce for the coming years. Although none of the prosthetists aged between 61 and 70 had definite plans to stay in the profession for the next five years, one prosthetist above the age of 71 expressed their intention to remain in the workforce for the upcoming years.

Orthotists

While the age group of 36-55 years exhibited the lowest percentages of orthotists who expressed a desire to leave the profession by 2027, with ranges between 3.7% and 13.5%, the age group of 56-70 years showed the highest percentages of orthotists who intended to leave the workforce, with ranges between 36% and 75%. Among orthotists in their early adulthood (21-35 years), the percentage of those who would definitely or probably leave the profession ranged from 17.3% to 28.6%.

The majority of orthotists in the age groups of 36-40 (28, 54.9%), 46-50 (21, 56.8%), and 51-55 (14, 51.9%) years stated their intention to remain in the profession until 2027. However, approximately 21.4% of orthotists in the 21-25 years age group (6) and 21.0% of orthotists in the 31-35 years age group (13) reported the same intention. The percentage of orthotists who would definitely remain in the workforce for the next five years declined across the age groups over 61 years.

Dual practicing POs

Only one dual practicing PO, aged 51-55 years, confirmed their intention to leave the profession by 2027. However, three other dual practicing POs, one aged 26-30 years and two aged 31-35 years, expressed the possibility of leaving the profession in the same time frame. The percentage of dual practicing POs who definitively planned to stay in the workforce for the next five years varied across age groups, ranging from 14.3% (1) in the 26-30 age group to 71.4% (5) in the 36-40 years age group. Additionally, two dual practicing Pos, one below the age of 20 years and the other aged 56-60 years, reported having definite plans to remain in the workforce until 2027.

P&O technicians

(Based on the survey responses from 42 orthotic technicians, 29 prosthetic technicians, and 15 dual practicing P&O technicians.)

Prosthetic technicians

None of the prosthetic technicians who answered the survey and were younger than 56 years reported to have intentions to leave the workforce within the next five years. In contrast, 27.3% (3) and 50.0% (2) of the prosthetic technicians respectively in the 56 – 60 and 61 – 65 years age groups stated that they would probably leave the profession prior to 2027. One prosthetic technician who preferred to no disclose their age also reported to have definite plans to leave the workforce within the next five years.

Although most prosthetic technicians may potentially continue to work in the profession in the upcoming years, the proportion of prosthetic technicians with a definite plan to remain in the workforce varied by age group. Only 20.0% (1) and 33.3% (2) of professionals in the 26-30 and 56-60 age groups, respectively, intended to stay in the profession for the next five years.

Orthotic technicians

Although no orthotic technicians who participated in the survey expressed a definite plan to leave the profession within the next five years, there was a varying percentage of technicians in each age group (range: 11.7% - 50.0%) who reported that they may leave during the same period. The highest proportion of orthotic technicians considering leaving the profession was among those aged 26-30 years (1, 33.3%) and 61-65 years (3, 50.0%).

The percentage of orthotic technicians with a definite plan to remain in the profession until 2027 differed across age groups. However, there were higher percentages of professionals with a definite intention to stay among the older age groups, with 66.7% (6) and 54.4% (6) of orthotic technicians in the 51-55 and 56-60 years age groups respectively intending to remain in the profession for the next five years.

Dual practicing P&O technicians

Although no P&O technicians who were dual practicing reported definitive plans to leave the workforce by 2027, three orthotic technicians, aged 21-25, 41-45, and 51-55 years, stated that they would probably leave the profession in the upcoming years. Most of the remaining P&O technicians expressed definitive intentions to stay in the workforce until 2027. The highest percentages of dual practicing P&O technicians who reported that they would definitely remain in the workforce until 2027 were observed among those aged 51-55 (6, 66.7%) and 56-60 years (2, 100%).

P&O support workers

(Based on the survey responses from three prosthetic support workers, 10 orthotic support workers and two dual practicing P&O support workers.)

Prosthetic support workers

A prosthetic support worker in the 46-50 years age range indicated that they would likely leave the profession prior to 2027. On the other hand, two prosthetic support workers, one in the 41-45 years age range and another in the 56-60 years age range, expressed their probable intention to remain in the workforce for the next five years.

Orthotic support workers

The survey responses of two orthotic support workers, both aged between 26-35 years, indicated that they would likely leave the UK workforce in the near future. Conversely, none of the eight orthotic support workers in older age groups expressed a similar intention. However, only two of them, aged 46-50 and 56-60 years respectively, confirmed their definite plans to continue in the profession for the next five years.

Dual practicing P&O support workers

Both dual practicing P&O support workers who answered the survey were between 31 and 35 years of age and both stated their probable or definite plan to remain in the workforce until 2027.

Summary

Among survey respondents in the age ranges of 66-70 and 61-65 years, 80.0% (8) and 70.6% (24), respectively, expressed their intention to leave the profession within the next five years. The percentage of professionals indicating their readiness to exit the UK workforce by 2027 was also high among respondents aged 21-25 years (14, 31.8%) and 56-60 years (20, 29.0%). Additionally, 42.9% (3) of respondents who did not disclose their age stated that they would definitely or probably leave the UK P&O workforce within the next five years.

According to the survey results, individuals aged 36-55 years (42.4%-56.3%) were more likely to indicate that they would definitely stay in the workforce until 2027, compared to those aged 21-35 years (range: 22.7%-34.9%) and those over 56 years (range: 11.8%-37.7%).

Comparison of P&O workforce considering leaving the profession by gender

POs

(Based on the responses from 150 prosthetists, 374 orthotists and 40 dual practicing POs)

Prosthetists

Half (4) of the prosthetists who preferred not to specify their gender when they answered the survey reported that they would definitely (1, 12.5%) or probably (3, 37.5%) leave the workforce in the next five years. According to the survey results, a higher percentage of male prosthetists (27.8%) reported that they may leave the profession before 2027 (definitely leave: 4, 7.4%; probably leave: 11, 20.4%), compared to female prosthetists (17, 20.3%). All four prosthetists who considered themselves as non-binary reported that they would definitely or probably remain in the workforce until 2027.

Orthotists

The highest proportion of orthotists who may leave the profession in the next five years was observed among those orthotists who preferred not to specify their gender (5, 45.5%). While 17.5% of the female orthotists reported that they would definitely (5, 2.6%) or probably leave (29, 14.9%) the profession by 2027, 24.7% of the orthotists who identified as male may make the same decision in the coming years (definitely leave: 16, 9.6%; probably leave: 25, 15.1%). One non-binary orthotic respondent (33.3%) would also definitely leave the workforce in the same time period. The orthotist who described themselves as genderfluid would probably remain.

Dual practicing POs

Eleven percent (2) and 14.3% (3), respectively, of the male (definitely leave: 1, 5.6%; probably leave: 1, 5.6%) and female (probably leave: 3, 14.3%) dual practicing POs who took part in the survey reported that they would definitely or probably leave the workforce within five years. The dual practicing POs who preferred not to specify their gender said that they would definitely remain in the workforce for the next coming years.

P&O technicians

(Based on the responses from 29 prosthetic technicians, 42 orthotic technicians and 15 dual practicing P&O technicians.)

Prosthetic technicians

Out of the 29 prosthetic technicians who participated in the survey, 23 identified as male and 6 as female. All of the female prosthetic technicians (6) reported that they would definitely (1, 16.7%) or probably (5, 83.3%) stay in the workforce for the next five years. However, 21.7% of male prosthetic technicians reported that they would definitely (1, 4.3%) or probably (4, 17.4%) leave the workforce in the coming years. Approximately 30.0% of male prosthetic technicians (7, 30.4%) stated that they would definitely remain in the workforce until 2027.

Orthotic technicians

All except two of the orthotic technicians who took part in the survey identified themselves as male (40). The two remaining orthotic technicians preferred not to specify their gender. Twenty-three percent (9) of the male orthotic technicians reported that they would definitely (2, 5.0%) or probably plan (7, 17.5%) to leave the workforce within the next five years. Less than half (19, 47.5%) of the male orthotic technicians who answered the survey had definitive plans to remain in the profession. One of the two orthotic technicians whose gender is unknown also reported that they would probably leave the workforce by 2027.

Dual practicing P&O technicians

Most of the dual practicing P&O technicians who participated in the survey identified as male (11), while three identified as female, and one did not disclose their gender. All of the female dual practicing P&O technicians and the respondent who did not specify their gender stated that they would definitely or probably stay in the workforce for the next five years. In contrast, 27.3% (3) of male dual practicing P&O technicians may probably leave the profession by 2027.

P&O support workers

(Based on the responses from three prosthetic support workers, 10 orthotic support workers, and two dual practicing P&O support workers.)

Prosthetic support workers

Out of the three prosthetic support workers who participated in the study, two identified themselves as female and one as male. One of the female prosthetic support workers stated that she would probably leave the workforce within the next five years. However, neither of the two other respondents had a definite intention to remain in the workforce until 2027.

Orthotic support workers

The majority of orthotic support workers who participated in the survey identified as female (8), while two identified as male. None of the male orthotic support workers had plans to leave the workforce in the next five years. However, 25% (2) of the female orthotic support workers who participated in the survey indicated that they would probably leave the workforce in the coming years, and only 25% (2) were definitely planning to stay.

Dual practicing P&O support workers

Both dual practicing P&O support workers who answered the survey identified themselves as female. While one expressed a likelihood of staying in the workforce for the next five years, the other had definite plans to remain.

Summary

The highest proportion of P&O support workers who would definitely (1, 4.3%) or probably leave (9, 39.1%) the workforce within the next five years preferred not to say the gender they identify with. More male (definitely leave: 24, 7.6%; probably leave: 51, 16.2%) than female (definitely leave: 8, 2.5%; probably leave: 49, 15.3%) P&O workers may leave the profession in the coming years. Only one non-binary respondent (14.3%) would definitely leave the P&O workforce by 2027. The survey respondent who self-described as genderfluid would probably remain in the workforce for the next five years.

Comparison of PO workforce considering leaving the profession by their caring responsibilities

POs

(Based on the responses from 149 prosthetists, 375 orthotists and 40 dual practicing POs)

Prosthetists

Among the prosthetists who took part in the survey, 74 had caring responsibilities, 68 did not and seven preferred not to say. The highest percentage of prosthetists who would definitely or probably leave the workforce within five years was observed among those prosthetists who did not specify their care duties (definitely leave: 1, 14.3%; probably leave: 1, 14.3%). While approximately 45% of the prosthetists with (34, 45.9%) or without (30, 44.1%) caring responsibilities would definitely remain in the profession, only 28.6% (2) of those prosthetists who did not disclose this information would do the same.

Orthotists

While 193 of the orthotists who answered the survey had caring responsibilities, 176 reported not having caring responsibilities and six preferred not to say whether they had them or not. Sixteen percent (27) of the orthotists with caring responsibilities reported that they would definitely or probably leave the orthotic workforce within five years (definitely leave: 5, 2.6%; probably leave: 25, 13.0%). The proportion of people who would definitely or probably leave the profession was more than double among orthotists without caring responsibilities (definitely leave: 17, 9.7%; probably leave: 31, 17.6%). Those orthotists who preferred not to specify whether they had caring responsibilities or not may or may not leave the workforce.

Dual practicing POs

Of the dual practicing POs who answered the survey, 18 had caring responsibilities and 22 did not. Just over 10% of the dual practicing POs with and without caring responsibilities may leave the P&O workforce in the next five years (caring responsibilities, yes: definitely leave: 1, 5.6%; probably leave: 1, 5.6%; caring responsibilities, no: probably leave 3, 13.6%). Approximately 45% of both groups had definitive plans to remain in the P&O workforce (caring responsibilities, yes: 8, 44.4%; caring responsibilities, no: 10, 45.5%).

P&O technicians

(Based on the responses from 29 prosthetic technicians, 42 orthotic technicians, and 15 dual practicing P&O technicians)

Prosthetic technicians

Compared to prosthetic technicians who had caring responsibilities (definitely yes, 1, 6.3%; probably yes, 1, 6.3%), a greater percentage of those without caring responsibilities (3, 23.1%) are likely to exit the workforce within five years. Nineteen percent (3) of the prosthetic technicians with caring responsibilities stated with certainty that they intend to continue working in the field until 2027.

Orthotic technicians

Of the orthotic technicians who answered the survey, 21 had caring responsibilities, 19 did not and two preferred not to specify what they current care duties were. Most of the orthotic technicians who would definitively or probably leave the profession within five years had caring responsibilities (33.4%) or preferred not to say (50%). In contrast, 63.1% (12) of the orthotic technicians without caring responsibilities have definitive plans to remain in the workforce within the same time frame.

Dual practicing P&O technicians

Most dual practicing P&O technicians reported not have caring responsibilities (caring responsibilities, yes: 3; no: 12). One dual practicing P&O technician with caring responsibilities and two without care duties reported that they would probably leave the workforce by 2027.

P&O support workers

(Based on the responses from three prosthetic support workers, 10 orthotic support workers and two dual practicing P&O support workers)

Prosthetic support workers

Of the three prosthetic support workers who answered the survey, one had caring responsibilities and two did not. While the prosthetic support worker with caring responsibilities would probably leave the workforce within five years, the two prosthetic support workers without caring responsibilities would probably remain in the profession until 2027.

Orthotic support workers

Most of the orthotic support workers did not have caring responsibilities (caring responsibilities, yes: 4; no: 6). One orthotic support worker without caring responsibilities and one with caring responsibility reported that they would probably leave the workforce within five years. None of the support workers with caring responsibility would definitely remain in the workforce until 2027.

Dual practicing P&O support workers

Two dual practicing P&O support workers answered the survey. Regardless of their different care duties, both of them reported that they would definitely or probably remain in the workforce for the next five years.

Summary

The largest proportion of the P&O workforce who would definitely or probably leave the profession by 2027 preferred not to specify whether they had caring responsibilities or not (6, 40%). Twenty-four percent (76) of the survey respondents without caring responsibilities would definitely or probably leave the P&O workforce in five years. In contrast, 18.4% (61) of survey respondents with caring responsibilities may leave the profession in the coming years.

It is noteworthy that the prosthetists, orthotists and dual practicing POs who would definitely or likely leave the P&O workforce did not generally have any caring responsibilities or chose not to disclose whether they did. Conversely, the P&O technicians and support workers who would definitely or probably leave the profession by 2027 were more likely to have caring responsibilities or opted not to disclose this information.

Comparison of PO workforce considering leaving the profession by their employer (NHS vs private company)

(Based on the responses from 621 respondents, 210 were employed by the NHS and 411 by private companies.)

NHS

(Of the 210 NHS respondents, 35 were prosthetists, 140 orthotists, four dual practicing POs, 14 orthotic technicians, four prosthetic technicians, eight orthotic support workers, and five dual practicing P&O technicians.)

The NHS-employed survey respondents who would definitely or probably leave the profession within five years were working as prosthetists, orthotists, orthotic technicians and orthotic support workers. In these professions, the highest percentage of people who may leave the prosthetic and orthotic profession within five years was observed among orthotic support workers (probably leave: 2, 25.0%), followed by orthotic technicians (definitely leave: 1, 7.1%; probably leave: 3, 21.4%). The percentages of NHS-employed orthotists and prosthetists who may leave the P&O workforce stayed below 20% (orthotists: probably leave: 17, 12.1%, definitely leave: 8, 5.7%; prosthetists: definitely leave: 4, 11.4%). None of the NHS-employed dual practicing POs, dual practicing P&O technicians, and prosthetic technicians who answered the survey reported that may leave the P&O profession within the next five years. There was variation in the proportion of NHS workers who had definite plans to stay in the P&O workforce (ranging from 25% to 57.1%), with the highest proportion observed among prosthetists.

Private Company

(Of the 411 privately employed respondents, 100 were prosthetists, 216 orthotists, 27 dual practicing POs, 29 orthotic technicians, 21 prosthetic technicians, 10 dual practicing P&O technicians, three prosthetic support workers, three orthotic support workers and two dual practicing P&O support workers.)

Privately employed respondents from all P&O staffing groups expressed intentions to leave their respective professions within five years. With the exception of dual practicing POs, more than 20% of respondents from all professions reported that they would definitely or probably leave the workforce in the next five years. For prosthetic support workers, orthotic support workers, and dual practicing P&O technicians, the proportion of those who may leave the profession was even higher, exceeding 30% (prosthetic support workers: probably yes: 1, 33.3%; orthotic support workers: probably yes: 1, 33.3%; dual practicing P&O technicians: 3, 30.0%).

None of the privately employed prosthetic and orthotic support workers who participated in the survey reported that they would definitely stay in the UK P&O workforce for the next five years. In contrast, one dual practicing P&O support worker reported to have definitive plans to remain in the profession within the same time frame. There was a range of proportions in terms of those who expressed a clear intention to remain in the workforce, varying across professions (28.6%-48.3%), with the lowest proportion seen among prosthetic technicians and the highest proportion among orthotic technicians.

Summary

According to the survey results, a higher percentage of the privately employed P&O workforce (24.1%) reported that they would definitely or probably leave the UK P&O workforce within five years, compared to their NHS-employed counterparts (16.7%). Specifically, 6.2% (23) of NHS-employed workforce said they would definitely leave, and 10.5% (22) said they would probably leave, whereas 4.6% (19) of privately employed workforce said they would definitely leave and 19.5% (80) said they would probably leave.

Comparison of PO workforce considering leaving the profession by their salary

POs

(Based on the survey responses from 150 prosthetists, 400 orthotists and 37 dual practicing POs.)

Prosthetists

The highest proportion of prosthetists who would definitely (1, 12.5%) or probably (3, 37.5%) leave the UK workforce by 2027 preferred not to disclose their salary. Two prosthetists had a salary below £20,270 and between £23,949 - £26,282, and both reported that they would probably leave the profession within the next five years. While over 20% of the prosthetists in the NHS Band 5 (5, 20.9%) and Band 6 (13, 25.5%) pay ranges reported that they would probably or definitely leave the profession before 2027, a smaller proportion of those in higher pay bands expressed the same intention (Band 7: 12, 46.2%; Band 8a: 3, 17.7%; Band 8b: 1, 20.0%). One prosthetist with an income in the NHS Band 8d range said they would definitely leave within the next five years.

A higher proportion of prosthetists in the higher pay bands said they would definitely remain in the workforce until 2027. No prosthetists with a salary below the NHS Band 4 threshold planned to remain, while around 60-70% of those in NHS Band 8 pay bandings (NHS Band 8a: 10, 58.8%; NHS Band 8b: 3, 60.0%; NHS Band 8c: 1, 33.3%) said they would definitely remain, except for those in NHS Band 8b where only one in three said they would definitely stay. No prosthetists in the NHS Band 8c and 9+ pay bands expressed intentions to leave the profession within the next five years.

Orthotists

The survey results indicated that a significant proportion of orthotists across all pay bands would likely leave the UK workforce by 2027. Specifically, 75% (3) of those earning less than £20,270 per year expressed definite or probable plans to leave within the next five years. Among orthotists with an income equivalent to an NHS 8c pay banding, 55.5% (5) reported that they may leave by 2027, as did 41.2% (4) of those who preferred not to disclose their salary.

No orthotists earning less than the NHS Band 4 pay threshold expressed a definite intention to remain in the workforce until 2027. However, 80% (4) of the orthotists with a salary between £21,730 and £23,177 (Band 3) reported that they may probably stay. The percentage of orthotists who would definitely remain in the profession for the next five years was generally greater in the higher NHS pay bandings, reaching approximately 60% of the respondents in the NHS 8d (3, 60%) and 9+ pay banding (5, 62.5%). Only 11.8% (2) of those who did not disclose their salary said they would definitely continue to be part of the UK workforce for the next five years.

Dual practicing POs

Based on the survey responses, only one dual practicing PO with a salary falling within the NHS Band 8b pay range would definitely leave the UK workforce by 2027. However, three dual practicing POs, one with an NHS Band 3 and two with an NHS Band 6 salary, may also probably leave the profession within the next five years.

None of the dual practicing POs earning less than the NHS Band 4 pay threshold expressed a definite intention to remain in the workforce for the next five years. The proportions of dual practicing professionals having a definitive plan to stay in the profession varied across the pay bands. The highest proportion of dual practicing POs who would definitely remain in the workforce had a salary equivalent to an NHS Band 8b pay (3, 75.0%) or preferred not to disclose their salary (4, 57.1%). All three dual practicing POs in the NHS Band 8c or 8d pay banding stated that they would also definitely remain in the workforce until 2027.

P&O technicians

(Based on the survey responses from 28 prosthetic technicians, 36 orthotic technicians and 16 dual practicing P&O technicians.)

Prosthetic technicians

Prosthetic technicians earning an income corresponding to the NHS Band 5 pay range had the highest percentage of those who would definitely (1, 9.1%) or probably (4, 36.4%) leave the profession by 2027. Despite differences in pay band, most prosthetic technicians expressed that they may remain in the profession for the next five years. One technician with a salary within the NHS Band 6 pay range, four technicians in the NHS Band 5 pay range (36.4%) and two technicians in the NHS Band 4 pay range (33.3%) reported that they would definitely continue working in the P&O workforce.

Orthotic technicians

For orthotic technicians, the highest proportion of those who may leave the profession by 2027 were in the NHS Band 4 pay range (£23,949 - £26,282) (3, 50.0%). Furthermore, 30.8% (4) and 20.0% (1) of the orthotic technicians falling within the NHS Band 3 and 5 pay ranges respectively also reported that they would definitely or probably leave the profession by 2027. The proportion of orthotic technicians who would definitely remain in the profession appeared to be greater in the higher pay bandings. Three (60%) of the orthotic technicians with a salary falling within the NHS Band 3 pay range also reported that they would definitely remain in the profession for the next five years.

Dual practicing P&O technicians

All three dual practicing P&O technicians on a salary between £33,706 - £40,588 (NHS Band 6 (or equivalent) stated that they would definitely remain in the workforce for the next five years. In contrast, one dual practicing P&O technicians currently earning either an NHS Band 3, 4, or 5 salary stated that they would probably leave the profession by 2027.

P&O support workers

(Based on the survey responses from 2 prosthetic support workers, 7 orthotic support workers and 2 dual practicing P&O support workers.)

Prosthetic support workers

Two prosthetic support workers whose salary fell within the NHS Band 3 and Band 4 pay ranges respectively indicated that they would probably remain in the workforce within the same time frame.

Orthotic support workers

The survey results showed that two orthotic support workers, who earned salaries corresponding to NHS Band 2 and Band 4 respectively, reported that they would probably leave the profession within the next five years. Only two orthotic support workers with a salary within the NHS Band 4 pay range expressed a definite intention to remain in the profession until 2027. The remaining support workers stated that they would likely continue to work in the P&O field for the next five years.

Dual practicing P&O support workers

Two dual practicing P&O support workers, who earned less than £20,270 and between £21,730 and £23,177 per year for their P&O role respectively, stated that they would definitely and probably remain in the workforce until 2027.

Summary

The majority of professionals who may leave the workforce by 2027 had an annual income of less than £20,270 in their P&O roles (4, 57.2%). Among the P&O workforce whose salaries were within the NHS pay ranges of Band 8c, Band 8d, and Band 3, a significant percentage of them (30-39%), also reported that they may leave their jobs within the next five years.

The survey results revealed that those with higher salaries in the P&O workforce showed a greater inclination to definitely remain in the workforce for the next five years. A significant proportion of those earning salaries within the NHS pay ranges of Band 8b, Band 8d, and Band 9+ (49-60%), stated that they would definitely remain in the workforce for the next five years. In contrast, only a small percentage (14-17%), of the workforce earning less than £20,270 or between £21,730 and £23,177, expressed a definite intention to stay in the profession for the next five years. Less than 40% (5, 38.5%) of those with a salary equivalent to an NHS Band 8c pay band expressed a definite intention to continue their P&O work until 2027.

Comparison of PO workforce considering leaving the profession by their type of contract

POs

(Based on the responses from 151 prosthetists, 376 orthotic technicians and 37 dual practicing POs)

Prosthetists

Most of the prosthetists who answered the survey had a permanent/substantive contract. Those with other contract types had a fixed term (5), a temporary contract (3) or no contract as they were either self-employed (2) or the director of the company (1). Twenty-four percent (34) of the permanently employed prosthetists reported that they would definitely or probably leave the workforce within five years. Only 45% (63) of the permanently employed prosthetists reported to have definite plans to remain in the workforce. Of those prosthetists without a permanent contract, two self-employed prosthetists would probably leave the workforce by 2027.

The contract type significantly influenced the proportion of prosthetists who would definitely remain in the profession for the next five. Only 20% (1) of the fixed-term employed prosthetists who answered the survey would definitely remain in the workforce until 2027. Two of the three prosthetists with a temporary contract (66.7%) reported to have a definite intention to continue to be part of the UK P&O workforce for the next five years.

Orthotists

The survey responses from orthotists indicated that the majority had a permanent contract (345). Of these, 37.4% (129) reported a definite intention to remain in the UK workforce for the next five years, while 21.7% (75) reported definite or probable plans to leave before 2027.

Over 35% of the orthotists with a temporary contract (4, 36.4%) reported that they would definitely (1, 9.1%) or probably (3, 27.3%) leave the workforce in the same time frame. Less than 10% (1, 9.1%) of the orthotists with temporary contracts would definitely remain in the workforce for the next five years.

For those with fixed-term contracts or who were self-employment, 9.1% (1) and 16.7% (1), respectively, reported plans to definitely or probably leave before 2027. Of those with fixed-term contracts, 27.3% (3) reported a definite intention to remain, while only one self-employed orthotist (16.7%) reported the same. Both orthotists who did not specify their contract type reported probable or definite plans to remain in the workforce.

Dual practicing POs

Of the dual practicing POs who answered the survey (37), 31 had a permanent/substantive contract, three had a fixed-term position, two a temporary contract and one preferred not to specify their type of contract. Five (16.1%) of the dual practicing POs with a permanent/substantive contract reported that they would definitely (1, 3.2%) or probably (4, 12.9%) leave the workforce within five years. Twelve (38.7%) of these respondents said that they had definite plans to stay in the workforce during the same period. None of the dual practicing POs with a contract other than permanent/substantive reported that they would definitely or probably leave the workforce by 2027. Half (3) of the dual practicing POS with a contract other than permanent/substantive indicated that they would definitely remain in the profession.

P&O technicians

(Based on the survey responses from 28 prosthetic technicians, 42 orthotic technicians and 16 dual practicing P&O support technicians)

Prosthetic technicians

Most survey respondents working as a prosthetic technician had a permanent/substantive contract. Only two prosthetic technicians had either a fixed term or a temporary contract. While both prosthetic technicians with a fixed term or temporary contract would probably remain in the workforce until 2027, 19.2% (5) of the prosthetic technicians with a permanent/substantive contract would definitely (1, 3.8%) or probably leave (4, 15.4%) the profession in the coming years. Seven (26.9%) of those with a permanent/substantive contract would definitely remain in the UK workforce for the next five years.

Orthotic technicians

Out of the 42 orthotic technicians who participated in the survey, 35 had a permanent contract while the remaining had either no contract as they were self-employed (1), a fixed-term (2) or a temporary (4) contract. The percentage of those who would probably or definitely leave the workforce by 2027 was similar for those with a permanent/substantive contract (definitely leave: 2, 5.7%; probably leave: 2, 20.0%) and a temporary contract (probably leave: 1, 25.0%). In contrast, none of the orthotic technicians who were self-employed or had a fixed-term contract had plans to leave the workforce by 2027. Approximately 40-50% of the orthotic technicians with a permanent/substantive or temporary contract expressed their definite intention to remain in the UK workforce in the next five years.

Dual practicing P&O technicians

Of the 16 dual practicing P&O technicians who took part in the survey, all but two had a permanent/substantive contract. The remaining two had a fixed term contract. One of these dual practicing P&O technicians with a fixed term contract expressed their intention to probably leave the workforce within the next five years. Among the 14 dual practicing P&O technicians with a permanent contract, 14.3% (2) would also consider leaving the P&O workforce.

P&O support workers

(Based on the survey responses from three prosthetic support workers, 10 orthotic support workers and two dual practicing P&O support workers)

All support workers who answered the survey (15) had a permanent/substantive contract. Among the prosthetic support workers who responded to the survey (3), one (33.3%) indicated that they would probably leave the workforce within the next five years. Among the 10 orthotic support workers, 20.0% (2) expressed that they would probably consider leaving the workforce within that same timeframe. Both dual practicing P&O support workers who participated in the survey reported that they had definite (1) or probable (1) intentions to stay in the UK workforce for the next five years.

Summary

Respondents who were self-employed and had no contract had the highest proportion of those who would definitely (1) or probably (2) leave the UK P&O workforce within the next five years (3, 33.3%). Close to a quarter of those with temporary (5, 23.8%) and permanent/substantive contracts (133, 22.0%) also reported that they would definitely or probably leave the workforce by 2027. Three respondents who preferred not to specify their type of contract, and one who reported not having a contract as they were the director of a company, stated that they would definitely or probably remain in the UK workforce for the next five years.

Comparison of PO workforce considering leaving the profession by their work pattern

POs

(Based on the responses from 166 prosthetists, 405 orthotists and 41 dual practicing POs)

Prosthetists

The proportion of prosthetist respondents who would definitely or probably leave the UK workforce within the next five years varied considerably across work patten categories. While the percentage of prosthetists who may leave the profession in the next five years was of approximately 20% in work pattern categories consisting of ≥ 26 hours per week (26-37 hours per week: 4, 19.1%; ≥ 37.5 hours per week: 24, 22.0%), a considerable higher number of prosthetists currently working less than 25 hours per week or having a flexible hour/zero hour contract stated that they would definitely or probably leave the workforce by 2027 (range: 41.6% - 100%). Prosthetists who worked 17-25 hours per week had the lowest number (4, 33%) with a clear intention to stay in the profession for the next five years.

Orthotists

The percentage of orthotist respondents who reported that they would definitely or probably leave the profession within the next five years varied according to the type of work pattern. Less than 20% of the orthotists working part-time (17-25 hours per week: 6, 14.7%) or flexible hours/zero hour contract (1, 16.7%) declared that they would leave the profession by 2027, while 22% (61) and 25.5% (12) of the orthotists working full-time (37.5 hours or more per week) and part-time (26-37 hours per week), respectively, reported that they may leave the workforce by 2027. In addition, 40-50% of the orthotic respondents who were not currently working or were working less than 16 hours per week may also leave the profession in the coming years. Although orthotists who worked full-time had a higher proportion of intention to stay in the profession for the next five years, it did not exceed 40% (107, 38.5%). Only 20% (1) of the orthotists who were currently working 16 hours or less per week would definitely remain in the workforce until 2027.

Dual practicing POs

Most of the dual practicing POs who answered the survey had a full-time position (37.5 hours or more per week: 35) and the majority of them (20, 85.7%) reported that they would probably or definitely remain in the profession for the next five years. Only three of the dual practicing POs who answered the survey had a work pattern other than full-time and they all stated that they would definitely remain in the P&O workforce for the next five years.

P&O technicians

(Based on the responses from 28 prosthetic technicians, 42 orthotic technicians, and 16 dual practicing P&O technicians.)

Prosthetic technicians

Of the prosthetic technicians who answered the survey (28), all except two had a full-time position (37.5 hours or more per week). Of those not working full-time, one was working 26 -37 hours per week and the other 17-25 hours. Just under 20% of the full-time prosthetic technicians reported that they would definitely (1, 3.8%) or probably (4, 15.4%) leave the workforce within five years, while the two part-time prosthetic technicians who participated in the survey reported that they would probably remain in the profession during the next five years.

Orthotic technicians

Most of the respondents who were working as orthotic technicians had a full-time job (36). Six orthotic technicians had a part-time position (part-time, 26-37 hours per week, 4; part-time, 17-25 hours per week, 2). A quarter (9) of both the full-time and part-time (26-37 hours per week; 1) technicians stated that they would definitely or probably leave the profession by 2027. The proportion of orthotic technicians who may leave the workforce in the next five years reached 50% (1) among part-time (17-25 hours per week) orthotic technicians. In all work pattern categories, 50% or fewer orthotic technicians reported a definite intention to remain in the workforce.

Dual practicing P&O technicians

All except one of the dual practicing P&O technicians who answered the survey (16) were working full-time (37.5 hours or more per week). A fifth (3) of the full-time dual practicing P&O technicians reported that they would probably leave the workforce by 2027. The only two part-time (26-37 hours per week) dual practicing P&O technicians who took part in the survey stated that they would definitely continue to be part of the workforce for the next five years.

P&O support workers

(Based on the survey responses from three prosthetic support workers, 10 orthotic support workers orthotic technicians, and two dual practicing P&O technicians.)

Prosthetic support workers

All three prosthetic support workers who answered the survey had a full-time position. Of them, one would probably leave the profession within the next five years, and none of the remaining two would definitely stay until 2027.

Orthotic support workers

Of the nine orthotic support workers who participated in the survey, six were in full-time employment (37.5 hours or more per week), three were working part-time between 26-37 hours per week and one had a part-time position of 17-25 hours per week. One full-time (16.7%) and one part-time (26-37 hours per week) (33.3%) orthotic support worker reported that they would probably leave the profession by 2027. The orthotic support worker currently working part-time (17-25 hours per week) stated that they would probably remain in the P&O workforce for the next five years.

Dual practicing P&O support workers

Two dual practicing P&O support workers answered the survey and they both had a full-time position, with one of them stating that they would definitely remain in the profession for the next five years.

Summary

Across the various work pattern categories, the percentage of survey respondents who indicated that they would definitely or probably leave the P&O workforce within the next five years ranged from 19% to 57.1%.

Section 2: Prosthetic and Orthotic Profession for the 21st Century

Introduction

An understanding of the need and unmet needs for prostheses and orthoses is essential for planning and developing services. A report in 2015[7] reported that the demand for orthotists is likely to rise in line with increases in the ageing population and rising prevalence of obesity, diabetes, cardiovascular and peripheral vascular diseases. It suggested that due to the severe shortage of orthotists in the NHS that there will need to be a 30% to 50% increase in the number of orthotists to meet current and future demand. An updated projection of increased demands on the prosthetic and orthotic workforce is required, alongside the driving factors for such demands. An exploration of the skill gap of the current workforce is required, alongside an understanding of the student population who are preparing to join the profession.

The World Health Organization's rapid Assistive Technology Assessment tool (rATA) is a survey tool for mapping of need, demand, supply, and user satisfaction with assistive technology; with prostheses and orthoses listed within their list of mobility assistive technology products. A small-scale rATA, with 259 respondents, was conducted in the UK in 2021, with findings showing that 7.3% of survey respondents used lower limb orthoses, 2.3% used therapeutic footwear, 1.2% used upper limb orthoses and 0.4% used upper and lower limb prostheses and spinal orthoses[30]. A larger scale rATA survey has recently been conducted in England, once published (due for publication in May 2023) this will provide further information to support P&O workforce planning.

What does the future P&O workforce look like?

The information provided in this section is based on the responses from the survey of the P&O workforce and the freedom of information requests to Higher Education Institutes providing programmes for the P&O workforce.

POs

Survey respondents were asked if they were currently completing a university academic qualification, 26 (6.4%) orthotists, 11 (6.2%) prosthetists, and 3 (6.7%) dual practicing POs selected "yes". The qualifications they were undertaking are presented in Table 9, with postgraduate master's degree receiving the most responses. Three orthotists and one dual practicing PO were currently completing a PhD/Professional Doctorate.

Those not currently completing a university academic qualification were asked if they had any plans to undertake any university academic qualification within the next five years. Most of these respondents selected that they were not considering completing a qualification, 259 (75.1%) orthotists, 100 (73%) prosthetists, and 25 (69.4%) dual practicing POs. Most of those who were considering completing a university academic qualification (37 orthotists, 12 prosthetists and 4 dual practicing POs) wanted to complete a postgraduate master's degree. A small number of respondents (15) wanted to complete a PhD/Professional Doctorate; seven orthotists, four prosthetists, and four dual practicing POs.

7. NHS England. Improving the Quality of Orthotics Services in England.; 2015. https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2015/11/orthcs-final-rep.pdf
30. Healy A, Dakin-Poole E, Sinclair J, Chockalingam N. Measuring Access to Assistive Technology Using the WHO Rapid Assistive Technology Assessment (rATA) Questionnaire in the United Kingdom. In: Petz A, Hoogerwerf EJ, Mavrou K, eds. ICCHP-AAATE 2022 Open Access Compendium "Assistive Technology, Accessibility and (e)Inclusion" Part II. ; 2022:86-94. doi:10.35011/icchp-aaate22-p2

University academic qualification	Orthotist		Prosthetist		Dual practicing PO	
	Number	%	Number	%	Number	%
University undergraduate - Certificate	1	4.0%	1	9.1%		
University undergraduate - Diploma					1	33.3%
University postgraduate - Masters	14	56.0%	4	36.4%	1	33.3%
University postgraduate - PhD/Professional Doctorate	3	12.0%			1	33.3%
University postgraduate - Certificate	4	16.0%	2	18.2%		
University postgraduate - Diploma	1	4.0%	3	27.3%		
Master's level module	2	8.0%				
Prefer not to say	2	8.0%				
Invalid response			1	9.1%		

Table 9: University academic qualifications currently undertaken by PO survey respondents.

Current PO students/apprentices

There are currently four higher education institutions providing full-time in-person programmes for POs: BSc (Hons) Prosthetics and Orthotics (University of Salford and University of Strathclyde), Prosthetic and Orthotic degree apprenticeship (University of Derby) and MSc Prosthetics and Orthotics (Keele University). The maximum number of students that the institutions had capacity to accept into their PO programmes for 2022/2023 was reported as 93 with information gained from freedom of information requests; 38 for the University of Salford, 35 for the University of Strathclyde, 20 for Keele University, and Derby did not respond to this question.

The number of students currently in these programmes is provided in Figure 30. Most of the students in these programmes are <20 years old. The University of Salford stated that the higher number of students in their 1st-year cohort compared to their other two cohorts was because it included students who joined the course following completion of a foundation year, as well as students repeating from previous years. Information from the University of Derby is not included in this figure as they have a small number of apprentices (10), and in compliance with the Freedom of Information Act 2000 to prevent the possibility of individuals being identified in the case of small numbers, where there are between one and four individuals in a category they have shown the figure as <5.

Most students and apprentices are British (205/271; 75%), 10% were categorised as other as the University of Salford provided nationality data as either British or other. There are currently eight students from Saudi Arabia, seven from Singapore, five from Spain, two from Canada, and one each from Brunei, Denmark, Estonia, Nigeria, Norway, South Africa, and the USA. The ethnicity of the students/apprentices is largely White (63.3%), followed by mixed (4.7%), Asian (2.3%), and Black (1.6%); with unknown ethnicity for 17.2% of students/apprentices (note data from the University from Salford was excluded from the ethnicity analysis due to ambiguity in the provided data).

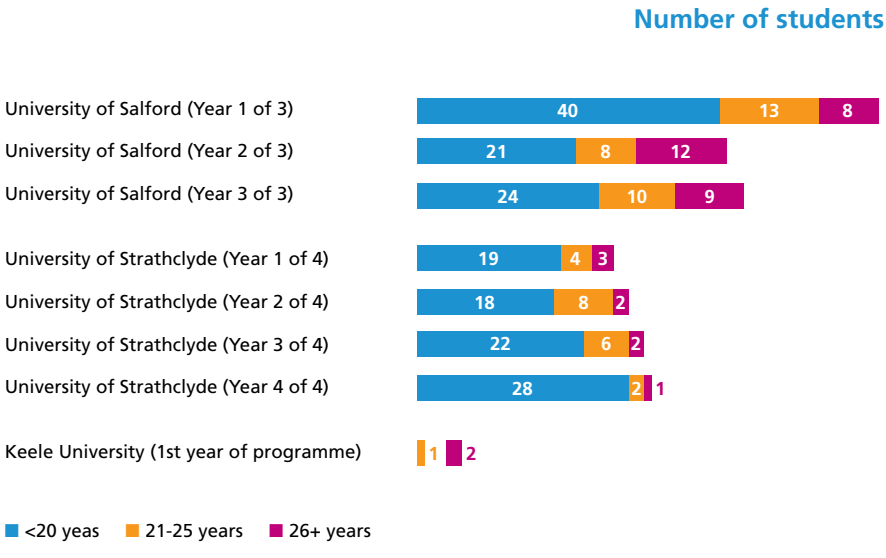


Figure 30: Number of students completing BSc (Hons) Prosthetics and Orthotics (University of Salford and University of Strathclyde) and MSc Prosthetics and Orthotics (Keele University).

Figure 31: Nationality and ethnicity of students/apprentices completing BSc (Hons) Prosthetics and Orthotics (University of Salford and University of Strathclyde), Prosthetic and Orthotic Degree Apprenticeship (University of Derby) and MSc Prosthetics and Orthotics (Keele University).

The overall majority of students completing PO qualifications are women (63%) (see Figure 32), most identified as having no religion (42%) (see Figure 33) and 31% identified as having a disability.

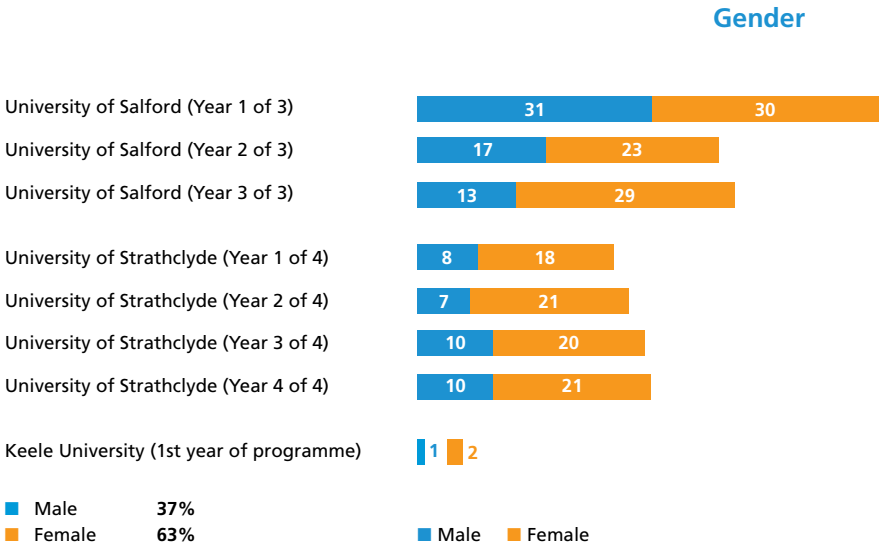


Figure 32: Number of students categorised by gender completing BSc (Hons) Prosthetics and Orthotics (University of Salford and University of Strathclyde) and MSc Prosthetics and Orthotics (Keele University).

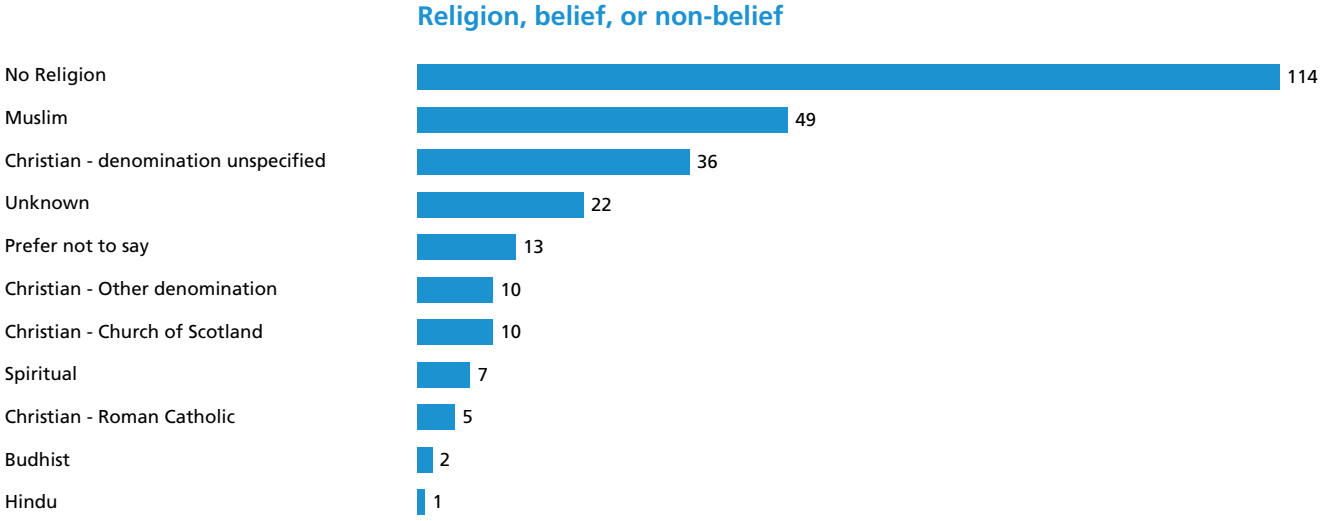


Figure 33: Number of students categorised by religious beliefs completing BSc (Hons) Prosthetics and Orthotics (University of Salford and University of Strathclyde) and MSc Prosthetics and Orthotics (Keele University).

Most students and apprentices (92%) reported that they planned to register as a PO in the UK after graduation. Of those respondents who were not planning to register as a PO, eight reported that they were international students who wished to return home to work or wished to work internationally; one was interested in a research career; and one was unhappy with UK pay and conditions. In terms of career goals, the most popular responses were to work as a prosthetist (41%), a dual practicing PO (39%), and an advanced clinical practitioner or consultant PO (39%). In addition, 66% of students and apprentices reported that they would like to work in the NHS.

P&O technicians

Three respondents selected that they were currently completing a university qualification. The qualifications currently being studied were an undergraduate degree, a postgraduate master's and a postgraduate certificate. Two respondents reported they had already completed a master's degree. Nine respondents planned to undertake a university qualification within the next five years, with levels from undergraduate diploma to PhD. The most common qualification, being considered by three respondents, was a postgraduate master's degree.

The University of Derby's Level 3 Prosthetic and Orthotic Technician Apprenticeship currently has five apprentices on the programme who are due to finish their programme in September 2023. They will complete their End Point Assessment (EPA) within six months after completing the programme.

P&O support workers

One P&O support worker selected that they were currently completing a university academic qualification, which was a postgraduate master's degree. Two said they were planning on undertaking a university academic qualification within the next five years; one was planning to complete an undergraduate certificate qualification and one an undergraduate degree.

The support workers who responded to the workforce survey were asked if they could access training to become a PO, would this be of interest to them, with an equal number of respondents (7, 43.8%) selecting yes and no, one selected that that didn't know, and one did not respond to the question.

What is the current capacity for training POs in the UK?

The current total capacity for training POs in UK higher education institutes is 93. From the FOI responses from the higher education institutes, the capacity for each institute was reported as:

- University of Strathclyde: **35**
- University of Salford: **38**
- Keele University: **20**
- University of Derby: **did not respond**

What are the future risks to the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce.

POs

Survey respondents were asked if they planned to remain in the UK P&O workforce for the next five years, with only 32.5% (136) of orthotists, 37.3% (66) of prosthetists, and 40% (18) of dual practicing POs stating that they "definitely would" remain (see Figure 34). Those who selected "probably yes", "probably no" and "definitely no" were asked to provide the reason(s) why they were considering leaving the P&O workforce; this question was asked to 245 (58.5%) orthotists, 85 (48.0%) prosthetists, and 22 (48.9%) dual practicing POs. A total of 31 different reasons for considering leaving the profession were provided, and the five reasons with the highest responses were lack of progression opportunities (45.7-54.5% across POs), work/lifestyle balance (31.8-40.4%), ability to earn more elsewhere (32.9-36.4%), workload/caseload (31.8-36.5%), and inadequate length of appointments (11.8-27.3%) (see Figure 35).

Do you plan to remain in the workforce in the UK for the next 5 years?

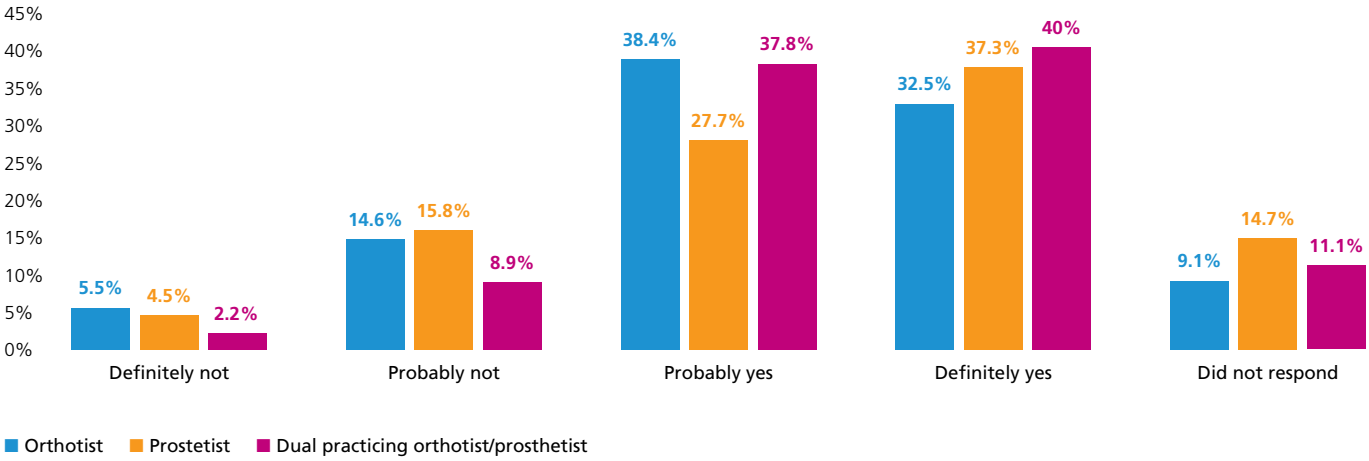


Figure 34: PO survey responses on planning to remain in the UK P&O workforce for the next five years.

Reasons for considering to leave the P&O workforce

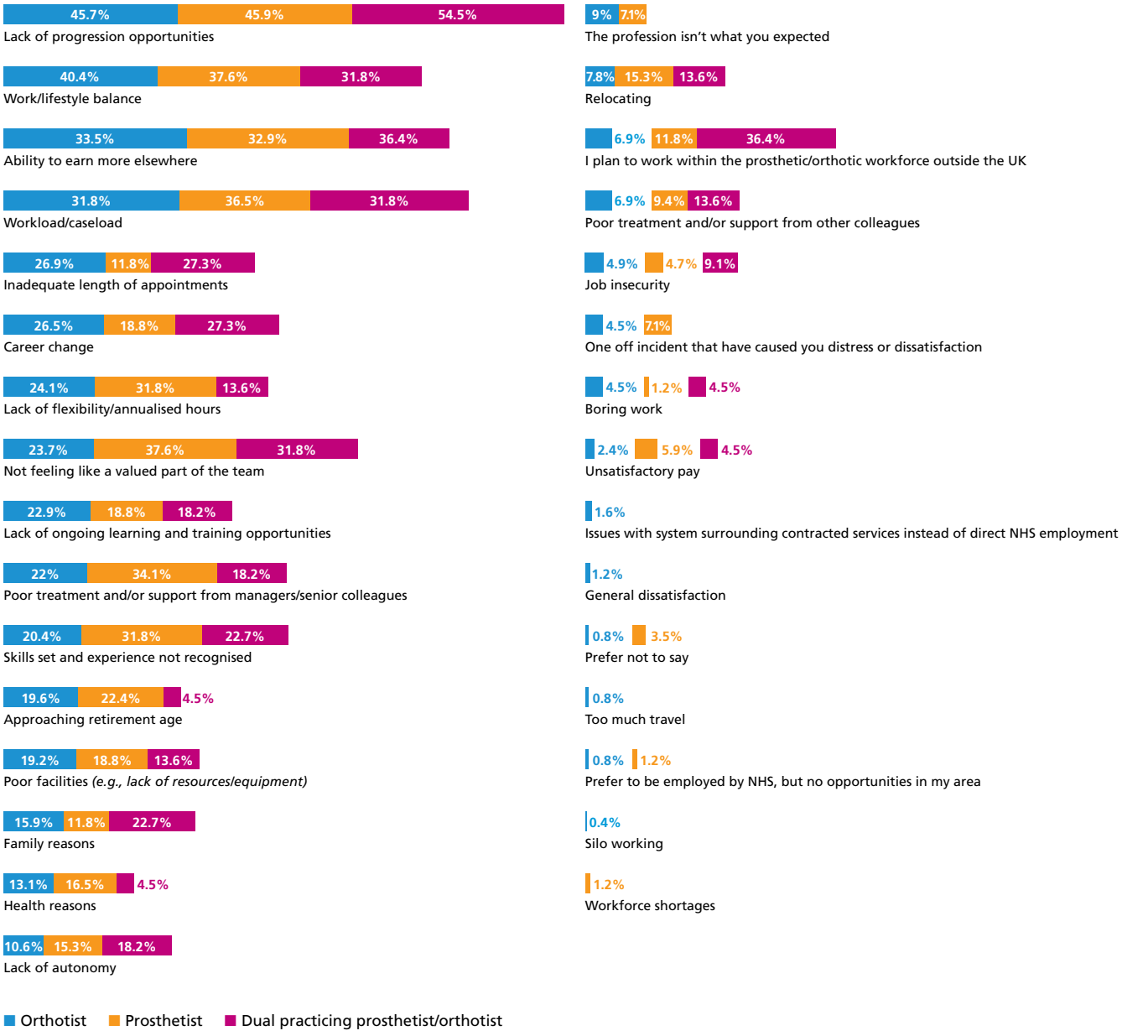


Figure 35: Responses for reasons POs are considering leaving the P&O workforce.

P&O technicians

Most of the technicians who responded (69.7%) selected that they definitely or probably plan to remain in the UK workforce for the next 5 years, and 3% selected that they definitely plan to leave. The reasons they were considering leaving the profession were split into personal and job-specific reasons, with more job-specific reasons reported as reasons for why they were considering leaving the profession.

In order from the most to least common response, these were; ability to earn more elsewhere (10.8%), lack of progression opportunities (9.7%), skill set and experience not recognised (8.6%), poor treatment and/or support from managers/senior colleagues (7.6%), lack of ongoing learning and training opportunities (7%), not feeling like a valued member of the team (7%), workload/caseload (3.8%), poor facilities (3.2%), one off incident that has caused you distress or dissatisfaction (3.2%), poor treatment and/or support from other colleagues (2.7%), job insecurity (2.2%), boring work (1.6%), unsatisfactory pay (1.6%) and "the profession isn't what you expected" (0.5%).

The personal reasons for wanting to leave the profession, in order from most to least common, were approaching retirement age (9.2%), health reasons (4.9%), career change (4.9%), family reasons (3.8%), "I plan to work within the P&O workforce outside the UK" (2.7%), relocating (2.2%), work/lifestyle balance (1.1%), three (1.6%) answered 'prefer not to say'.

P&O support workers

Most support workers planned to stay in the profession for the next five years, with only three (18.8%) answering 'probably not'. The reasons that support workers provided regarding why they might leave the profession were split into personal and job-specific reasons. The personal reasons were retirement age, family reasons, relocating, career change, work/lifestyle balance. The job-specific reasons were poor facilities, ability to earn more elsewhere, lack of ongoing learning and training opportunities, lack of flexibility/annualised hours, not feeling like a valued member of the team, skill set, and experience not recognised, lack of progression opportunities, workload/caseload, job insecurity, boring work. The most common answers were lack of progression opportunities and the ability to earn more elsewhere.

What skills/knowledge are required for the future of the P&O workforce?

The information provided in this section is based on the responses from the survey of the P&O workforce and the freedom of information requests to Higher Education Institutes providing programmes for the P&O workforce.

PO and PO students/apprentices

Ensuring POs have the necessary skills for the future needs of the patients accessing prosthetic and orthotic services is essential. The survey indicated that there are a range of skills POs do not currently have which they believe are required for the future of the profession. A full breakdown of skills POs are lacking and what they believe are required are presented in Figure 36.

Artificial muscles (materials or devices that mimic natural muscle) had the highest number of POs (82.7%, 530) reporting that they don't have this skill, with 37.1% (238) reporting that this skill was important for the future. Eighty percent (513) of POs reported that they are lacking in the knowledge of robotics, with 39% (250) stating that it is an important future skill. Over three-quarters (76.1%,488) of POs reported not have prescribing rights (POs have not been given prescribing rights so it is assumed the remaining POs are utilising supplementary prescribing which involves a partnership between an independent prescriber, a supplementary prescriber, and the patient to implement an agreed clinical management plan for an individual patient), 41.3% (265) felt prescribing rights are important for the future of the profession. Nealy three-quarters (71.3%, 457) of POs lacked the ability to carry out mental health and wellbeing checks, whilst 58% (372) believed this skill is required for the future of the profession.

Skills/knowledge POs are lacking and the future requirement of these skills

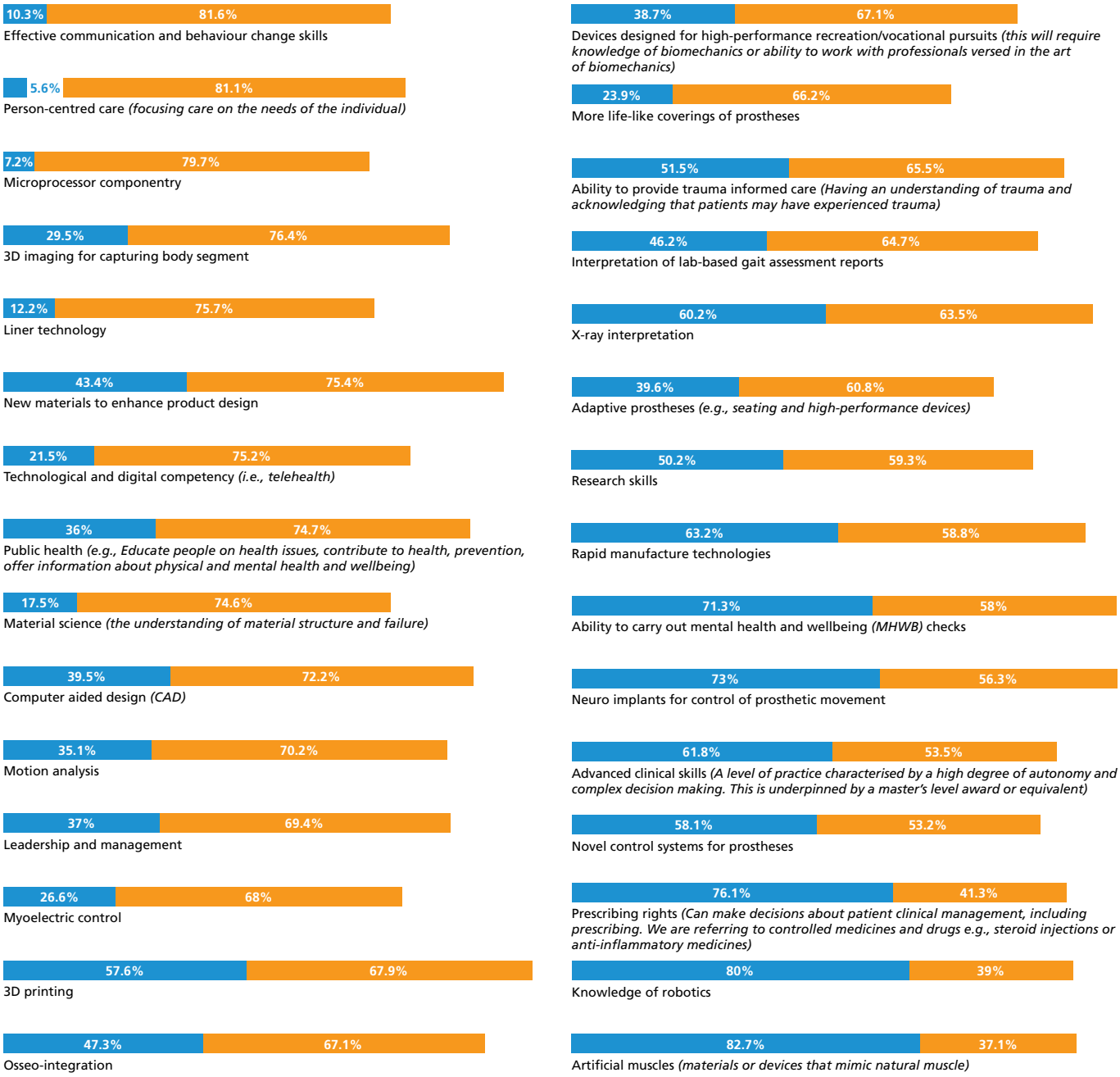


Figure 36: Comparison of current skills POs are lacking and the requirement for these skills in the future.

Seventy-nine POs and 10 students/apprentices provided comments on skills/knowledge, additional to the skills/knowledge listed in the survey, that they considered were needed for the future of the profession. The responses were broad and covered a wide number of categories. Around one third of POs felt they needed to add skills from other professions to enhance their future career. Specifically, the ability to prescribe stretching or strengthening programmes, the ability to administer Botox or steroid injections, serial casting and wound care. A theme of not losing "key traditional skills" to more modern techniques was highlighted by many students, apprentices, and POs. There were split into two key areas, retaining fundamental undergraduate skills and traditional manufacturing skills. Comments from respondents included: *"skill in traditional plaster casting and modification"*, *"understanding of socket fitting principles"*, *"leather work"*, *"orthotic biomechanics and pathology"*, and *"visual gait analysis"*.

The main non-clinical skill thought to be needed for the future of the profession related to budgeting and business management. One tenth of comments were related to improving healthcare economics skills. An example response stated, "*With the funding and demand pressures on NHS services, every member of staff should have knowledge of quality improvement to be able to contribute to delivering the best quality, best value for money service possible*".

Five responses discussed the need for specific skills for treating those with multi- or co-morbidities. The comments related to the requirement for training on how multiple chronic conditions can impact each other and knowledge for alternate componentry, methods, and facilities for working with bariatric patients. Other comments related to ethics and the law, complex pathologies training, sustainable materials, and wound care.

P&O technicians

When respondents were asked about potential training gaps, a quarter of technicians left comments related to skills required for the future of the workforce. These included digital technologies, combination approaches to manufacture, including mixing skills such as 3D printing and electronics and skills related to anatomy and biomechanics. Some respondents felt conventional manufacturers and traditional orthotic and prosthetic assembly will still be important in the future.

When asked which skills they thought were needed for their future role as a technician, all skills were indicated with a higher frequency than when asked about their current skills. The most common answers were rapid manufacture technologies (61.6%), effective communication and behaviour change skills (61.6%) and new materials to enhance product design (60.6%).

Comparing current skills with skills needed for the future highlighted possible skills gaps. 3D printing skills were possessed by 27.2% of the technician workforce, but 57.6% felt this skill was needed for the future of the profession. Similarly, 36.4% had rapid manufacture technology skills, but 61.6% felt this skill was needed for the future. 'Technological and digital competency (i.e., telehealth)', 'Leadership and management' and 'Effective communication and behaviour change' skills are all areas without a possible skills gap, as the results for current skills and frequency of those who feel the skill is helpful for the future were similar.

Regarding prosthetic specific skills 'more life-like coverings of prostheses', 'myoelectric control' and 'adaptive prostheses (e.g., seating and high-performance devices)' were the three categories stated as the most common areas believed to be needed for the future.

P&O support workers

The responses for prosthetic, orthotic and dual support workers have been combined where appropriate. The most common skills support workers thought were required to fulfil their role in the future were person-centred care and effective communication (75%), and public health (50%). Regarding prosthetic specific skills, 60% of respondents considered that microprocessor componentry, and liner technology were required to fulfil their role in the future. The least selected skills were advanced clinical skills and prescribing rights (18.8%).

University curriculums

Adequate training of the future P&O workforce is essential. The data collected via the freedom of information request indicated which skills/knowledge are currently being taught to PO students in the UK (see Table 10).

The current curriculums do not include modules on stretching or strengthening programmes, serial casting, or wound care. It may be considered that these skills are not necessary to teach at undergraduate level. However, there needs to be access to such skills for POs if they are reporting that the skills would enhance their practice. One university out of four reported that their curriculum included training on how to carry out mental health and wellbeing checks. POs reported that they felt this was a required skill for the future of the profession. When considering that prosthetists have a high case load of patients who have experienced a life changing event it appears particularly crucial that prosthetists are trained with the necessary skills to carry out mental health and wellbeing checks. In addition, if AHPs are increasingly being tasked with contributing to public health and reducing the burden on adjacent NHS services, orthotists appear perfectly placed to carry out mental health and wellbeing checks as their services are integral to many clinical pathways. This is particularly important in light of the increased prevalence of mental health impairments in the UK population which has risen by 13% since 2013[31].

Skills such as administering Botox or steroid injections and prescribing in general requires the profession to gain prescribing rights which it currently does not have. POs reported that prescribing rights will be required for the future of the profession. This poses a barrier for POs and indicates underutilisation of a workforce which has access to a plethora of clinical pathways.

Skill/Knowledge	University of Strathclyde	University of Salford	Keele University	University of Derby
Technological and digital competency (i.e., telehealth)	No	Yes	Yes	Did not answer
Leadership and management	Planning to introduce	Yes	Yes	Did not answer
Public Health	Yes	Yes	Yes	Did not answer
Research Skills	Yes	Yes	Yes	Did not answer
Effective communication and behaviour change skills	Yes	Yes	Yes	Did not answer
Ability to carry out mental health and wellbeing (MHWB) checks	Yes	Did not answer	No	Did not answer
Ability to deal with trauma informed care	Did not answer	Yes	Yes	Did not answer
Person centred care	Yes	Yes	Yes	Did not answer
X-ray interpretation	Yes	Did not answer	Yes	Did not answer
Interpretation of lab-based gait assessment reports	Yes	Yes	Yes	Did not answer
Computer aided design (CAD)	Yes	Yes	Yes	Did not answer
3D imaging	Yes	Yes	Yes	Did not answer
Material science	Yes	Yes	Yes	Did not answer
New lightweight materials	Yes	Yes	Yes	Did not answer
Devices designed for high performance	Yes	Yes	Yes	Did not answer
Adaptive prostheses	Yes	Yes	Yes	Did not answer
Novel prosthetic designs for recreation/ vocational pursuits	Yes	Yes	Yes	Did not answer
Motion analysis	Yes	Yes	Yes	Did not answer
Use of surrogates to map typical motions/gaits – important for microprocessor-controlled devices	No	Yes	No	Did not answer
Knowledge of robotics	Planning to introduce	Yes	No	Did not answer
Novel control systems for prostheses	Yes	Yes	Yes	Did not answer
Myoelectric control	Yes	Yes	Yes	Did not answer
Neuro implants for control of prosthetic movement	Yes	Yes	No	Did not answer
More life-like coverings of prostheses	Yes	Yes	No	Did not answer
Liner technology	Yes	Yes	Yes	Did not answer
Rapid manufacture technologies	Yes	Yes	No	Did not answer
3D printing	Yes	Yes	Planning to introduce	Did not answer
Artificial muscles	No	Yes	No	Did not answer
Osseo-integration	Yes	Yes	Did not answer	Did not answer
Microprocessor componentry	Yes	Yes	Yes	Did not answer

Table 10: Skills/knowledge included in the curriculum of the university PO programmes.

31. Kirk-Wade E. UK Disability Statistics: Prevalence and Life Experiences.; 2022. https://commonslibrary.parliament.uk/research-briefings/cbp-9602/

What populations will the P&O workforce be required to treat in the future?

Prostheses and orthoses feature in the International Classification of Functioning, Disability and Health (ICF) model[32] under 'environmental factors'. The conditions which require the use of a prosthesis or orthosis can be classified under categories according to the International Classification of Diseases (ICD)[33]. The ICD categories of morbidity that relate to prosthetics or orthotics treatment were analysed by a PO experienced in clinical care and in education. A list of health conditions known to be treated by prostheses or orthoses was drawn up by systematically going through the online ICD citations and screening them for familiarity. The categories were then shared with and finalised in consultation with the Education Committee members of BAPO, who are also POs.

Infections
(Meningitis, Gas gangrene, Poliomyelitis, Sepsis)

Neoplasms
(Neoplasms of brain or central nervous system, Other neoplasms)

Endocrine, nutritional or metabolic diseases
(Diabetes Mellitus, Overweight, obesity)

Diseases of the nervous system
(Multiple Sclerosis, Stroke, Myelitis, Motor neuron diseases, Nerve root or plexus disorders, Neuropathy, Guillain Barre syndrome, Myasthenia gravis, Muscular dystrophy, Cerebral palsy, Parkinson's disease, Charcot Marie Tooth (types 1 demyelinating and 2 axonal), Other hereditary motor and sensory neuropathy, Spinal muscular atrophy, Duchenne's muscular dystrophy)

Diseases of the circulatory system
(Diabetic foot ulcer, Peripheral vascular disease (PVD), Lymphoedema, Gangrene)

Diseases of the musculoskeletal system or connective tissue
(Osteoarthritis includes Stills disease, gout, Rheumatoid arthritis, Spondylosis, Spinal deformities, Degenerative conditions of the spine, Disorders of muscles, Disorders of synovium or tendon: includes Achilles tendonitis, Achilles Tendinopathy, Sever's disease, Tibialis posterior tendon dysfunction (adult acquired flat foot), Osteonecrosis, Osteoporosis, Osteomyopathies or chondropathies (for example Osgood Schlatter disease, Perthes disease, patellofemoral pain syndrome, Freiberg's infraction), Osteomyelitis, Paget disease, Acquired deformities, Ehlers-Danlos syndrome)

Developmental anomalies
(Developmental delay, Structural developmental anomalies affecting one body system including pectus excavatum, Multiple developmental anomalies or syndromes, Scoliosis, Spina bifida, Constriction rings (amniotic band syndrome), Proximal Focal Femoral Deficiency, Arthrogryposis, Scheuermann disease, Transverse deficiencies of the limbs, Longitudinal deficiencies of the limbs)

Injury
(Fractures, Dislocations, Strains or sprains of joints or ligaments, Nerve injuries, Injury of muscle, fascia, tendon or bursa, Amputation, Traumatic blast injuries, Burns, Complex regional pain syndrome, Post operative knee replacement, Post operative hip replacement)

32. World Health Organization. International Classification of Functioning, Disability and Health (ICF).; 2023. https://www.who.int/classifications/international-classification-of-functioning-disability-and-health
33. World Health Organization. International Classification of Diseases (ICD).; 2023. https://www.who.int/classifications/classification-of-diseases

Populations currently treated by the P&O workforce

The P&O workforce survey data indicated that POs currently treat a wide range of clinical pathologies. Providing evidence that their skills are integral to many clinical pathways. Over 50% of orthotists reported regularly treating 28 different clinical populations with the highest number of orthotists reporting they regularly treat musculoskeletal conditions in the adult population (92.7%). Whilst only 0.5% of orthotists reported regularly treating craniofacial conditions in the paediatric population. Over 50% of prosthetists reported regularly treating 11 different clinical populations with the most prevalent reported to be trauma in the adult population (89%). Whilst only 3.7% reported regularly treating spinal pathologies in the elderly populations. A full breakdown of the clinical populations POs regularly treat is presented in Figure 37.

Orthotists

Musculoskeletal Adult (≤65 years)	92.7%
Neurological Adult (≤65 years)	88.9%
Orthopaedic Adult (≤65 years)	87%
Musculoskeletal Elderly (>65 years)	85%
Musculoskeletal Paediatrics	83.4%
Orthopaedic Elderly (>65 years)	80.8%
Diabetes Adult (≤65 years)	80.3%
Neurological Elderly (>65 years)	80.1%
Neurological Paediatrics	78.8%
Rheumatology Adult (≤65 years)	78.2%
Learning disabilities Adult (≤65 years)	78%
Learning disabilities Paediatrics	76.2%
Diabetes Elderly (>65 years)	76.2%
Congenital Paediatrics	74.4%
Post-surgery Adult (<65 years)	74.1%
Rheumatology Elderly (>65 years)	73.8%
Orthopaedic Paediatrics	72.3%
Trauma Adult (≤65 year)	72.3%
Congenital Adult (≤65 years)	69.4%
Spinal Adult (≤65 years)	67.4%
Post-surgery Elderly (>65 years)	65.8%
Trauma Elderly (>65 years)	64.2%
Vascular Adult (<65 year)	62.2%
Vascular Elderly (>65 years)	61.1%
Spinal Elderly (>65 years)	60.9%
Congenital Elderly (>65 years)	60.6%
Learning disabilities Elderly (>65 years)	59.8%
Post-surgery Paediatrics	57.8%
Trauma Paediatrics	42.2%
Spinal Paediatrics	38.9%
Mental health Adult (<65 years)	38.3%
Oncology Adult (≤65 years)	36.5%
Rheumatology Paediatrics	34.7%
Oncology Elderly (>65 years)	34.2%
Mental health Elderly (>65 years)	33.2%
Mental health Paediatrics	24.4%
Oncology Paediatrics	20.7%
Diabetes Paediatrics	17.6%
Vascular Paediatrics	15.3%
Craniofacial Paediatrics	0.5%

Prosthetists

Trauma Adult (≤65 year)	89%
Vascular Adult (≤65 year)	78.7%
Diabetes Elderly (>65 years)	78.7%
Vascular Elderly (>65 years)	77.4%
Diabetes Adult (≤65 years)	75.6%
Congenital Adult (≤65 years)	75.6%
Trauma Elderly (>65 years)	75%
Congenital Paediatrics	67.1%
Congenital Elderly (>65 years)	61%
Orthopaedic Adult (≤65 years)	54.9%
Oncology Adult (≤65 years)	50.6%
Post-surgery Adult (<65 years)	50%
Orthopaedic Elderly (>65 years)	48.2%
Post-surgery Elderly (>65 years)	47.6%
Trauma Paediatrics	47.6%
Musculoskeletal Adult (≤65 years)	43.3%
Oncology Elderly (>65 years)	40.2%
Musculoskeletal Elderly (>65 years)	36%
Oncology Paediatrics	35.4%
Learning disabilities Adult (≤65 years)	32.9%
Mental health Adult (<65 years)	32.9%
Orthopaedic Paediatrics	32.9%
Musculoskeletal Paediatrics	31.1%
Post-surgery Paediatrics	29.3%
Neurological Adult (≤65 years)	28%
Mental health Elderly (>65 years)	25.6%
Learning disabilities Paediatrics	25%
Rheumatology Adult (≤65 years)	23.8%
Learning disabilities Elderly (>65 years)	23.2%
Neurological Elderly (>65 years)	20.7%
Rheumatology Elderly (>65 years)	20.7%
Vascular Paediatrics	15.2%
Diabetes Paediatrics	14.6%
Mental health Paediatrics	14%
Neurological Paediatrics	11%
Spinal Adult (≤65 years)	8.5%
Rheumatology Paediatrics	4.9%
Spinal Paediatrics	4.9%
Spinal Elderly (>65 years)	3.7%

Dual practicing orthotist/prosthetist

Diabetes Elderly (>65 years)	84.8%	Congenital Paediatrics	69.7%	Learning disabilities Paediatrics	48.5%
Post-surgery Adult (<65 years)	81.8%	Musculoskeletal Paediatrics	66.7%	Learning disabilities Elderly (>65 years)	48.5%
Diabetes Adult (≤65 years)	81.8%	Rheumatology Adult (≤65 years)	66.7%	Mental health Elderly (>65 years)	45.5%
Trauma Adult (≤65 year)	81.8%	Rheumatology Elderly (>65 years)	63.6%	Oncology Adult (≤65 years)	42.4%
Congenital Adult (≤65 years)	81.8%	Neurological Elderly (>65 years)	57.6%	Spinal Elderly (>65 years)	39.4%
Musculoskeletal Adult (≤65 years)	78.8%	Orthopaedic Paediatrics	57.6%	Trauma Paediatrics	39.4%
Neurological Adult (≤65 years)	78.8%	Trauma Elderly (>65 years)	57.6%	Spinal Paediatrics	33.3%
Vascular Adult (<65 year)	78.8%	Congenital Elderly (>65 years)	57.6%	Mental health Paediatrics	30.3%
Orthopaedic Adult (≤65 years)	78.8%	Neurological Paediatrics	54.5%	Oncology Elderly (>65 years)	27.3%
Vascular Elderly (>65 years)	75.8%	Learning disabilities Adult (≤65 years)	54.5%	Diabetes Paediatrics	27.3%
Orthopaedic Elderly (>65 years)	75.8%	Post-surgery Paediatrics	51.5%	Oncology Paediatrics	24.2%
Musculoskeletal Elderly (>65 years)	72.7%	Mental health Adult (<65 years)	51.5%	Rheumatology Paediatrics	21.2%
Post-surgery Elderly (>65 years)	72.7%	Spinal Adult (≤65 years)	51.5%	Vascular Paediatrics	21.2%

■ Orthotist ■ Prosthetist ■ Dual practicing prosthetist/orthotist

Figure 37: Clinical populations treated by orthotists, prosthetists, and dual practicing POs survey respondents.

Future demand for prosthetic and orthotic care in the UK

People who require P&O intervention have health conditions that lead to impairments of body functions and structures. This negatively affects their mobility and participation in society. The demand for prosthetic and orthotic care will increase if there is an increase in the prevalence of people suffering from the conditions outlined in the ICD categories.

Age

Rapid ageing of populations in developed countries is set to continue. The current projections show that we are an aging population, and we are expected to live for longer, with an increased number of older people in years to come, the number of people aged 85 years and over was estimated to be 1.7 million in 2020 (2.5% of the UK population) and this is projected to almost double to 3.1 million by 2045[34]. It is thought that the number of 'healthy years' gained by an aging population will not be equal to the increase in life expectancy. It is estimated that a quarter of life expectancy at age 65 years will involve disability by the year 2025.

As well as a predicted aging population, there is also expected to be an increase in disease prevalence. Over the next 20 years, multi-morbidity is estimated to increase. Research shows the number of older people with four or more chronic diseases will double within the next 20 years largely because of an increase in obesity and physical inactivity[35].

Disabilities

There is currently no national register of people with disabilities in the UK and no standardised definition. This can make it challenging to measure disability prevalence. An estimated 14.6 million people in the UK had a disability in 2020/21. This represents 22% of the total population. The prevalence of disability rises with age: in 2020/21 9% of children were disabled, compared to 21% of working age adults and 42% of adults over State Pension age. Mobility is the most frequently reported impairment type (46%)[31]. Since 2002/03, the number of people reporting a disability has increased by 3.8 million (+35%)[31].

Long Covid

According to the latest data, an estimated 1.9 million people in the UK were experiencing long Covid as of 5 March 2023[36]. Long Covid, which is defined as the continuation or development of new symptoms three months after the initial SARS-CoV-2 infection, with these symptoms lasting for at least two months with no other explanation[37]. The disease can have a significant impact on mobility and physical function[38], which may require orthotic intervention. With a growing number of people reporting long-term ongoing symptoms of Covid-19, disability prevalence in the UK could be set to rise further[31].

Diabetes

More than 4.9 million people in the UK have diabetes, if nothing changes, Diabetes UK predict that 5.5 million people will have diabetes in the UK by 2030[39]. Diabetes is the most common cause of lower limb amputations in the UK. Someone living with diabetes is 15 times more likely to experience an amputation than someone without the condition[40]. Analysis from Diabetes UK has shown that there were 26,378 lower limb amputations related to diabetes in England from 2014 to 2017, an increase of 19.4% from 2010-2013[41].

31. Kirk-Wade E. UK Disability Statistics: Prevalence and Life Experiences.; 2022. https://commonslibrary.parliament.uk/research-briefings/cbp-9602/
34. Office for National Statistics. National Population Projections: 2020-Based Interim.; 2022. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim
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41. Diabetes UK. Lower Limb Amputations.; 2018. https://www.diabetes.org.uk/about_us/news/lower-limb-amputations

During a three-year period of 2017 – 2020 there were 7,957 major amputations with a rate of 8.1 major amputations per 10,000 population with diabetes per year. There were 21,738 minor amputations with a rate of 22.1 minor amputations per 10,000 population with diabetes per year[42]. Thus, major lower-limb amputations for patients with diabetes made up 51% of all major lower-limb amputations that occurred during this period. Each year in England approximately 60,000 people with diabetes present with diabetic foot ulceration. Orthotists play an integral role in the treatment of diabetic foot ulcerations.

Musculoskeletal conditions

Musculoskeletal (MSK) conditions are the leading cause of pain and disability in the UK and are one of the biggest causes of sickness absence and productivity loss. Each year, an estimated 20% of the UK population seek medical advice about an MSK condition[43]. There are multiple risk factors that can heighten people's susceptibility to MSK problems, these include physical inactivity, being overweight or obese[43]. In the UK, an estimated three quarters of those aged 45-74 years are overweight or obese[44]. Between 1993 and 2019 the proportion of adults in England who were obese rose from 14.9% to 28.0%, while the proportion who were either overweight or obese rose from 52.9% to 64.3%[44]. It is estimated that 21 million UK adults (36%) will be obese by 2040[45].

Amputations

The reasons for amputation vary between the upper and lower limbs. The upper limb accounts for only 3-15% of all amputations and is uncommon[46]. The major reasons for amputation in the upper limb are trauma (43%), congenital absence (18%), and cancer (14%)[47]. There is no national data for congenital limb absence in the UK.

There is debate over the prevalence of major lower limb amputation in the UK with regional variations unexplained. Between 2017 and 2020 there were a total of 15,663 major lower-limb amputations carried out on all patients aged 18 and over in England[42]. Peripheral arterial disease (PAD) is a leading cause of all lower limb amputation. In the UK, PAD occurs in 20% of people aged over 60 years. The prevalence of amputation in PAD patients is thought to be 3%–4%[48].

This data indicates a projected increase in the number of people who will require prosthetic and/or orthotic care in the UK. The results from this study estimate there is currently a shortage of 142 to 477 POs and 1,133 to 1,803 P&O technicians and P&O support workers, and steps will be required to mitigate this workforce shortage.

When establishing the UKs requirement for POs, the current amount of clinical work undertaken by POs should be considered; the workforce survey identified that 4.2% of POs do not undertake clinical work within their roles. Also, for those whose roles include clinical work, the amount of clinical work within their role(s) varies (as presented in Figure 17).

42. Office for Health Improvement & Disparities. National Diabetes Foot Care Report.; 2022. https://fingertips.phe.org.uk/static-reports/diabetes-footcare/national-diabetic-footcare-report.html
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Recommendations

- While there was a high response rate for the workforce survey for POs (74%), there were low response rates for P&O technicians (12%) and support workers (26%), and therefore their data cannot be considered representative of these P&O staffing groups. Further initiatives are needed that engage with these staffing groups to gather a complete understanding of their demographics, skills, and future work plans, to support workforce planning.

- There are gaps in the current skills of POs and the skills required for the future of the profession, initiatives are required to address this issue.

- A significant number of the P&O workforce have reported they are considering leaving the workforce, the main reasons were lack of progression opportunities, work/life balance issues, the ability to earn more elsewhere, and work/case load issues as the most frequently reported reasons. This issue needs to be further explored, with the aim of developing initiatives which will seek to address the reasons that people are considering leaving the workforce.

- There is a shortage of the P&O workforce required to meet the needs of the clinical population they serve, and the demand is likely to increase in the future. Initiatives are required to increase the P&O workforce.

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