

EXPANSION OF EARLY LEARNING AND CHILDCARE: SCOTTISH GOVERNMENT WORKFORCE MODEL

Introduction

This note describes the approach and assumptions which currently underpin the Scottish Government's estimates of the additional financial resources and workforce required to deliver the expansion of the funded early learning and childcare (ELC) entitlement to 1,140 hours a year.

In September 2016 the Scottish Government published the *Financial review of early learning and childcare in Scotland: the current landscape*¹. The *Financial Review* improved our understanding of the expenditure and costs associated with delivering ELC provision and drew on specific data collections from local authorities and from partner providers that were conducted as part of the Financial review.

Following completion of the Financial Review, Scottish Government analysts have developed a detailed model to inform our financial and workforce estimates of the ELC expansion.

As well as drawing on data from the Financial Review the model is underpinned by a range of additional data and assumptions covering uptake rates; staff and training costs; and projected population. We continue to monitor these assumptions and underpinning data to ensure that the model reflects the most recent information.

The Scottish Government is currently working closely with COSLA and local authorities to reach agreement by the end of April on the quantum of the multi-year funding package for delivering the expansion.

This sets out the assumptions and data sources underpinning the workforce estimates in the model.

Overview

Quantity of Funded ELC - overview

The first step of our modelling is to estimate expected demand for the funded entitlement at full rollout in 2021-22, which is the first full financial year after implementation. This is calculated based on population projections, eligibility criteria and uptake estimates. Demand is allocated between provider types based on assumptions:

- regarding the share of the entitlement delivered by local authorities and funded providers; and
- around the share of providers offering year-round and term-time-only provision.

¹ <http://www.gov.scot/Publications/2016/09/8729>

Workforce Costs- overview

A fundamental aspect of the modelling approach is that workforce is calculated on the basis of what is required to deliver the full 1,140 hours and not simply the additional workforce required for the expansion (on top of the current entitlement of 600 hours per year).

The total 1,140-hours workforce requirement is estimated based on staff:child ratios and assumptions about staff availability and output. The existing workforce is deducted from that total required to provide an estimate of the additional workforce requirement. This approach does not take the current allocation of workforce as a given and assumes, implicitly, that where the existing workforce exceeds the adjusted staff:child ratios, that they are available to be re-allocated to deliver the expanded entitlement.

The estimated additional workforce requirement is used, along with data on training costs and wage and non-wage employer costs, to estimate the expected additional workforce expenditure required from 2018-19 through to 2021-22.

Details of the modelling approach

The above steps are now described in more detail.

Quantity of Funded ELC – detail

The quantity of funded ELC at each year of age which will be delivered at full rollout is calculated by multiplying the population at ages 2-5 by the expected % eligible and the expected % uptake, as follows:

- Population estimates are taken from the National Records Scotland 2014-based principal population projections, by sex, single year of age and year².
- Eligibility is universal (100%) for 3 and 4 four year olds; we estimate that current 2 year old eligibility is 25%³ and assume that it will remain at this level throughout; parents are able to defer the entry of their child into primary school and access a further year of funded ELC as a 5 year old if the child is born in January or February ie around 17% of the population.
- Uptake of 3 and 4 year olds is currently around 100% and we assume this will continue; uptake of funded ELC by eligible 2 year olds is currently estimated at around 36% and we assume that this will increase to 50% by 2021-22; uptake of ELC by (deferred) 5 year olds is currently around 50% and we assume this will continue.
- 3 year olds become eligible for the funded entitlement at the start of the term after their third birthday. As a result, children in their ante-pre-school year will receive, on average,

² <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-projections/sub-national-population-projections/2014-based/detailed-tables>

³ This estimate is based on data from HMRC and DWP on the number of children in households in receipt of qualifying benefits and on Scottish Government data on the number of looked after children. The full eligibility criteria for 2 year olds are described here: <https://www.mygov.scot/childcare-costs-help/funded-early-learning-and-childcare/>

around 75% of a full year's funded ELC and the estimated uptake of ELC hours is adjusted accordingly.

Having calculated the total expected hours of funded ELC at each child year of age, those hours are then distributed across the following categories:

- Children with / without additional support needs (ASN) – we assume that the number of children with ASN increases to 18% of the attending population at each age, up from 16% in 2017⁴.
- Provider type: we assume that the proportion of 3-5 year olds receiving funded ELC in local authority settings remains as now at around 75%, with the remainder receiving their ELC at partner provider and childminder settings; we assume that the proportion of 2 year olds receiving the funded entitlement at partner and childminder settings increases slightly to around 20% with the remainder receiving their funded entitlement in local authority settings
- Year round / term time provision – we assume that the proportion of children receiving provision in a year round context increases to 45% of 3-5 year olds and 35% of two year olds. Currently settings accounting for around 23% of local authority registered capacity places offer year-round availability⁵. The equivalent figure for funded provider settings is 96%. It is unknown exactly what proportion of funded ELC hours are currently taken on a term-time or year-round basis

Overall we expect around 130 million hours of funded ELC to be delivered in total at full rollout of 1140 hours in 2021-22 with around 100 million of those hours provided in local authority settings.

Workforce Costs- detail

To calculate the workforce required in local authority settings to deliver the funded ELC entitlement we model what a full-time equivalent (FTE) practitioner can deliver in terms of ELC hours and divide the total number of ELC hours through by that figure to arrive at an estimate of the total number of FTEs required.

To do this we assume that an FTE practitioner is available to deliver the funded entitlement for around 65% of their contracted hours with the remainder of their time given over to holidays, preparation time and periodic under-utilisation due to the provision of additional flexibility in how the service is made available to parents. We assume that the workforce is deployed in accordance with the Care Inspectorate guidelines on staff:child ratios as follows: 1:5 for 2 year olds; 1:8 for 3-5 year olds; and we assume these ratios are reduced by two for children with ASN (ie to 1:3 and 1:5 respectively).

The estimate of the currently available workforce is derived from 2016 data provided by SSSC and based on Care Inspectorate annual returns. The SSSC data includes figures for workforce headcount by staff grade and also figures for average hours worked, from which we calculate an estimated number of FTE. This figure is then adjusted to account for the reported increase in local authority

⁴ See Scottish Government, Early Learning and Childcare Statistics, Additional Early Learning and Childcare Tables <http://www.gov.scot/Topics/Statistics/Browse/Children/Pubs-Pre-SchoolEducation>

⁵ See The Expansion of Early Learning and Childcare, Evaluation report 2017 <http://www.gov.scot/Publications/2017/12/5250/downloads>

expenditure on ELC between 2016 (when the staff data was collected) and 2017-18 (which we use as the baseline year for estimating additional revenue funding requirements). We assume that 80% of the increase in spending was used accounted by staff costs and funded the recruitment of more practitioners (this assumption is in-line with the cost information in the Financial Review regarding the average contribution of staffing costs to overall costs in local authority settings).

To calculate the number of additional managers required we assume 0.8 FTE managers per setting and that the total number of local authority settings increases by around 600. We deduct from this the total number of available managers based on SSSC data.

The additional cost of the workforce is calculated using employee cost information (salary and non-salary cost) provided by local authorities.

Our understanding of the workforce required in funded provider settings is more limited. Based on research conducted for Scottish Government by Ipsos MORI in 2016 we estimate that around 60% of staff time in partner settings is spent delivering care to 3-5 year olds and that provision of the 1,140 entitlement would imply around 50% of staff time in these settings - ie the extent to which the expansion in funded entitlement results in entitlement hours displacing currently paid-for hours. This suggests that funded providers *may* be able to deliver 1,140 hours using the existing workforce.

From: [redacted]
DCAF: Creating Positive Futures
18 October 2017

Minister for Childcare and Early Years

Early Learning and Childcare Expansion – Updated Additional Workforce Estimates

Purpose

1. To provide you, ahead of the launch of the ELC recruitment marketing campaign on 23rd October, with an overview of the latest estimates of the potential increase in the ELC workforce required as a result of the expansion in funded ELC entitlement to 1140 hours by 2020.

Priority

2. **Urgent** – the recruitment marketing campaign will be launched on Monday 23rd October.

Background

3. Initial estimates, produced in early 2015, indicated that around 20,000 additional workers (headcount) would be required by the time the expanded entitlement was fully rolled out.
4. References to the 20,000 estimate have been included in previous Scottish Government correspondence and publications including the *Skills Investment Plan Prospectus* published in March 2017 (where it is referred to as a provisional estimate). There is also a reference in the 2016 SNP manifesto.
5. Over the last 12 months following the completion of the ELC *Financial Review*, we have developed a detailed model to inform our financial and workforce estimates.
6. As a result we now estimate that the required increase in the ELC workforce is likely to be considerably lower than the initial 20,000 estimate.
7. Local authorities have also recently submitted their ELC Expansion Plans. These plans include local level estimates of additional workforce requirements and provide another helpful source of information to inform our overall estimate.
8. On 23rd October the First Minister will launch the first phase of the recruitment marketing campaign for the ELC workforce expansion. As part of this launch we will need to include estimates of the potential additional ELC workforce requirements.

Estimated Overall Workforce Requirement

9. The estimated additional workforce requirement is sensitive to a number of assumptions underpinning the financial and workforce model, which we are continuing to refine, particularly as we assess local authority expansion plans in more detail. In light of this uncertainty over the exact scale of the required increase we have presented the potential increase as a range (**Table 1**). **This suggests a total estimated additional workforce requirement (relative to 2015-16) of 8,000 to 11,000 workers (headcount) by 2020.**
10. This estimate includes 900 new practitioners to backfill the posts vacated for the 900 new managers (on the assumption that these posts will be filled by practitioners upskilling by undertaking graduate level qualifications).

Table 1: Estimated Additional ELC Workforce Requirement by 2020

Estimated additional staff required		
	Headcount	FTE
Managers	900	800
Practitioners (including backfill for new managers)	7,000-10,500	5,500 – 8,300
Total estimated additional staff requirement	7,900 – 11,400	6,300 – 9,100

11. Our modelling assumption is that the great majority of these workers will be required within local authority settings – and would suggest that the local authority ELC practitioner workforce increases by around 65% to 100% compared to current levels.
12. Further background information is provided in **Annex A**.

Local Authority Expansion Plans

13. The local authority expansion plans provide us with local level estimates of potential additional workforce requirements. In aggregate our initial analysis of the plans indicates that around 12,000 FTE additional workers will be required by 2020 (all within LA settings). This is equivalent to around 15,000 additional workers (headcount).
14. However, our initial analysis of the expansion plans suggests that the additional revenue requirements from authorities are around 30% higher than our central estimates (with the workforce the predominant driver of revenue), and there are substantial inconsistencies across authorities with regards to the relative scale of workforce increases. As these inconsistencies are challenged and addressed we would anticipate that the overall additional workforce requirement from local authorities will decline.

Presentation of ELC Additional Workforce Requirements

15. Whilst our detailed modelling work, and early consideration of the local authority expansion plans, strongly indicate that the initial estimate of the potential overall increase in the ELC workforce (of 20,000 additional workers) was an

overestimate there is still a degree of uncertainty regarding the exact scale of the additional workforce requirements.

16. In light of this we recommend a degree of caution in presenting any additional ELC workforce requirements and that they are presented as:

- **Over the period to 2020 the expansion to 1140 hours is estimated to require up to 11,000 additional ELC workers.**

Summary

17. You are invited to:

- **Note the revised ELC workforce requirements for the period to 2020 and detailed analysis in Annex A; and**
- **Confirm whether you are content that we now move to using these revised estimates, as set out in paragraph 16, in the supporting material for the recruitment marketing campaign and in our future briefing material.**

[redacted]
 DCAF: Creating Positive Futures
 [redacted]
 18 October 2017

Copy List:	For Action	For Comments	For Information		
			Portfolio Interest	Constit Interest	General Awareness
First Minister Deputy First Minister and Cabinet Secretary for Education and Skills			X		X

DG Education, Communities and Justice
 Michael Chalmers, Director for Children and Families
 Joe Griffin
 [redacted]
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 Colin McAllister
 Kate Higgins
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Background Information on ELC Workforce and Additional Workforce Estimates

Introduction

1. This annex provides further details on the current ELC workforce and the approach to estimating the additional workforce requirements.

Overview of the current ELC workforce and Sector

2. Our previous estimates of ELC workforce requirements have been presented in terms of headcount – e.g. the number of workers required. In 2015 there were around 33,500 workers employed in settings in the Early Learning and Childcare sector (in addition, in 2015 there were also around 5,500 childminders). **Note** - we will shortly receive new detailed estimates of the ELC workforce from the SSSC for 2016.

3. However, our financial and workforce model estimates workforce requirements in terms of full-time equivalents (FTEs). Due to the significant number of workers in the ELC sector, particularly in local authority settings⁶, who work part-time the FTE requirement is generally lower than the headcount requirement. For some of the analysis below we also present the FTE figures for comparison.

4. **It is estimated that around 22,600 of the workers in the ELC sector were employed in settings delivering the funded ELC entitlement** (see **Table A1**). To note that the figures cover all staff working in these settings and who will therefore be providing both entitlement and non-entitlement hours. This will particularly affect the figures for partner provider settings as currently the majority of the entitlement hours are delivered within local authority settings (which account for around 75% of total entitlement registrations). In addition, and as highlighted in the *Financial Review*, for those private and third sector providers who deliver the funded entitlement this accounts for, on average, around a quarter of their total revenue.

5. **Table A2** presents the number of staff FTEs in settings delivering the funded entitlement.

Table A1: Staff Headcount in settings providing funded entitlement

	Local authority settings	Partner provider settings	Total
Managers	1,073	1,158	2,231
Practitioners / care workers	9,735	9,244	18,979
Auxiliary and admin	633	735	1,368
Total	11,441	11,137	22,578

Source SSSC 2015

⁶ For example, a practitioner in a local authority setting works 27.5 hours per week on average, whilst practitioners in partner provider settings work 31.9 hours per week on average. We assume that a FTE is 35 hours per week.

Table A2: Staff FTE in settings providing funded entitlement

	Local authority settings	Partner provider settings	Total
Managers	972	1,138	2,110
Practitioners / care workers	7,649	8,425	16,074
Auxiliary and admin	380	441	821
Total	9,001	10,004	19,005

Source: SG estimates based on SSSC 2015

Drivers of the Overall Workforce Requirement

6. Our estimates of the overall additional workforce requirement are sensitive to a number of assumptions underpinning our model – in particular regarding the overall level of flexibility provided in local authority settings and uptake rates. In light of this we have presented the potential increase in the ELC workforce as a range in Table A3. **This suggests a total estimated additional workforce requirement (relative to 2015-16) of 8,000 to 11,000 workers (headcount) by 2020.**
7. We assume that the 900 additional managers posts are filled by practitioners upskilling by undertaking graduate level qualifications. As a result 900 additional practitioners will be required to provide backfill for these positions. Whilst we have included these 900 practitioners as part of the additional workforce requirement it is important to note that they are not new posts and will therefore not result in an increase in the overall ELC workforce.

Table A3: Estimated Additional ELC Workforce Requirement by 2020

Estimated additional staff required		
	Headcount	FTE
Managers	900	800
Practitioners (including backfill for new managers)	7,000-10,500	5,500 – 8,300
Total estimated additional staff requirement	7,900 – 11,400	6,300 – 9,100

8. Our modelling assumption is that the great majority of these workers will be required within local authority settings – and this would suggest that the local authority ELC practitioner workforce increases by around 65% to 100% compared to current levels.
9. However, there is a degree of uncertainty regarding the size of any workforce adjustment in the private and third sector. We currently assume that private and third sector providers maintain their share of entitlement hours (around 25% of the market). However, as there is likely to be a high degree of substitution of entitlement hours for currently paid for hours most providers will be able to absorb their additional entitlement hours without necessarily increasing their workforce (they just allocate a larger part of their capacity towards funded hours – assuming that they are paid at a sustainable rate).
10. It is also important to note that due to ongoing replacement demand within the sector (e.g. as workers leave the sector due to retirement, career changes, etc), which would occur regardless of the expansion, that the overall additional workforce requirement over the period to 2020 may be higher than the estimates set out in

paragraph 20. However, we do not have robust estimates of the scale of annual replacement demand in the sector⁷.

Local Authority Expansion Plans

11. The local authority expansion plans provide us with local level estimates of additional workforce requirements. Our initial analysis of the plans indicate that, in aggregate, local authorities are suggesting they require around 12,000 FTE additional workers by 2020 (all within LA settings). This is equivalent to around 15,000 additional workers (headcount).
12. However, the additional revenue requirements indicated by local authorities in their expansion plans are around 30% higher than our central estimates. This gap, reflects in large part, the differences in estimated workforce requirements. We need to interrogate some of these local estimates in more detail as there are substantial inconsistencies across authorities in the scale of workforce increases, which may reflect different assumptions over the capacity required to deliver more flexible ELC (and how much ELC will, on average, be delivered by each worker).
13. As these inconsistencies between authorities are challenged and addressed we would anticipate the overall additional workforce requirement from local authorities expansion plans to decline.

⁷ Experimental data from the SSSC estimated that staff retention rates in daycare of children services were 82.9% between 2013 and 2014 (90% in local authority settings and 78% in partner providers). However, it is not clear how much of this reflected movement within the sector (we know, for example, that staff often move from private or third sector settings to local authority settings).