

Welsh Government response to Shortage Occupation List: Call for Evidence

Preamble

The Welsh Government is strongly opposed to the UK Government's proposals on future migration, and during the current COVID-19 pandemic and the resulting economic crisis we believe the UK Government should pause and take stock of its current plans for migration.

This crisis has thrown into sharp relief the UK's reliance on key workers, many of whom came originally from the European Economic Area (EEA), and without their support essential front-line services we have been depending on now more than ever would not be sustainable. The current experience has shown that we must value all skills and that the proposed skill selective approach to future immigration may indeed be damaging in response to the skill requirements of a post-COVID-19 world.

In addition to short-term job losses it seems likely that as the UK economy emerges from the downturn there will be long-term structural changes to the economy. This introduces an unprecedented level of uncertainty into any attempt to predict the UK's future skills needs accurately. This is why we believe the current timeline of September 2020 for the Migration Advisory Committee (MAC) review of the Shortage Occupational List (SOL) should be moved to a time when it will be realistically possible to engage meaningfully with employers about their future skills needs and to produce a robust future-proofed list.

However, the UK Government has made clear that it does not plan to change either the timing or the content of its future system as a result of the disruption caused by COVID-19. We feel bound in these circumstances to engage with the development of the SOL so that it reflects, as best as we are able at this time, the current skills requirements of the Welsh economy. Since we do not endorse the UK Government's determination to include only work at NQF level 3 or above as 'skilled', our consideration also includes skills gaps below this threshold.

1. Introduction

This paper is submitted as evidence to underpin the Migration Advisory Committee's (MAC) updated Shortage Occupation List (SOL), due to be submitted in September 2020. The previous SOL focused on occupations at Regulated Qualification Framework (RQF) level 6+, but this updated SOL will focus on RQF level 3+, with the Call for Evidence having a particular emphasis on RQF levels 3-5. More significantly, the previous SOL operated alongside freedom of movement of labour between the EEA and the UK, whereas in future the SOL will apply also to citizens of these countries.

Until now, Wales has worked to the UK's SOL, with only Scotland having a separate list (although there was the opportunity for all Devolved Administrations to have their own lists). This paper covers skilled occupations as a means to identify any occupations at RQF 3-5 and at RQF 6+ that Wales may have specific needs in and also briefly covers occupations below RQF level 3 to capture occupations where there is a strong case for inclusion.

The paper and accompanying Excel spreadsheet present an analysis of Wales data based on the methodology used in the previous SOL (though changes have been made to reflect the smaller sample sizes in Wales). In addition, the paper considers views expressed by the Welsh Government's External Stakeholder Group and in the evidence submitted afterwards. It is intended to provide the MAC with evidence and recommendations to support the Welsh SOL, in conjunction with the further evidence the MAC will receive from Welsh stakeholders as part of their Call for Evidence.

The rest of the paper is as follows:

- In section two a brief methodology is provided, with a more detailed methodology available at Annex C.
- In section three the ranking of 3 digit occupations from the data analysis is given, split by their skill level.
- Section four provides an overview of evidence received from the External Stakeholders.
- Section five concludes the paper and presents the occupations recommended for inclusion on the Welsh SOL based on the data analysis and evidence from the External Stakeholder Group.

2. Brief methodology

The data analysis referenced in this paper and the accompanying Excel file is based on the methodology employed by the MAC in its Full Review of the Shortage Occupation List, published in May 2019. Under this methodology, to be placed on the SOL, an occupation must meet the three criteria of skilled, shortage and sensible:

- Is the occupation **skilled** to the required level?
- Is the occupation in **shortage**?
- Is it **sensible** to try to fill those shortages through migration?

Occupations which are suitably skilled are then ranked based on the indicators under the shortage indicator. In line with the UK analysis, a threshold of having data for five of the shortage indicators is used. Whilst efforts have been made to replicate the UK approach, the methodology is designed for analysis at the UK level and sample size restrictions in the Welsh data prevent a full analysis at 4 digit Standard Occupational Code (SOC) level, which is the level used in the SOL. A number of the indicators have also been changed to reflect this sample size issue and the data available. Due to these sample size issues, only 36 per cent of 4 digit occupations have the required five shortage indicators. This rises to 82 per cent of 3 digit occupations and 100 per cent of 2 digit occupations. Data and rankings for all three levels are included in the accompanying Excel file, but the focus of the ranking in this paper is on 3 digit occupations as a means of maintaining a balance between presenting as complete a picture as possible and making the occupations granular enough to be useful.¹ It is intended this approach will provide a useful steer for the MAC which will be complemented by the further Welsh evidence received via the Call for Evidence.

Vacancy data was not available for this analysis (for the equivalent of the MAC's E1 and E2 indicators) and the ranking may therefore disadvantage occupations with high vacancy levels (though indicators on the percentage change in employment and percentage change in new hires are included). As the MAC considers the Welsh SOL, consideration of any additional data it has on vacancies would be very welcome.

It should be noted that there is a lag in the data used in the paper (with some indicators calculated over the period 2015-2019) and it does not reflect changes to the labour market due to the COVID-19 pandemic.

The Welsh Government is aware that the MAC will be updating its analysis methodology for this iteration of the SOL and requests that the MAC runs this analysis for Wales and considers what the new analysis shows for Wales, alongside the analysis supplied in this paper, when determining occupations for the Welsh SOL.

In addition to the data analysis, this paper is informed by evidence received from the Welsh Government's External Stakeholder Group, which met on June 11th 2020 to discuss Wales' requirements. The MAC's approach is to consider data analysis alongside stakeholder evidence to determine whether an occupation should be placed on the SOL. The same approach has therefore been followed in this paper.

A more detailed methodology is available in Annex C, explaining the indicators used in the data analysis.

3. Data analysis - ranking of occupations

Using the methodology outlined elsewhere in this paper, 3 digit occupations have been ranked based on their shortage indicators. This shows the ranking based only on shortage indicators (i.e. the extent to which the occupation is in shortage) and is just one element used to determine whether an occupation is suitable for inclusion on the

¹ Note there are 369 occupations at SOC 4 digit level, 90 at SOC 3 digit level and 25 of SOC 2 digit level.

SOL. It does not consider whether migration is the most sensible way to fill any identified shortages. Table 1 shows the rank of occupations that met 2 out of a possible 3 skills thresholds and would be classed as suitably skilled. The overall ranking is the mean of the normalised ranks of each of the indicators. For each 3 digit occupation, the table covers:

- Shortage indicators – ranking based on relative position of each occupation across up to eight possible shortage indicators (*Rank*); and the number of shortage indicators available for that occupation (*Shortage indicators available*)
- Skill indicators – whether the occupation is classed as skilled based on whether it meets 2 out of a possible 3 skill indicator thresholds (*Skilled*); and the number of skill indicator thresholds met and the number of skill indicators available for that occupation (*Skilled indicator thresholds met*)
- Contextual information – skill level of the occupation, based on a scale of 1 to 4, with 4 being highest skilled (*Skill level*); the proportion of people employed in the occupation who are qualified to RQF level 3 or above (*% RQF 3+*); the proportion of people employed in the occupation who are qualified to PhD level (*% PhDs*); median annual earnings for full-time workers in the occupation (*Median full-time earnings*); the proportion of people employed in the occupation who are from non-EU countries (*% non-EU workers*); the proportion of people employed in the occupation who are from EU countries, excluding the UK (*% EU workers*); the proportion of those non-UK EU workers who arrived in the UK in the previous two years (*% EU workers arrived last two years*); and the proportion of people employed in that occupation who were hired in the last year (*% new hires*).

The complete set of the shortage indicators, skill indicators and additional contextual information can be found in the accompanying Excel file.

Table 1 shows that the skilled occupations that scored highest on the shortage indicators were Conservation and Environment Professionals; Legal Professionals; Health and Social Services Managers and Directors; Media Professionals; and Public Services and Other Associate Professionals. However, these may not be the most appropriate occupations for inclusion on the SOL. As noted previously this is just one element used to determine whether an occupation should be on the SOL and stakeholder evidence must also be considered, including determining whether immigration is the most sensible way to fill those shortages. This is covered in section four. Due to the omission of vacancy indicators, those occupations with high vacancy levels may be disadvantaged in this ranking (although indicators on the percentage change in employment and new hires are included).

The occupations in Table 1 all met 2 out of a possible 3 skills thresholds. Whilst skills are not the same as qualifications, higher skilled jobs do tend to require people with higher qualification levels, with only a handful of the occupations in Table 1 having fewer than half of workers holding qualifications at RQF level 3 or above. The MAC have stated that RQF levels 3-5 is their focus for this revision of the SOL. However, for the purposes of establishing a Welsh SOL, the relative positions and contextual information of occupations at RQF levels 6+ will help determine if there are any occupations at this level in Wales that should be included on the Welsh SOL.

Table 2 gives the ranking (by shortage indicators) of occupations that did not meet 2 out of a possible 3 skill indicators. In contrast to the occupations in Table 1, only a handful of these occupations have more than half of their workers holding qualifications at RQF level 3+. This data has been included as there may be some occupations with requirements below RQF level 3 that present a strong case for inclusion on a Welsh SOL.

A combined ranking of occupations, regardless of whether or not they met 2 out of the possible 3 skill indicators is given in Annex A. Additionally, data on occupations which did not have sufficient shortage indicators available to be included in the ranking given in Annex B.

Table 1: 3 digit occupation ranking - meet 2 out of 3 skill thresholds

3 digit occupation		Shortage		Skills		Contextual information								
SOC 2010 Code	SOC 2010 Title	Rank	Shortage indicators available	Skilled	Skilled indicator thresholds met	Skill level	% RQF 3+	% PhDs	Median full-time earnings	% Non-EU workers	% EU workers	% EU workers arrived last 2 years	% New hires	% share emp.
214	Conservation and Environment Professionals	1	7	Y	3 / 3	4	92%	7%	£33,552	1%	8%	*	21%	0.23%
241	Legal Professionals	2	8	Y	3 / 3	4	96%	0%	£43,432	0%	2%	*	13%	0.52%
118	Health and Social Services Managers and Directors	3	8	Y	3 / 3	4	90%	3%	£42,318	0%	1%	*	7%	0.37%
247	Media Professionals	4	5	Y	3 / 3	4	87%	1%	*	2%	3%	*	8%	0.27%
356	Public Services and Other Associate Professionals	5	8	Y	3 / 3	3	79%	1%	£30,158	1%	2%	*	11%	1.79%
353	Business, Finance and Related Associate Professionals	6	8	Y	3 / 3	3	75%	1%	£28,571	1%	2%	*	16%	1.82%
212	Engineering Professionals	7	8	Y	3 / 3	4	82%	3%	£38,797	1%	3%	*	9%	1.37%
213	Information Technology and Telecommunications Professionals	8	8	Y	3 / 3	4	86%	2%	£37,574	2%	2%	*	18%	1.82%
116	Managers and Directors in Transport and Logistics	9	8	Y	2 / 3	4	53%	0%	£28,900	0%	3%	*	12%	0.54%
125	Managers and Proprietors in Other Services	10	8	Y	3 / 3	4	62%	1%	£30,670	2%	1%	*	8%	1.72%
222	Therapy Professionals	11	8	Y	3 / 3	4	98%	0%	£30,764	2%	2%	*	14%	0.48%
524	Electrical and Electronic Trades	12	8	Y	3 / 3	3	66%	0%	£31,488	1%	3%	*	12%	1.48%
246	Quality and Regulatory Professionals	13	8	Y	3 / 3	4	88%	2%	£34,298	4%	5%	*	10%	0.40%
533	Construction and Building Trades Supervisors	14	5	Y	2 / 3	3	43%	0%	*	0%	0%	*	10%	0.20%
722	Customer Service Managers and Supervisors	15	8	Y	2 / 3	2	66%	0%	£25,973	1%	1%	*	11%	0.47%
354	Sales, Marketing and Related Associate Professionals	16	8	Y	3 / 3	3	71%	1%	£32,321	1%	2%	*	17%	2.21%
522	Metal Machining, Fitting and Instrument Making Trades	17	8	Y	3 / 3	3	57%	1%	£32,277	0%	3%	*	14%	1.18%

111	Chief Executives and Senior Officials	18	7	Y	3 / 3	4	82%	7%	£57,983	2%	0%	*	7%	0.22%
211	Natural and Social Science Professionals	19	8	Y	3 / 3	4	96%	22%	£33,687	4%	5%	*	10%	0.57%
242	Business, Research and Administrative Professionals	20	8	Y	3 / 3	4	87%	4%	£36,631	1%	1%	*	15%	1.56%
244	Welfare Professionals	21	8	Y	3 / 3	4	93%	1%	£33,317	2%	1%	*	7%	0.70%
531	Construction and Building Trades	22	8	Y	2 / 3	3	47%	0%	£23,235	0%	2%	10%	9%	2.79%
323	Welfare and Housing Associate Professionals	23	8	Y	3 / 3	3	84%	1%	£25,117	1%	0%	*	20%	1.26%
521	Metal Forming, Welding and Related Trades	24	7	Y	2 / 3	3	48%	0%	£25,131	1%	3%	*	21%	0.37%
113	Functional Managers and Directors	25	8	Y	3 / 3	4	80%	1%	£43,543	1%	1%	*	8%	2.30%
313	Information Technology Technicians	26	8	Y	3 / 3	3	79%	0%	£28,434	1%	2%	*	21%	0.53%
112	Production Managers and Directors	27	8	Y	3 / 3	4	71%	1%	£43,492	1%	1%	*	10%	1.54%
223	Nursing and Midwifery Professionals	28	8	Y	3 / 3	4	95%	0%	£34,072	2%	3%	19%	7%	2.64%
413	Administrative Occupations: Records	29	8	Y	2 / 3	3	55%	0%	£21,420	0%	4%	20%	20%	1.28%
221	Health Professionals	30	8	Y	3 / 3	4	97%	13%	£44,212	6%	6%	23%	9%	1.89%
243	Architects, Town Planners and Surveyors	31	8	Y	3 / 3	4	89%	0%	£31,437	1%	3%	*	19%	0.70%
231	Teaching and Educational Professionals	32	8	Y	3 / 3	4	97%	5%	£39,084	2%	3%	11%	10%	4.93%
411	Administrative Occupations: Government and Related Organisations	33	8	Y	3 / 3	3	61%	1%	£24,854	1%	0%	*	9%	1.71%
352	Legal Associate Professionals	34	8	Y	3 / 3	3	85%	0%	£23,375	1%	5%	*	13%	0.27%
311	Science, Engineering and Production Technicians	35	8	Y	3 / 3	3	69%	0%	£27,468	1%	4%	0%	13%	1.10%
331	Protective Service Occupations	36	8	Y	3 / 3	3	66%	0%	£38,834	1%	1%	*	6%	1.11%
416	Administrative Occupations: Office Managers and Supervisors	37	8	Y	3 / 3	3	67%	1%	£31,593	1%	1%	*	5%	0.69%

721	Customer Service Occupations	38	8	Y	2 / 3	2	55%	0%	£21,099	2%	2%	*	20%	1.46%
124	Managers and Proprietors in Health and Care Services	39	8	Y	3 / 3	4	86%	1%	£31,728	1%	1%	*	6%	0.30%
412	Administrative Occupations: Finance	40	7	Y	3 / 3	3	61%	1%	£22,561	1%	2%	0%	13%	2.10%
122	Managers and Proprietors in Hospitality and Leisure Services	41	8	Y	2 / 3	4	60%	0%	£20,694	3%	5%	1%	11%	1.10%
321	Health Associate Professionals	42	8	Y	3 / 3	3	77%	1%	£22,721	1%	2%	*	9%	0.59%
119	Managers and Directors in Retail and Wholesale	43	8	Y	3 / 3	4	55%	0%	£23,815	1%	2%	*	8%	1.01%
523	Vehicle Trades	44	8	Y	3 / 3	3	56%	0%	£23,778	0%	3%	*	10%	1.05%
415	Other Administrative Occupations	45	8	Y	3 / 3	3	58%	0%	£20,855	1%	2%	0%	16%	2.42%
525	Skilled Metal, Electrical and Electronic Trades Supervisors	46	5	Y	2 / 2	3	74%	0%	£34,744	0%	2%	*	3%	0.14%

Note: '**' denotes that data is not available

Table 2: 3 digit occupation ranking – fail to meet 2 out of 3 skill thresholds

3 digit occupation		Shortage		Skills		Contextual information								
SOC 2010 Code	SOC 2010 Title	Rank	Shortage indicators available	Skilled	Skilled indicator thresholds met	ONS skill level	% RQF 3+	% PhDs	Median full-time earnings	% Non-EU workers	% EU workers	% EU workers arrived last 2 years	% New hires	% share emp.
622	Hairdressers and Related Services	1	6	N	1 / 3	2	55%	0%	£17,463	2%	2%	*	22%	0.78%
924	Elementary Security Occupations	2	5	N	0 / 3	1	35%	1%	£21,962	2%	3%	*	20%	0.81%
812	Plant and Machine Operatives	3	8	N	1 / 3	2	32%	0%	£24,244	1%	11%	22%	20%	0.69%
713	Sales Supervisors	4	8	N	0 / 3	2	44%	1%	£20,765	2%	3%	*	10%	0.71%
822	Mobile Machine Drivers and Operatives	5	7	N	1 / 3	2	21%	0%	£28,074	0%	6%	0%	18%	0.63%
911	Elementary Agricultural Occupations	6	7	N	0 / 3	1	41%	1%	£21,520	0%	1%	*	11%	0.52%

543	Food Preparation and Hospitality Trades	7	8	N	1 / 3	3	40%	0%	£20,358	4%	6%	22%	22%	1.54%
912	Elementary Construction Occupations	8	7	N	0 / 3	1	25%	0%	£22,785	1%	1%	*	37%	0.62%
712	Sales Related Occupations	9	8	N	1 / 3	2	47%	0%	£17,328	4%	3%	*	13%	0.54%
821	Road Transport Drivers	10	8	N	0 / 3	2	25%	0%	£22,830	1%	4%	19%	18%	2.83%
814	Construction Operatives	11	7	N	1 / 3	2	24%	0%	£27,951	0%	1%	*	23%	0.58%
711	Sales Assistants and Retail Cashiers	12	7	N	0 / 3	2	39%	0%	£17,088	2%	2%	11%	27%	4.81%
813	Assemblers and Routine Operatives	13	7	N	0 / 3	2	32%	0%	£22,411	1%	10%	13%	17%	1.02%
511	Agricultural and Related Trades	14	8	N	1 / 3	3	40%	1%	£20,026	0%	1%	*	8%	1.96%
532	Building Finishing Trades	15	7	N	1 / 3	3	38%	0%	*	0%	2%	*	5%	0.74%
927	Other Elementary Services Occupations	16	8	N	0 / 3	1	41%	0%	£16,700	3%	4%	23%	38%	3.80%
921	Elementary Administration Occupations	17	7	N	1 / 3	1	39%	0%	£25,269	0%	1%	*	12%	0.59%
926	Elementary Storage Occupations	18	7	N	0 / 3	1	31%	0%	£18,987	0%	9%	19%	21%	1.11%
621	Leisure and Travel Services	19	8	N	1 / 3	2	59%	0%	£21,491	0%	2%	*	17%	0.48%
913	Elementary Process Plant Occupations	20	7	N	0 / 3	1	21%	0%	£21,261	3%	17%	23%	24%	1.05%
624	Cleaning and Housekeeping Managers and Supervisors	21	5	N	0 / 2	2	35%	0%	*	1%	11%	*	22%	0.23%
612	Childcare and Related Personal Services	22	8	N	1 / 3	2	73%	0%	£15,803	1%	1%	11%	18%	2.74%
614	Caring Personal Services	23	8	N	0 / 3	2	54%	0%	£20,117	3%	3%	20%	20%	5.31%
811	Process Operatives	24	7	N	0 / 3	2	28%	1%	£20,368	1%	19%	18%	18%	1.11%
923	Elementary Cleaning Occupations	25	7	N	0 / 3	1	19%	0%	£17,917	5%	7%	11%	20%	2.21%
421	Secretarial and Related Occupations	26	8	N	1 / 3	3	48%	0%	£19,286	1%	1%	*	13%	1.89%
925	Elementary Sales Occupations	27	5	N	0 / 2	1	33%	0%	*	3%	3%	*	13%	0.43%
623	Housekeeping and Related Services	28	7	N	0 / 3	2	32%	0%	£19,068	1%	2%	*	10%	0.33%

Note: “*” denotes that data is not available

4. Evidence from External Stakeholders and the Welsh Government (WG)

Stakeholder evidence is essential for determining whether an occupation belongs on the SOL. The WG conducted a stakeholder event on 11 June and further evidence was submitted to the WG thereafter. The event included representation from a wide range of stakeholders and the following sectors highlighted occupations for inclusion on the SOL as health and social care sector, IT and digital skills, construction, creative industries and food processing including vets.

In addition we received additional evidence after the event including the position in relation to hospitality and those who were unable to attend the event due to competing priorities as a result of the COVID-19 pandemic

Social Care

Social care is a fragile sector with long standing recruitment issues. Recent research has shown that 58% of registered social care providers reported difficulties recruiting to vacancies, with 28% indicating that it had become 'very difficult' (Hutcheson & Ormston, 2019). In commissioned services there were an estimated 3,008 vacancies across Wales in 2018. The majority (78%) of vacancies across commissioned services in Wales were amongst the staff group categorised as care workers, care officers or care assistants (Data Cymru, 2019a). A similar picture was also reported for local authority (LA) regulated services with 77% of all vacancies attributable to these staff groups (Data Cymru, 2019b). Amongst local authority (LA) regulated social care services vacancy rates were reported to be as high as 23% in 2018 (Data Cymru, 2019b). Due to the ageing population in Wales the need for care will only increase and this will result in an increased demand for caring roles, particularly in terms of domiciliary care, which is the growing at the expense of residential care. Including these vital roles on the SOL will contribute towards future-proofing the list.

The stability of the workforce varies across LAs but there is high turnover in many areas owing to difficulties in retaining staff. Recent research has shown that 26% of registered social care providers reported difficulties retaining staff, which was particularly evident within domiciliary care services where 37% of respondents described difficulties (Hutcheson & Ormston, 2019). Almost a third (32%) of domiciliary care staff in commissioned care providers left during 2018 and a similar picture was observed in residential care settings with nursing (26%) (Data Cymru, 2019a). In one Welsh LA, almost half (44%) of the staff working for care providers were recruited during one year (Data Cymru, 2019a). The figures above indicate the existing churn within the system. High rates of staff turnover are detrimental to providers because of the costs associated with recruitment and training, and importantly to those receiving care and support because of a lack in continuity of care. Currently 6.4% of the workforce are non-UK EU nationals, however once the UK exits the EU we may see a reduction in these numbers if individuals have not applied to the EU settlement scheme. Workers in the social care sector provide vital support for individuals that would otherwise need to be provided by the NHS or by families. In circumstances where there is no formal care provision available the reliance on informal care, such as by family members, will take those individuals out

of the labour market thereby increasing the burden on the welfare state and reducing workforce supply for other sectors. The NHS depends on a functioning social care system which is adequately staffed by skilled carers. Any workforce shortages in social care will indirectly impact on the NHS if individuals cannot be discharged from hospital to their home supported by domiciliary care or to residential care. Similarly if individuals cannot be cared for safely at home or in residential settings this may necessitate a hospital admission.

The social care sector relies heavily on public funding, and business models in the sector reflect this. Almost all care in Wales is reliant on a degree of public funding and therefore the commissioning rate, rather than shortages in labour supply, are the key factor in determining levels of pay. A decade of austerity has impacted greatly on local authority budgets and this has acted as a constraint on the extent to which those budgets have been able to accommodate higher commissioning rates.

Average earnings per FTE in the adult social care sector in Wales are approximately £16,900. Compared to average FTE earnings in Wales generally which are estimated to be £29,200, average wages in social care represent only 58% of the Welsh figure (Kearney & White, 2018). The sector is also characterised by high rates of part-time working – 50% in commissioned services and 70% in local authority regulated services (Data Cymru, 2019a and 2019b) meaning that actual salaries are often lower than this. The demographics of the sector reflect an overreliance on female workers - 83% in commissioned services and 87% in local authority regulated services (Data Cymru, 2019a and 2019b). Caring roles have traditionally been seen as female roles and therefore the highly-skilled and critical work undertaken by care workers is often undervalued.

The current qualification requirement for Social Care Wales registration as a care worker is RQF2, however this should be viewed as a starting point for workers on a trajectory towards professionalization. Social care workers who hold the relevant Level 3 or Level 4 qualifications are able to work towards social care management roles, an area where we are also experiencing high vacancy rates.

The COVID-19 pandemic has exacerbated the existing challenges faced by the sector prior to and during the Brexit negotiations. Stakeholder evidence suggests that potential new recruits are less likely to join the sector now due to their concerns about the risks of contracting COVID-19, and there is concern that existing care workers could leave the sector for jobs with less responsibility and risk. Stakeholders are also concerned about the psychological impact on carers of working during the pandemic, and periods of sickness absence due to mental health issues could be expected following the first peak. The cumulative impact of Brexit and COVID-19 on the sector and its workforce requirements are currently unknown, however it has become increasingly apparent the high-public value attributed to social care workers who have been granted critical worker status throughout the pandemic.

Nurses in social care pose a particular concern. Recent research indicates that Nursing and Midwifery Council (NMC) registered nurses are the staff group with the highest proportion of non-UK EU nationals working in social care in Wales at 17.7%; a figure which is much higher than the sector average of 6.4% across all staff groups (Hutcheson & Ormston, 2019). According to the same research most employers

(59%) are finding it increasingly difficult to recruit nurses and 39% reported more difficulties in retaining these qualified professionals. The number of applications from non-UK EU nurses have also decreased over a 12 month period between 2018 and 2019 (Hutcheson & Ormston, 2019). The impact of post-Brexit nursing shortages in the NHS on the social care sector has also been highlighted by stakeholders. Concerns have been raised that social care nurses may choose to leave the sector for the standardised pay, terms and conditions under Agenda for Change in the NHS.

The Welsh Government and its partners are working hard to support employers to address the challenges outlined above, for example through actions to improve the status of social care workers and to improve the wider terms and conditions of the workforce using the levers available to us. The We Care Wales campaign is one example of an attraction campaign aiming to raise awareness and understanding of social care to attract more people with the right skills and values to work in caring roles. Since the pandemic it has also developed into an innovative recruitment portal. Despite the above, the challenges faced by the social care sector are deeply embedded and there are no short term solutions. This is why immigration needs to form a part of the support available to the sector at least in the immediate to medium term.

Whilst we recognise that including social care on the shortage occupation list and relying solely on international migration will not solve all of the existing recruitment challenges in social care, we do see them as mechanisms to support our home-grown talent routes to address the current need. A decision *not* to add this sector to the SOL would compound the significant challenges the sector already faces. This would be more acute in the context of future austerity measures and the yet unknown impact of COVID-19 on future workforce requirements.

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Manufacturing

The manufacturing sector in Wales makes up 16.9% of total GVA for all industries compared to 10% for the UK as a whole. The Welsh Government commissioned the Welsh Centre for Public Policy (WCPP) to assess the impact of post-Brexit policy changes to migration on Wales². One of the key findings of the report was that manufacturing would be particularly affected by changes to the immigration system and that changes would not just impact on “low-skilled” workers and their employers; but those with intermediate skills, would also be affected. We will continue to work with our stakeholders to gather further evidence of specific impacts on this sector and share these with you as they become available.

Digital trade/creative:

This sector is the UK's fastest growing sector, growing at twice the rate of the wider economy. It is an area of the economy based on individual talent, which is not likely to be affected by automation. The development of Artificial Intelligence may prove disruptive, but could provide additional opportunities as well as challenges.

The sector is predominantly populated by freelancers and micro companies. A few key large companies in Wales are growing and providing more secure supply chain work for these small businesses.

Access is required for creative workers from the EU as well as allowing UK workers to move temporarily across Europe to deliver short term services, such as performances and shoots.

Food and Drink industry

Roles throughout the food and drink industry have been vital, both locally and nationally during this pandemic. Such practical and knowledge based skills have been highlighted, as production has had to scale up to meet supermarket and consumer demand and roles have not been able to be filled by the surplus workforce created by the Furlough scheme, due to a lack of skills for such specialised roles. In an industry that operates on tight margins, the inability to secure affordable, experienced labour will result, at best, in scaling back of production and, at worst, in closures of production sites, which would both result in job losses, ongoing supply chain impact and economic and social consequences for rural communities.

EU migrant workers provide affordable labour for a variety of reasons. They typically reside in shared occupancies, giving flexibility for childcare and travel arrangements to meet shift patterns. These arrangements enable food processors to scale production lines up and down to meet seasonal trends, weather events and promotional activity, without jeopardising the security of living arrangements for those workers. This flexibility has been one of the reasons the industry was able to

² WCPP report – Migration in Wales, the Impact of post Brexit policy changes (February 2019) - https://www.wcpp.org.uk/wp-content/uploads/2019/03/FINAL-WCPP-report_Immigration-in-Wales-post-Brexit.pdf

increase production in response to the pandemic. Such workers are dedicated to self-improvement, from skill development to undertake particular roles to learning local dialects to integrate into communities.

Since EU citizens comprise 26% of the labour force employed in the Welsh Food and Drink manufacturing sector, as a country we could be disproportionately affected by the loss of ready access to migrant labour from EU countries, when compared to the rest of the UK.

The cost burden of recruitment and requirement for additional training rounds would be unsustainable for businesses constantly having to back-fill posts due to the expiration of 12 month visas. Either the cost burden would be passed to UK consumers, driving up the cost of food and drink and eroding household incomes, or businesses would close causing food security issues within the UK, as well as social and economic issues within Welsh communities. Domestic food production has significant sustainability, environmental and well-being benefits. It is of national interest to ensure these businesses, and those throughout the supply chain including logistics and distribution of food and drink products, can access the labour they rely on.

Whilst businesses and the Welsh Government continue to invest in innovation to develop automated processes, certain roles will continue to require human input. Manual dexterity and complex or delicate handling requirements, protection of animal welfare, and high levels of flexibility to adapt and complete production lines all require human judgement and intervention.

The Food & Drink Industry Wales Board report that meat processors (red and white meat) in Wales are increasingly dependent on agency staff and when food service reopen they will not be able to meet demand. Meat processing in Wales also employs many settled migrants with their families now living in more rural areas of Wales such as Llanybydder and Lampeter and this settled immigrant population is key to sustaining the local economies of these areas.

Vets

In addition Wales and the UK have become increasingly dependent on EU27 veterinary graduates. And there is an increasing regulatory requirement for veterinary certification of the health and safety of animal produce and for veterinary oversight of the welfare of animals in the food supply chain. A consequence of this increased veterinary role, greater access to the UK labour market and professional engagement with public health work has led to a situation where Wales and the UK is highly dependent on EU 27 vets in public health and state veterinary medicine roles in particular.

Professional and business services sector:

The sector includes professional services (accountancy, legal, architectural, engineering, medical) Computer and related services (software implementation, data based), R&D services. The PBS sector relies on the seamless movement of

services, people and data across international borders. The UK legal services sector employed 329,000 people in 2017 two thirds of these are outside London.

Construction

In relation to the construction industry, there is ongoing work with training the domestic workforce, and trying to reduce reliance on migrant workers but the sector needs temporary inclusion in the SOL to bridge that gap.

Hospitality

The sector reported previously, as an industry, that it was trying to cope with staff shortages, skills gaps and limited recruitment from a near full employment position where there was considerable competition for jobs within the main rate bands from other mass employers like retail etc. and significant shortages in areas like Chefs that the training processes were unable to address.

UK Hospitality Cymru has led on and helped devise a new and detailed medium/long term skills strategy including a new national skills partnership, changing the perceptions of the industry in the younger age groups and seeking returners to retrain into industry jobs. This group will reconvene soon to address the vista of devastation that has been the landscape for hospitality since lockdown and areas where it can help to do something to get even the smallest things going again.

The sector has previously sought help from MAC to consider Hospitality for any measures that it had at its disposal to aid their skills shortages and skills gaps and to allow a continuation of the existing short-term solution via a post Brexit transition period for imported labour and to reduce the then £30,000 pa restrictions (later dropped a little but not into our largest labour demand area for room cleaning etc. which was below £25,600).

However, in term of staff resourcing, the reality seems to have changed dramatically since lockdown and it must be acknowledged that there are a large amount of unknown factors and issues which are unquantifiable at this point.

The sector cites anecdotal evidence that workers from other EU countries previously employed in Wales have returned to their countries of origin to be with and look after their families in the current crisis and it must be expected that many will not return give the pressures on their position from Brexit. How many more skilled hospitality workers could be enticed here given the Brexit position is unknown and in reality it is unlikely that the same demand will be there with an increased indigenous workforce becoming available. However, it really is an unknown.

5. Recommendations

The Welsh Government recommends that the evidence contained in this paper and the accompanying Excel file should be used by the MAC to inform production of the Welsh SOL, recognising the specific needs of the Welsh economy.

Linking to other data, emphasise the growth in the care sector, IT, construction and insurance, and the overall importance of food, education and manufacturing to Wales as areas to be prioritised.

Furthermore, based on the data analysis and evidence received from the External Stakeholder Group, it is recommended that consideration is given to including the following occupations on the Welsh SOL:

- The professional groups listed in Tables 1 and 2 of this paper have been ranked according to the quantitative data available on the indicators, we would ask that some consideration be given to re-prioritising roles in social care based on the 'sensible' criterion. Currently [223] nursing and midwifery professionals and [124] managers and proprietors in health care services are ranked 28 and 39 respectively in Table 1, and [614] caring personal services is ranked 23 in Table 2 meaning that they are unlikely to qualify without special consideration. This will be a key area, as it includes senior care workers: Nursing auxiliaries and assistants (6141); Dental nurses (6143) and senior care workers (6146)
- The construction sector spoke of shortages in NQF 2 roles which should be included on the SOL
- The critical keyworker status of food processing operatives, as applied by the UK Government during the COVID-19 pandemic, provides the 'sensible criteria' necessary for inclusion in the shortage occupation list. Food business investment in training and skills development has created a skilled workforce. Many staff hold NVQ Level 2 or 3 in Food Manufacturing Excellence, providing the competency to undertake roles such as abattoir operative, brewery worker, butcher, food processing operative and meat process worker. Further specialist training and certification is required for other employees at either end of the supply chain, for example, FLT Driver Licence and WATOK Licence (Welfare of Animals at the Time of Killing) requirements.

For health we would look under:

- code 124: Health care practice managers (1241), and Residential, day and domiciliary care managers (1242).
- code 321:
 - Medical and dental technicians (3218)
 - Health associate professionals not elsewhere classified (3219) i.e. acupuncturists, sports therapists
 - Dispensing opticians (3216)
 - Pharmaceutical technicians (3217)
- code 311: Laboratory technicians (3111)

For RQF 6 roles, under 221 and 222. These include some key areas including perfusionists and physiotherapists.

- Podiatrists (2218)
- Other health professionals not elsewhere specified (2219) i.e. perfusionists, dietitians, paramedical practitioners, prosthetics and orthotics
- Therapists (2229) i.e. arts/drama/music therapists, orthoptist, osteopaths
- physiotherapists (2221)

Whilst the Welsh Government has engaged with stakeholders via its External Stakeholder Group, it is envisaged that further evidence will be received by the MAC from Welsh stakeholders via its Call for Evidence and will complement the evidence included in this paper. Hopefully this will provide additional evidence on the occupations recommended for inclusion in this paper, evidence and rationale for inclusion of additional evidence, and evidence that will help build on this paper and further identify 4 digit occupations that are suitable for inclusion on a Welsh SOL.

Annex A – Full 3 digit occupation ranking (occupations with 5 or more shortage indicators)

3 digit occupation		Shortage		Skills		Contextual information								
SOC 2010 Code	SOC 2010 Title	Rank	Shortage indicators available	Skilled	Skilled indicator thresholds met	ONS skill level	% RQF 3+	% PhDs	Median full-time earnings	% Non-EU workers	% EU workers	% EU workers arrived last 2 years	% New hires	% share emp.
214	Conservation and Environment Professionals	1	7	Y	3 / 3	4	92%	7%	£33,552	1%	8%	*	21%	0.23%
241	Legal Professionals	2	8	Y	3 / 3	4	96%	0%	£43,432	0%	2%	*	13%	0.52%
118	Health and Social Services Managers and Directors	3	8	Y	3 / 3	4	90%	3%	£42,318	0%	1%	*	7%	0.37%
622	Hairdressers and Related Services	4	6	N	1 / 3	2	55%	0%	£17,463	2%	2%	*	22%	0.78%
247	Media Professionals	5	5	Y	3 / 3	4	87%	1%	*	2%	3%	*	8%	0.27%
924	Elementary Security Occupations	6	5	N	0 / 3	1	35%	1%	£21,962	2%	3%	*	20%	0.81%
812	Plant and Machine Operatives	7	8	N	1 / 3	2	32%	0%	£24,244	1%	11%	22%	20%	0.69%
713	Sales Supervisors	8	8	N	0 / 3	2	44%	1%	£20,765	2%	3%	*	10%	0.71%
822	Mobile Machine Drivers and Operatives	9	7	N	1 / 3	2	21%	0%	£28,074	0%	6%	0%	18%	0.63%
356	Public Services and Other Associate Professionals	10	8	Y	3 / 3	3	79%	1%	£30,158	1%	2%	*	11%	1.79%
353	Business, Finance and Related Associate Professionals	11	8	Y	3 / 3	3	75%	1%	£28,571	1%	2%	*	16%	1.82%
212	Engineering Professionals	12	8	Y	3 / 3	4	82%	3%	£38,797	1%	3%	*	9%	1.37%
213	Information Technology and Telecommunications Professionals	13	8	Y	3 / 3	4	86%	2%	£37,574	2%	2%	*	18%	1.82%
116	Managers and Directors in Transport and Logistics	14	8	Y	2 / 3	4	53%	0%	£28,900	0%	3%	*	12%	0.54%
125	Managers and Proprietors in Other Services	15	8	Y	3 / 3	4	62%	1%	£30,670	2%	1%	*	8%	1.72%
222	Therapy Professionals	16	8	Y	3 / 3	4	98%	0%	£30,764	2%	2%	*	14%	0.48%
524	Electrical and Electronic Trades	17	8	Y	3 / 3	3	66%	0%	£31,488	1%	3%	*	12%	1.48%
246	Quality and Regulatory Professionals	18	8	Y	3 / 3	4	88%	2%	£34,298	4%	5%	*	10%	0.40%

533	Construction and Building Trades Supervisors	19	5	Y	2 / 3	3	43%	0%	*	0%	0%	*	10%	0.20%
722	Customer Service Managers and Supervisors	20	8	Y	2 / 3	2	66%	0%	£25,973	1%	1%	*	11%	0.47%
354	Sales, Marketing and Related Associate Professionals	21	8	Y	3 / 3	3	71%	1%	£32,321	1%	2%	*	17%	2.21%
911	Elementary Agricultural Occupations	22	7	N	0 / 3	1	41%	1%	£21,520	0%	1%	*	11%	0.52%
522	Metal Machining, Fitting and Instrument Making Trades	23	8	Y	3 / 3	3	57%	1%	£32,277	0%	3%	*	14%	1.18%
111	Chief Executives and Senior Officials	24	7	Y	3 / 3	4	82%	7%	£57,983	2%	0%	*	7%	0.22%
211	Natural and Social Science Professionals	25	8	Y	3 / 3	4	96%	22%	£33,687	4%	5%	*	10%	0.57%
242	Business, Research and Administrative Professionals	26	8	Y	3 / 3	4	87%	4%	£36,631	1%	1%	*	15%	1.56%
244	Welfare Professionals	27	8	Y	3 / 3	4	93%	1%	£33,317	2%	1%	*	7%	0.70%
543	Food Preparation and Hospitality Trades	28	8	N	1 / 3	3	40%	0%	£20,358	4%	6%	22%	22%	1.54%
912	Elementary Construction Occupations	29	7	N	0 / 3	1	25%	0%	£22,785	1%	1%	*	37%	0.62%
531	Construction and Building Trades	30	8	Y	2 / 3	3	47%	0%	£23,235	0%	2%	10%	9%	2.79%
323	Welfare and Housing Associate Professionals	31	8	Y	3 / 3	3	84%	1%	£25,117	1%	0%	*	20%	1.26%
521	Metal Forming, Welding and Related Trades	32	7	Y	2 / 3	3	48%	0%	£25,131	1%	3%	*	21%	0.37%
113	Functional Managers and Directors	33	8	Y	3 / 3	4	80%	1%	£43,543	1%	1%	*	8%	2.30%
712	Sales Related Occupations	34	8	N	1 / 3	2	47%	0%	£17,328	4%	3%	*	13%	0.54%
313	Information Technology Technicians	35	8	Y	3 / 3	3	79%	0%	£28,434	1%	2%	*	21%	0.53%
821	Road Transport Drivers	36	8	N	0 / 3	2	25%	0%	£22,830	1%	4%	19%	18%	2.83%
112	Production Managers and Directors	37	8	Y	3 / 3	4	71%	1%	£43,492	1%	1%	*	10%	1.54%
223	Nursing and Midwifery Professionals	38	8	Y	3 / 3	4	95%	0%	£34,072	2%	3%	19%	7%	2.64%

413	Administrative Occupations: Records	39	8	Y	2 / 3	3	55%	0%	£21,420	0%	4%	20%	20%	1.28%
221	Health Professionals	40	8	Y	3 / 3	4	97%	13%	£44,212	6%	6%	23%	9%	1.89%
814	Construction Operatives	41	7	N	1 / 3	2	24%	0%	£27,951	0%	1%	*	23%	0.58%
711	Sales Assistants and Retail Cashiers	42	7	N	0 / 3	2	39%	0%	£17,088	2%	2%	11%	27%	4.81%
243	Architects, Town Planners and Surveyors	43	8	Y	3 / 3	4	89%	0%	£31,437	1%	3%	*	19%	0.70%
231	Teaching and Educational Professionals	44	8	Y	3 / 3	4	97%	5%	£39,084	2%	3%	11%	10%	4.93%
411	Administrative Occupations: Government and Related Organisations	45	8	Y	3 / 3	3	61%	1%	£24,854	1%	0%	*	9%	1.71%
352	Legal Associate Professionals	46	8	Y	3 / 3	3	85%	0%	£23,375	1%	5%	*	13%	0.27%
813	Assemblers and Routine Operatives	47	7	N	0 / 3	2	32%	0%	£22,411	1%	10%	13%	17%	1.02%
311	Science, Engineering and Production Technicians	48	8	Y	3 / 3	3	69%	0%	£27,468	1%	4%	0%	13%	1.10%
511	Agricultural and Related Trades	49	8	N	1 / 3	3	40%	1%	£20,026	0%	1%	*	8%	1.96%
532	Building Finishing Trades	50	7	N	1 / 3	3	38%	0%	*	0%	2%	*	5%	0.74%
331	Protective Service Occupations	51	8	Y	3 / 3	3	66%	0%	£38,834	1%	1%	*	6%	1.11%
416	Administrative Occupations: Office Managers and Supervisors	52	8	Y	3 / 3	3	67%	1%	£31,593	1%	1%	*	5%	0.69%
927	Other Elementary Services Occupations	53	8	N	0 / 3	1	41%	0%	£16,700	3%	4%	23%	38%	3.80%
921	Elementary Administration Occupations	54	7	N	1 / 3	1	39%	0%	£25,269	0%	1%	*	12%	0.59%
721	Customer Service Occupations	55	8	Y	2 / 3	2	55%	0%	£21,099	2%	2%	*	20%	1.46%
926	Elementary Storage Occupations	56	7	N	0 / 3	1	31%	0%	£18,987	0%	9%	19%	21%	1.11%
124	Managers and Proprietors in Health and Care Services	57	8	Y	3 / 3	4	86%	1%	£31,728	1%	1%	*	6%	0.30%
412	Administrative Occupations: Finance	58	7	Y	3 / 3	3	61%	1%	£22,561	1%	2%	0%	13%	2.10%
122	Managers and Proprietors in Hospitality and Leisure Services	59	8	Y	2 / 3	4	60%	0%	£20,694	3%	5%	1%	11%	1.10%
621	Leisure and Travel Services	60	8	N	1 / 3	2	59%	0%	£21,491	0%	2%	*	17%	0.48%

321	Health Associate Professionals	61	8	Y	3 / 3	3	77%	1%	£22,721	1%	2%	*	9%	0.59%
913	Elementary Process Plant Occupations	62	7	N	0 / 3	1	21%	0%	£21,261	3%	17%	23%	24%	1.05%
119	Managers and Directors in Retail and Wholesale	63	8	Y	3 / 3	4	55%	0%	£23,815	1%	2%	*	8%	1.01%
523	Vehicle Trades	64	8	Y	3 / 3	3	56%	0%	£23,778	0%	3%	*	10%	1.05%
624	Cleaning and Housekeeping Managers and Supervisors	65	5	N	0 / 2	2	35%	0%	*	1%	11%	*	22%	0.23%
612	Childcare and Related Personal Services	66	8	N	1 / 3	2	73%	0%	£15,803	1%	1%	11%	18%	2.74%
614	Caring Personal Services	67	8	N	0 / 3	2	54%	0%	£20,117	3%	3%	20%	20%	5.31%
415	Other Administrative Occupations	68	8	Y	3 / 3	3	58%	0%	£20,855	1%	2%	0%	16%	2.42%
811	Process Operatives	69	7	N	0 / 3	2	28%	1%	£20,368	1%	19%	18%	18%	1.11%
923	Elementary Cleaning Occupations	70	7	N	0 / 3	1	19%	0%	£17,917	5%	7%	11%	20%	2.21%
525	Skilled Metal, Electrical and Electronic Trades Supervisors	71	5	Y	2 / 2	3	74%	0%	£34,744	0%	2%	*	3%	0.14%
421	Secretarial and Related Occupations	72	8	N	1 / 3	3	48%	0%	£19,286	1%	1%	*	13%	1.89%
925	Elementary Sales Occupations	73	5	N	0 / 2	1	33%	0%	*	3%	3%	*	13%	0.43%
623	Housekeeping and Related Services	74	7	N	0 / 3	2	32%	0%	£19,068	1%	2%	*	10%	0.33%

Note: '*' denotes that data is not available

Annex B – 3 digit occupations excluded due to insufficient data (occupations with 4 or less shortage indicators)

3 digit occupation		Shortage		Skills		Contextual information								
SOC 2010 Code	SOC 2010 Title	Rank	Shortage indicators available	Skilled	Skilled indicator thresholds met	ONS skill level	% RQF 3+	% PhDs	Median full-time earnings	% Non-EU workers	% EU workers	% EU workers arrived last 2 years	% New hires	% share emp.
115	Financial Institution Managers and Directors	-	3	Y	3 / 3	4	70%	0%	*	0%	0%	*	2%	0.18%

117	Senior Officers in Protective Services	-	3	Y	2 / 2	4	73%	1%	*	2%	1%	*	5%	0.13%
121	Managers and Proprietors in Agriculture Related Services	-	3	N	1 / 2	4	54%	1%	*	4%	0%	*	2%	0.16%
215	Research and Development Managers	-	3	Y	3 / 3	4	95%	12%	*	2%	0%	*	15%	0.15%
245	Librarians and Related Professionals	-	3	Y	2 / 2	4	86%	1%	*	2%	3%	*	10%	0.13%
312	Draughtspersons and Related Architectural Technicians	-	3	Y	2 / 2	3	90%	0%	*	0%	3%	*	17%	0.16%
341	Artistic, Literary and Media Occupations	-	3	Y	3 / 3	3	85%	2%	*	2%	2%	*	12%	1.14%
342	Design Occupations	-	4	Y	2 / 2	3	86%	0%	*	0%	5%	*	14%	0.31%
344	Sports and Fitness Occupations	-	4	Y	2 / 2	3	76%	1%	*	2%	1%	*	23%	0.57%
351	Transport Associate Professionals	-	3	Y	2 / 2	3	64%	0%	*	0%	6%	*	0%	0.09%
355	Conservation and Environmental Associate Professionals	-	1	Y	2 / 2	3	93%	1%	*	0%	0%	*	*	0.06%
541	Textiles and Garments Trades	-	3	N	1 / 2	3	39%	0%	*	3%	5%	*	24%	0.14%
542	Printing Trades	-	3	N	1 / 2	3	42%	1%	*	2%	9%	*	2%	0.16%
544	Other Skilled Trades	-	3	N	1 / 2	3	51%	1%	*	0%	5%	*	6%	0.34%
613	Animal Care and Control Services	-	3	N	1 / 2	2	61%	0%	*	1%	4%	*	19%	0.35%
823	Other Drivers and Transport Operatives	-	3	N	0 / 2	2	34%	0%	*	0%	1%	*	12%	0.25%

Note: '*' denotes that data is not available

Annex C - Detailed methodology for data analysis

The data analysis referenced in this paper and the accompanying Excel file is based on the methodology employed by the MAC in its Full review of the Shortage Occupation List, published in May 2019, with adjustments to account for sample size limitations. Under this methodology, to be placed on the SOL, an occupation must meet the three criteria of skilled, shortage and sensible:

- Is the occupation **skilled** to the required level?
- Is the occupation in **shortage**?
- Is it **sensible** to try to fill those shortages through migration?

Data analysis has been carried out to determine if occupations are skilled to the required level and whether the occupation is in shortage. This Annex outlines the methodology behind this along with analysis carried out to provide further contextual information.

Skill indicators

To determine whether an occupation is skilled, the MAC use three indicators. An occupation is classed as skilled if it meets the threshold on two of the possible three indicators. These indicators are detailed below.

Skill level in ONS Standard Occupation Code (SOC) hierarchy

The ONS assigns a skill level from 1 to 4 to each 2 digit SOC. A SOC meets the threshold if the 2 digit SOC it falls under has a skill level of at least 3. The ONS states 'The third skill level applies to occupations that normally require a body of knowledge associated with a period of post compulsory education but not normally to degree level.'

Source: ONS SOC 2010 manual, volume 1

Percentage of workforce skilled to Regulated Qualification Framework (RQF) level 3 or more

Occupations are ranked by the proportion of the workforce with a higher qualification of RQF 3 or more. The top ranked occupations are listed as meeting the threshold. The number of occupations included is chosen so that the total proportion of workers in occupations meeting the threshold matches the overall proportion of the Welsh population skilled to RQF3+.

The indicator covers the time period 2015 to 2019.

Source: Annual Population Survey

Median hourly earnings

Occupations are ranked by their median hourly earnings. The top ranked occupations are listed as meeting the threshold. The number of occupations included is chosen so that the total proportion of workers in occupations meeting the threshold matches the overall proportion of the Welsh population skilled to RQF3+. Data was inflation adjusted according to the CPIH index.

The indicator covers the time period 2019.

Source: Annual Survey of Hours and Earnings

Not all occupations will have data available for all three indicators. Regardless, the rule of having to meet two skill indicator thresholds is kept in place to determine whether an occupation is skilled.

Shortage indicators

To determine whether an occupation is in shortage, the MAC use a series of nine indicators. As this methodology was developed for UK level analysis, a full replication has not been possible. The indicators used in the Welsh analysis are set out below:

1 year percentage change in hourly earnings

Equivalent to MAC indicator P1. Indicator is calculated over the time period 2018 to 2019

Source: Annual Survey of Hours and Earnings

3 year percentage change in hourly earnings

Equivalent to MAC indicator P2. Indicator is calculated over the time period 2016 to 2019

Source: Annual Survey of Hours and Earnings

1 year percentage change in paid hours

Equivalent to MAC indicator V3 (timescale changed to 1 year from 3 years). Indicator is calculated over the time period 2018 to 2019.

Source: Annual Survey of Hours and Earnings

3 year percentage change in paid hours

Equivalent to MAC indicator V3. Indicator is calculated over the time period 2016 to 2019.

Source: Annual Survey of Hours and Earnings

Percentage change in employment

Equivalent to MAC indicator V2. Timescale has been changed and years pooled due to sample size limitations. Indicator is calculated over the time period 2016-17 to 2018-19.

Source: Annual Population Survey

Percentage change in new hires

Equivalent to MAC indicator V4. Timescale has been changed and years pooled due to sample size limitations. Indicator is calculated over the time period 2016-17 to 2018-19.

Source: Annual Population Survey

Regressed difference in hourly wage from average hourly wage (Level 3+)

Equivalent to MAC indicator P3. Individual regressions were not carried out for each skill level due to sample size limitations. Indicator is calculated over the time period 2019.

Source: Annual Population Survey

Inactive and unemployed / employed

Equivalent to MAC indicator A V1. Indicator is calculated over the time period 2012-2017).

Source: Annual Population Survey (Longitudinal data)

Not all occupations have a full set of data available across the eight indicators. For an occupation to be eligible for inclusion in the ranking, it must have data available for at least five of the shortage indicators.

Contextual information

In addition to the indicators used to determine whether an occupation is sufficiently skilled or in shortage, a set of contextual information has been provided for each occupation. This is outlined below.

Percentage with RQF level 3+

The percentage of workers in an occupation holding qualifications at RQF level 3 or above. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage with PhDs

The percentage of workers in an occupation holding qualifications at RQF level 8 or above. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Median full-time earnings

Median full-time annual earnings for the occupation, excluding overtime. Calculated over the time period 2019.

Source: Annual Survey of Hours and Earnings

Percentage of non-EU workers

The percentage of workers in an occupation who report their nationality as non-EU non-UK. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage of EU workers

The percentage of workers in an occupation who report their nationality as within the EU (excluding the UK). Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage of EU workers who arrived in the last two years

The percentage of workers in an occupation whose self-reported nationality is in the EU (excluding the UK) and who arrived in the UK in the last two years. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage of new hires

The percentage of workers in an occupation who were hired in the last year. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage share of employment in Wales

The number of workers in each occupation as a percentage of total employment in Wales. Calculated over the time period 2015-2019.

Source: Annual Population Survey

Percentage earning at least £25,600 annually

The percentage of workers in an occupation who are earning £25,600 or more annually excluding bonuses and overtime. Calculated over the time period 2019.

Source: Annual Survey of Hours and Earnings

25th percentile annual earnings

Annual earnings at the 25th percentile for workers in an occupation. Calculated over the time period 2019.

Source: Annual Survey of Hours and Earnings

Changes to MAC methodology

As part of the current SOL update, the MAC are also updating the methodology they use to determine an occupation's eligibility for the SOL. As this new methodology was not available when carrying out this Wales analysis, the methodology from the MAC's Full review of the Shortage Occupation List (published in May 2019) has been used.

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