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Maternity and the labour supply of NHS doctors and nurses



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Executive summary

More than three-quarters of all NHS employees, and 90% of registered nurses and midwives in England are women. Also, 48% of all doctors and dentists are women, and this rises to more than half for the under-50s. The majority of these women will become mothers during their careers: over the six-year period we observe, more than 17% of female nurses/midwives and doctors/dentists under the age of 50 go on maternity leave and, at any point in time, 3.7% of female doctors and dentists under the age of 50 and 3.4% of female nurses and midwives under the age of 50 are on maternity leave. The extent to which women can combine work in the NHS with motherhood has important implications for recruitment, retention and hours of work. Despite the implications of maternity and the NHS's response to it for workforce planning, efficiency and women's careers, there is little systematic, quantitative evidence on the labour supply of mothers with young children in the NHS.

In this briefing note, we use NHS payroll records from January 2014 to March 2020 to examine how maternity affects the overall labour supply, rates of retention and contracted hours of work of doctors and dentists, and of nurses and midwives. Our data include all those directly employed in the NHS in England in the acute (hospital) and community sectors but do not include those working in primary care.¹ We start by considering the overall impact of maternity on labour supply separately for doctors and dentists, and for nurses and midwives. We then explore the variation across trusts, trust type and specialty.

Our findings suggest that, within a given year, the reduction in hours of work due to female staff being on maternity leave, or working reduced hours after their return from maternity leave, is similar to the fall in labour supply from non-retention of women (women leaving the acute and community sectors).

Retention of female doctors and dentists and of nurses and midwives two years after going on maternity leave is, in fact, slightly better than for those who were not recently on maternity leave, and in line with other public sector workers. We find that the majority of women who go on maternity leave subsequently return to work part-time, or, as usually described in the NHS, less than full-time (LTFT). The number of hours women work thereafter remains remarkably flat until our data period ends, when the children from the first births in 2014 are six. There is strikingly large variation in the impact of maternity on labour supply and the

¹ We do observe trainee general practitioners, who are not yet in the primary care sector.

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distribution of hours for women returning from maternity leave across trusts. For doctors and dentists, there are substantial differences across specialties.

These findings have implications for workforce planners, NHS efficiency, and for understanding how motherhood affects the careers of women across the NHS.

Key findings

- 1 Between January 2014 and March 2020, 17.1% of nurses and midwives and 17.7% of female doctors and dentists aged under 50 working in the NHS hospital and community sector had at least one spell of maternity leave. In a given year, the reduction in the hours due to maternity leave and reduced hours in the years after maternity leave is similar to non-retention (leaving the sector).
- 2 More than 90% of nurses/midwives and doctors/dentists remain directly employed by the NHS in these sectors two years after going on maternity leave. Women are less likely to leave the NHS in the two years after starting maternity leave than the rest of their colleagues over the same period. Retention of nurses and midwives after maternity leave is similar to retention rates among other public sector workers after maternity leave.
- 3 Among both nurses/midwives and doctors/dentists, many mothers switch to working part-time after returning from maternity leave. Average contracted hours drop to 75% of full-time for nurses/midwives and 85% of full-time for doctors/dentists, mainly driven by switches to contracts of 60%–65%, or 80%. Only around one in four nurses/midwives and fewer than two in five doctors/dentists work full-time two years after going on maternity leave, compared to 84% of female nurses and midwives and 94% of female doctors and dentists four years before maternity leave. However, contracted hours of less than 50% of full-time hours are rare, and lower than in the rest of the public sector.
- 4 The move to part-time work following the birth of a child is long-lasting. On average, mothers who return to work part-time do not increase their hours for the whole period we observe (up to six years after birth). Their contracted

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hours remain flat even during the year after their youngest child reaches school age.

- 5 Following a spell of maternity leave, there is significant variation in hours worked by NHS trust. When trusts are ordered by the share of nurses and midwives working full-time one to three years after maternity leave, in a quarter of trusts the share was less than 20%. At the other end of the scale, in one-quarter of trusts, the share was at least 36%. The equivalent figures for doctors and dentists are higher, but with a similar gap between trusts, at 35% and 51%.
- 6 The impact of maternity on available full-time equivalent (FTE) doctors and dentists falls, the higher the share of male doctors and dentists within the specialty. Not only are there fewer women who could go on maternity leave in male-dominated specialties, including most surgical specialties and urology, but women in those specialties are also less likely to go on maternity leave, and return on higher hours if they do so, than the average female doctor or dentist. Conversely, the impact of maternity on available FTE doctors and dentists is bigger in many female-dominated specialties, such as general practice, and those related to community and public health, or sexual health. While these differences likely indicate some differences in the receptiveness of different specialties to flexible working, other reasons, such as which women choose different specialties, could also play a role.
- 7 More childcare places in on-site early-years childcare are not associated with more full-time work for nurses and midwives with children in the early-years age range, and in some areas the relationship is reversed – although this is unlikely to be causal.

1. Introduction

More than three-quarters of all NHS employees, and almost 90% of registered nurses and midwives in England are women. Also, 48% of all doctors and dentists are women, and this rises to more than half for the under-50s. The majority of these women will have children during their careers. The extent to which women are able to combine a career in the NHS with motherhood has important implications for recruitment, retention and hours of work. There is, however, little systematic, quantitative evidence on the labour supply (employment and hours) of women in the NHS after they have a child.

This briefing note uses NHS payroll records from England covering the period from January 2014 to March 2020 to examine the impact on labour supply of maternity leave, the rates of retention and the number of hours worked by NHS nurses and midwives and by doctors and dentists returning from maternity leave. These records cover the acute (hospital) and community sectors, but not primary care.² Medicine and Nursing/Midwifery differ in terms of time taken to train, the gender distribution of staff, and earnings. This allows us to compare how the choices women make vary with their profession, even within the same hospital. We supplement our analysis with evidence from the Quarterly Labour Force Survey (QLFS) to illustrate how nurses/midwives and doctors/dentists compare with women in the wider labour market. We do not consider aspects of flexible working, other than part-time – less than full-time (LTFT) – hours, as this information is not available in our data.

It is important to note that our analysis is limited to those who were on the NHS payroll when they became pregnant. There will be a group of women who choose to leave the NHS payroll prior to becoming pregnant, possibly in anticipation of motherhood, who we cannot study using these data.

There are at least three reasons why it is important to examine relationships between maternity and labour supply. The first is for workforce planning. Periods of maternity leave, retention after maternity leave, and the hours women work upon their return all have implications for the labour supply available to NHS employers. This is important for individual trusts or hospitals that need to manage staffing levels, but also for understanding the implications of more general NHS or government policies. For example, if the

² Secondary care includes trainee general practitioners, who will later go on to work in primary care (and exit the dataset).

government chose to increase the supply of nurses by providing additional training places, it would be possible to anticipate the reduction in labour supply when that cohort was expected to have children.

The second is that the terms that the NHS offers to mothers returning from maternity leave will affect the hours they choose to work and rates of retention, and therefore this has implications for NHS efficiency. Offering part-time contracts will allow some women to reduce their hours, which will leave shifts that need to be filled. However, not offering flexibility could lead to women leaving the sector, either after having a child, or before having a child in anticipation of the lack of flexibility. This may lead to a permanent loss of skilled professionals who are difficult to replace. The NHS currently has a staffing shortage, particularly in nursing (National Audit Office, 2020).³ Success in filling those vacancies is likely to require finding a balance between the needs of staff and the needs of NHS employers.

Women having children and changing their hours and working patterns of course has implications not just for the NHS but also for the rest of the labour market. NHS employers such as hospital trusts do however face additional challenges due to the long lags in training clinical staff and limited pay flexibility. When combined with an overall shortage of nurses, this makes it difficult, at least in the short term, to recruit staff to cover any reduction in labour supply.

The third motivation is to understand the impact that motherhood has on women's careers. This matters for reasons of gender equality within the NHS, but it also has implications for the wider economy. The NHS is the largest single employer in the UK and, as such, the terms it offers its employees could influence other parts of the labour market. Existing work has shown that, for women, a degree in medicine offers high returns in absolute terms and the highest returns for a degree where the majority of graduates are female. Nursing offers returns that are more modest but almost universally positive and are particularly good for women with low or mid-level attainment at school (Belfield et al, 2018a, 2018b; Britton et al., 2020).

While the success of women in much of the health-care sector, and of the NHS in offering many rewarding careers, is to be celebrated, gaps in earnings and promotions remain. In December 2020, an independent review into gender pay gaps in medicine concluded that women are under-represented at the highest paid positions and grades and in the highest paid

³ NHS Digital estimates that in the last quarter of 2019 (i.e. before the COVID-19 pandemic), 10.7% of registered nursing jobs in the NHS were vacant, on a FTE basis (NHS Digital, 2020).

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specialties (Dacre et al., 2020). Periods of leave and LTFT, the structure of pay scales and additions to basic pay that are earned by more men than women⁴ were among the contributing factors. Women remain under-represented in most surgical specialties. Even in nursing, which is an extremely female-dominated profession, the share of women in the highest grades of nursing is lower than the share of women in nursing overall (Punshon et al., 2019).

In Section 2, we describe the payroll data, and we document the size of the drop in labour supply observed through and following maternity, including maternity leave, non-retention and reductions in hours. Then, in Section 3, we examine each component in turn and compare with the wider labour market. In Section 4, we examine the variation in the relationship between maternity and labour supply across trusts.

⁴ These include Clinical Excellence awards, performance-related payments, recruitment and retention premia, overtime or additional working hours and shift pay. For the full list, see Dacre et al. (2020, p. 206).

2. NHS payroll data and maternity pay entitlement

The Electronic Staff Record (ESR) contains detailed monthly payroll information on directly employed staff in the NHS acute and community sectors, including pay, hours, role, and some personal characteristics. It does not include those employed in the primary care sector. In our analysis of nurses/midwives, we consider only registered nurses and midwives, not health visitors, nursing associates, and other more junior nursing staff.⁵

Midwives and nurses are studied together because they are in the same NHS staff group, and staff members transition between both types of roles.⁶ Our data run from January 2014⁷ to March 2020, or until staff leave the NHS sectors covered by the ESR (hospital and community care).⁸ We drop a small group of staff working for organisations other than trusts (e.g. Clinical Commissioning Groups, Strategic and Special Health Authorities).

We derive information on maternity leaves from the associated occupational absence payments. These are paid following a birth or adoption, subject to some eligibility conditions (see Box 2.1). We cannot identify maternities that commenced before January 2014 and therefore we do not know whether women in our data are giving birth to or adopting their first child or a subsequent child. Men are entitled to two weeks' full pay when their child is born or adopted, and the statutory entitlement to shared parental leave. Neither is recorded in the ESR. We are therefore unable to observe when men become fathers.⁹

Our data are at the monthly level, and we observe most women who go on maternity leave receiving some NHS maternity pay during a period of seven months. We do not use

⁵ This means that for nurses and midwives, we only include those in Agenda for Change Bands 5 and above. For doctors, we include qualified doctors from foundation stage onwards, including dentists and trainee general practitioners (who will exit the secondary care sector, and our data, when they start working in GP practices).

⁶ The ESR does not give reliable information on education before joining the NHS, making it impossible to distinguish nurse-trained from direct-entry midwives.

⁷ This means that births are identifiable from March 2014.

⁸ Individuals who have an assignment recorded in the ESR but receive no pay of any type (including maternity pay) and record no hours either contracted or worked are deemed to have left.

⁹ For ease of exposition, this briefing note may sometimes refer to women giving birth, but some maternities will be the result of adoptions. We are unable to consider adoptions or men taking paternity leave in our quantitative analyses due to insufficient information and limited sample size. The ESR records only two genders.

observations with zero pay of any type (including maternity pay) and zero contracted *and* worked hours. The distinction between contracted and worked hours is important for our application, because maternity leave is usually split into a paid and an unpaid portion. Women who take a full year of formal maternity leave will be recorded with some non-zero contracted hours (because they are still employed, they are just on leave), though with zero earnings and zero hours worked, and they are therefore still recorded as being on maternity leave. Any staff members who take a longer, less formal family leave – even if they intend to return to the NHS at some point – drop out of our data until they return, because we cannot distinguish between planned, temporary family-related absences and other exits.

Box 2.1. NHS maternity leave entitlement and flexible working policy

All employees in the UK are entitled to 52 weeks of maternity leave. For those meeting the eligibility criteria, Statutory Maternity Pay (SMP) is paid for up to 39 weeks: 90% of pre-tax pay for the first six weeks, and a flat rate (£151.97 in 2021/22, or 90% of average weekly earnings if that is lower) for the next 33 weeks.¹⁰ The NHS offers eligible employees who give birth an enhanced scheme of eight weeks of full pay, 18 weeks of half pay plus SMP or maternity allowance, and a further 13 weeks of SMP. The remaining 13 weeks of leave – if taken – are unpaid.

NHS workers on maternity leave continue to accrue annual leave, which they may use before or after returning to work. They can also be promoted while on maternity leave.

In the period we consider, employees had a statutory right to request flexible working once in a 12-month period. Women returning from maternity leave are among those more likely to make such requests. Employers must be able to justify refusing such requests. In the NHS, decisions are made locally, through a staff member's manager or department rather than through a central process.

Since the 13 September 2021, NHS staff members are able to make unlimited requests for flexible working, instead of one per year. Employees no longer have to give specific reasons for their request, and can make requests from the start of their employment.

Throughout, we use information on both contracted hours, and hours worked, which can vary due to factors such as annual leave. When a person is on maternity leave their contracted hours generally do not change, but their hours worked drop to zero. Throughout this briefing note, we use the terms 'part-time' and 'LTFT' interchangeably. The former is more common

¹⁰ To be eligible for SMP, an employee must earn more than £120 a week and must have worked for the same employer continuously for 26 weeks prior to the 15th week before their due date; those not eligible for SMP may be eligible for Maternity Allowance, which does not include the higher rate of pay in the first six weeks.

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on the wider labour market and familiar to most audiences. The latter term is commonly used instead of ‘part-time’ in the NHS.

More information on our data is given in Tables 2.1 and 2.2. As Table 2.1 describes, our data include the payroll records of almost 560,000 nurses and midwives, of whom about 373,000 are women under the age of 50, and more than 207,000 doctors and dentists, of whom just under 88,000 are women under the age of 50. The share of female doctors and dentists who are under 50 (88%) is greater than the share of male doctors and dentists who are under 50 (79%), reflecting a larger share of women in younger cohorts of doctors/dentists. The share of female doctors/dentists aged under 50 is also greater than the share of female nurses/midwives who are under 50 (77%). This is consistent with concerns about an ageing nursing workforce.¹¹ An older nursing workforce will tend to reduce the numbers going on maternity leave, but increase rates of retirement and reduced hours in the lead up to retirement.

Table 2.1. NHS payroll records: staff numbers from January 2014 to March 2020

	Nurses/midwives	Doctors/dentists
Women under 50	373,368	87,892
All women	481,137	99,860
Men under 50	107,769	85,761
All men	119,651	109,233

Note: Staff members are counted as under the age of 50 if they were aged under 50 at any point in the period covered by the data.

¹¹ See the article ‘Ageing workforce, or skills and experience the NHS can’t afford to lose?’ by J. Buchan in the *Nursing Standard*, available online at <https://rcni.com/nursing-standard/opinion/comment/ageing-workforce-or-skills-and-experience-nhs-cant-afford-to-lose-172476/>.

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Where we examine the impact of maternity leave on individual retention and hours, we only use the sample of women under the age of 50. However, when we document the overall workforce impact of maternity leave on NHS acute and community hospital trusts, we use the full dataset. This is because it is more informative to compare women who go on maternity leave with other women of childbearing age; however, from a workforce planning point of view, it is the impact on total hours worked that will be most relevant, regardless of staff gender and age.

Table 2.2 gives summary statistics on maternity leave for women under the age of 50. Over the six-year period we observe, 17.1% of all nurses/midwives and 17.7% of all doctors/dentists under the age of 50 in our data are observed on maternity leave at some point. In any given month, 3.4% of nurses/midwives and 3.6% of doctors/dentists under the age of 50 in our data are on maternity leave. The median length of paid maternity leave is seven months for both groups, which is the period for which they are entitled to enhanced maternity pay. The median length of total maternity leave is ten months. The median age at which maternity leave is taken is 32 for nurses/midwives and 34 for doctors/dentists.

Table 2.2. NHS payroll records: maternity statistics for women under the age of 50

Women under 50	Nurses/midwives	Doctors/dentists
Total monthly observations	17,318,769	3,703,223
Number of staff members (1)	384,188	87,892
Number of staff members ever observed on maternity leave	65,741	15,545
...as per cent of (1)	17.1%	17.7%
Number of maternity leave spells	82,486	20,065
Mean % on paid maternity leave per month	3.4%	3.6%
Median length of each maternity leave	10 months (7 paid)	10 months (7 paid)
Median age when starting maternity leave	31.9 years	33.8 years

Note: Maternity leave is defined as a month with less than 10% FTE hours worked, within three years of the start of maternity pay, while contracted hours and/or total pay across all categories including maternity pay are strictly positive (a person whose total hours and pay drop to zero is considered to have left). Paid maternity leave is defined the same, but with positive maternity (occupation absence) pay.

3. Maternity and labour supply

In this section we consider how the labour supply of doctors/dentists and nurses/midwives changes after they go on maternity leave. We start by quantifying the overall impact, which is determined by the number of women who take maternity leave, the length of that leave, and retention and hours of work after maternity leave ends. We then focus on retention and hours of work post-maternity leave and provide some evidence on how this compares with the rest of the labour market.

What is the overall impact of nurses' and doctors' maternity on labour supply?

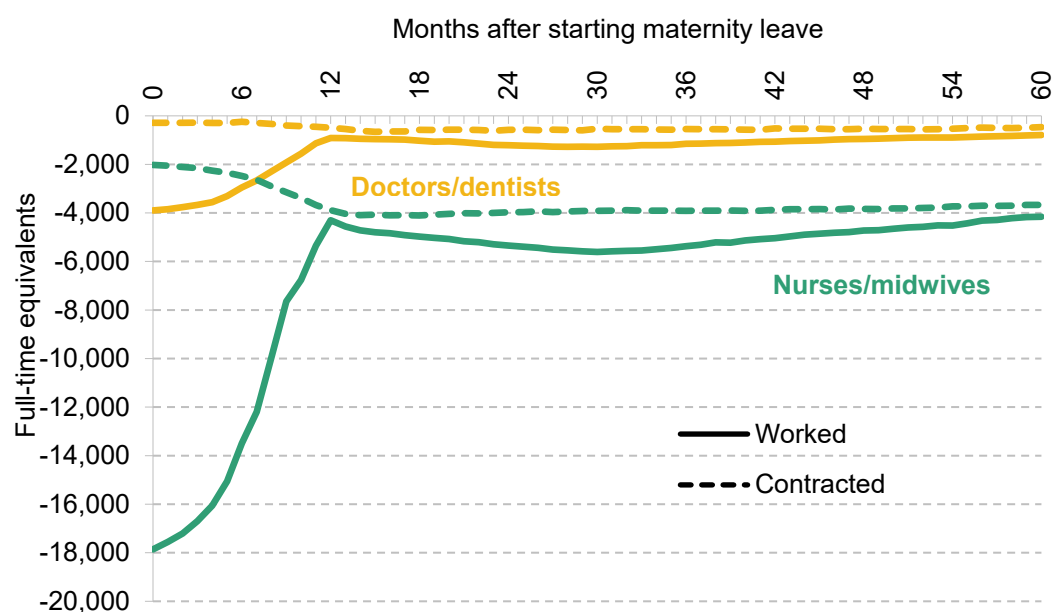
In our data, there are around 82,000 nurse/midwife maternities and 20,000 doctor/dentist maternities.¹² We quantify the aggregate impact of maternity on labour supply, and how it changes over time in two ways: The first method aims to track the total impact on labour supply in the years after we first observe mothers going on maternity leave, following a cohort of mothers. This approach documents how the impact of maternity on the workforce changes as the children born to staff get older. This is important for long-run workforce planning, and to understand how changes in the age profile of staff through, for example, increased domestic training places might affect labour supply in the future. To do this, we track the hours worked of the cohort who went on maternity leave in 2014 (18,868 nurses/midwives and 3,974 doctors/dentists) over time, from the start of their maternity leave until the end of our data period in 2020. The aggregate impact on FTE staff is given in Figure 3.1, and tracks adjustments in hours over time.

The greatest impact is in the month the child is born, with a drop of close to 4,000 FTE doctors/dentists and 18,000 FTE nurses/midwives. The aggregate impact then falls as women return from maternity leave over the following 12 months, but there remains a fall in FTE, as two-thirds of all women in our dataset who return (70% of nurses and midwives and 67% of

¹² Analysis presenting results for just midwives (excluding nurses) is presented in the Appendix.

doctors and dentists¹³) reduce their contracted hours. Among those women who were working full-time before maternity leave – who are less likely to have had children prior to our observation window – the share rises to 74% of nurses and midwives and 73% of doctors and dentists. On average, two years after maternity leave, nurses and midwives have reduced their contracted hours by 19%, and doctors and dentists by 18% of full-time, relative to two years before maternity leave.

Figure 3.1. Aggregate shortfall in nurse/midwife and doctor/dentist FTEs over time (cohort of women who went on maternity leave in 2014)



Note: Difference between actual FTE hours worked and hours worked if every staff member going on maternity leave who did not leave the data were working full-time.

The shortfall once again increases slightly 24 to 36 months after maternity leave, when it is not uncommon for mothers to go back on maternity leave with a subsequent child.¹⁴ Towards the end of our observation window, five years after first going on maternity leave, the reduction in FTE staff from those who went on maternity leave in 2014 stood at over 4,000 FTE nurses/midwives and 750 FTE doctors/dentists. This means that the impact on staffing levels five years later is around a fifth as large as the short-term impact of the maternity leave itself.

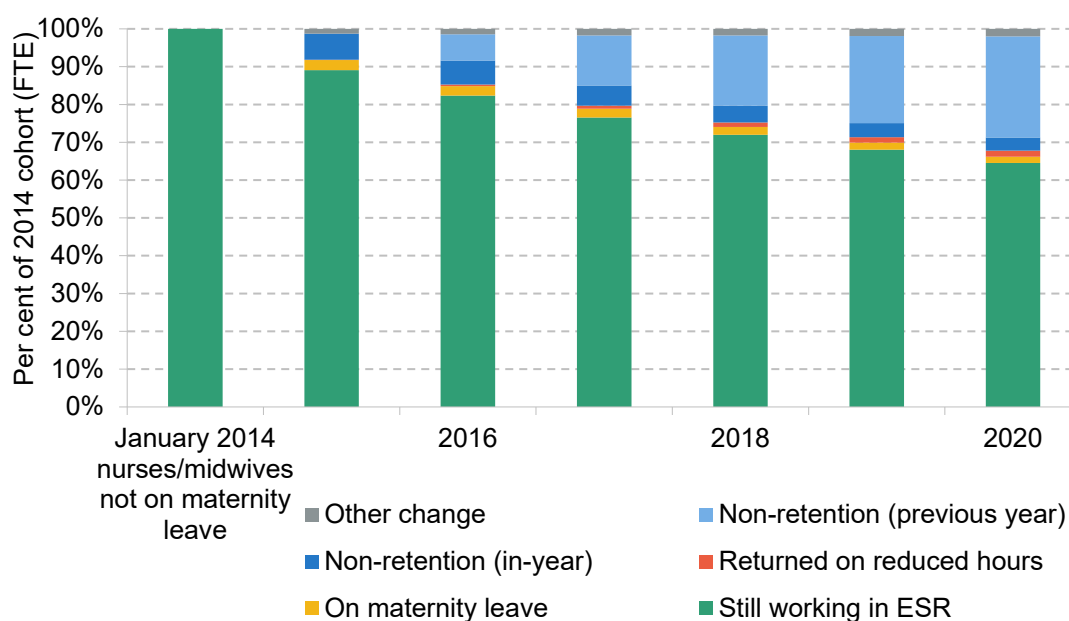
¹³ Based on average contracted hours three to one years before, compared to one to three years after, first receipt of maternity pay.

¹⁴ Around one in four women whom we observe on one maternity leave go on to have a second maternity leave within our observation window (24% of nurses/midwives and 27% of doctors/dentists). Because we do not observe births before 2014 or after March 2020, this is a subset of the women who have, or will go on to have, multiple maternity leaves while working in the NHS acute and community sectors.

Our second method compares the loss of labour supply from maternity leave to non-retention for other reasons, following a cohort of staff not on maternity leave at the start of our records in January 2014. In each subsequent January in our records, we record the reduction in hours for those who are on maternity leave, the reduction in hours for those who are working fewer hours in than January 2014 after coming back from maternity leave, and the reduction in hours from non-retention for other reasons. This provides important context for the relative magnitude of the reduction in labour supply through maternity. It is also important for those who need to schedule shift rotas, as both staff on maternity leave and staff leaving their jobs permanently create unfilled shifts that need to be filled.

For this method, we take all nurses/midwives and doctors/dentists in the ESR who were not on maternity leave in January 2014 and we record their status each subsequent January. We then calculate the reduction in FTE in that month owing to staff on maternity leave and staff on reduced hours following maternity leave, and we compare this with the reduction due to staff who have left the ESR (for any reason). The results for nurses/midwives are shown in Figure 3.2.

Figure 3.2. FTE shortfall compared with non-retention: 2014 cohort of nurses/midwives



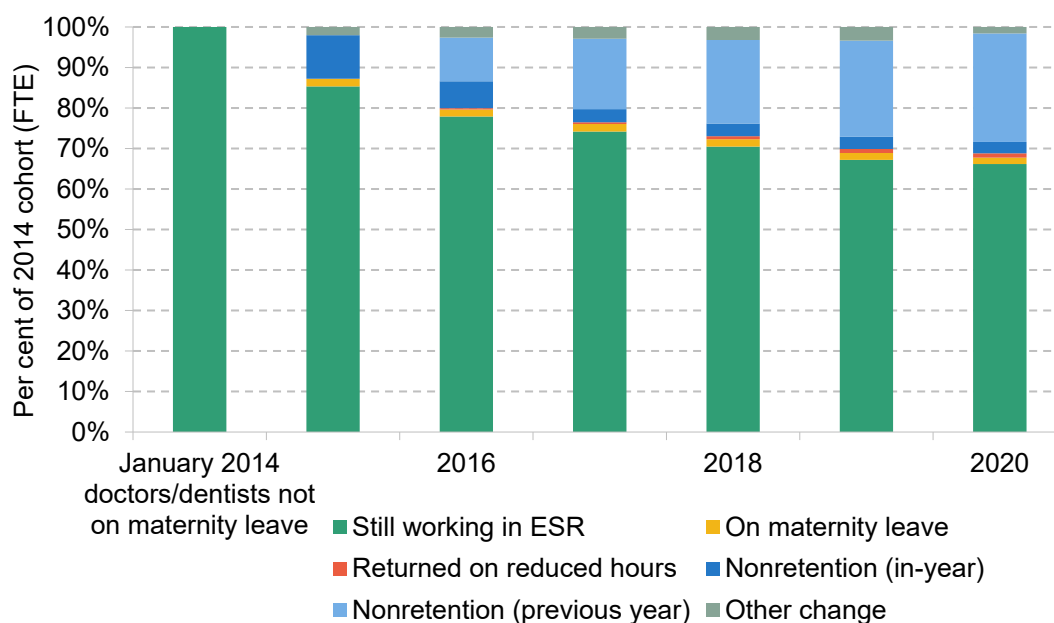
Note: The leftmost bar shows FTE hours worked of nurses and midwives not receiving maternity pay in January 2014 (including men and those over 50); subsequent bars show FTE 'loss' in January of each subsequent year relative to January 2014, from non-retention (any nurse/midwife no longer appearing in the data), from nurses/midwives on maternity leave (either receiving maternity pay or within three years of the start of maternity pay *and* not working more than 10% FTE), and nurses/midwives whom we have observed on maternity leave and who have returned on lower hours than in 2014.

The green bar for January 2014 shows the total number of FTE nurses recorded in the ESR in January 2014 (all ages and both men and women). In January 2015, more than 20,000 FTE-weighted nurses/midwives (6.9%) were no longer in ESR and the equivalent of just over 8,000 FTE nurses/midwives (2.7%) were on maternity leave. There was only a reduction of 0.1% in FTE from reduced hours after maternity leave, as our records contain only a small number of women who took maternity leave after January 2014 and had already returned to work in January 2015. Over time, the annual loss of FTE staff from women on maternity leave remains stable, but the FTE loss from women on reduced hours increases as more women from the cohort have children and then return to work. The loss in FTE staff from non-retention (for any reason) fluctuates from year to year but is cumulative. Whereas most women who go on maternity leave return to work, most people who leave the ESR do not return.

This figure provides two important points to note. The first is that, in any given year, the impact of reductions in FTE from maternity leave, and reductions in hours after maternity leave is up to 95% of the impact of non-retention. This means that for those organising shift rotas, the number of shifts that need to be filled because someone is on maternity leave, or has returned on reduced hours, can reach a magnitude close to the number that need to be filled because staff members have left that year. The FTE loss from maternity leave is relatively stable over time, whereas non-retention varies from year to year, which should make FTE loss through maternity easier to plan for.

The second point is that over time, the impact of other non-retention is much larger because most people who leave the ESR do not return, whereas most nurses/midwives who go on maternity leave do return, at least for a while. Of nurses/midwives employed in January 2014, 35% were no longer in the ESR in January 2020. Looking at longer-run measures of labour supply or thinking about the hours women work over the course of their career, non-retention is a far bigger source of lost hours than maternity.

Figure 3.3 shows the same analysis for doctors and dentists. As in Figure 3.2, the reduction in FTE doctors/dentists from maternity leave is stable over time. Non-retention is considerably larger in 2015 and 2016. Underlying this are different retention dynamics for doctors and dentists on different contract types and at different levels of seniority. In the period 2017–19, the reduction in FTE doctors/dentists from maternity leave grows to be of a similar magnitude to non-retention. Again, over time, the impact of non-retention for other reasons is bigger, as most women return to work after maternity leave, albeit on reduced hours.

Figure 3.3. FTE shortfall compared with non-retention, 2014 cohort of doctors/dentists

Note: The leftmost bar shows FTE hours worked of doctors/dentists not receiving maternity pay in January 2014 (including men and those over 50); subsequent bars show FTE 'loss' in January of each subsequent year relative to January 2014, from non-retention, from maternity leave, from doctors/dentists whom we have observed on maternity leave and who have returned on lower hours than in 2014, and from reductions in hours for other reasons.

Retention in the NHS hospital sector

Retention of nurses/midwives and doctors/dentists in the sectors covered by our data (acute and community care) is generally good, and better than retention of other nurses/midwives and doctors/dentists. Two years after going on maternity leave, 93% of nurses and midwives are still working in the NHS acute and community sector. This compares to 91% of female nurses and midwives under the age of 50 after any other two-year period, and 90% among women we never observe on maternity leave.¹⁵ The differences are small but statistically significant.¹⁶

¹⁵ Some of those who leave the sector without ever having been on maternity leave may do so *in anticipation* of future pregnancies.

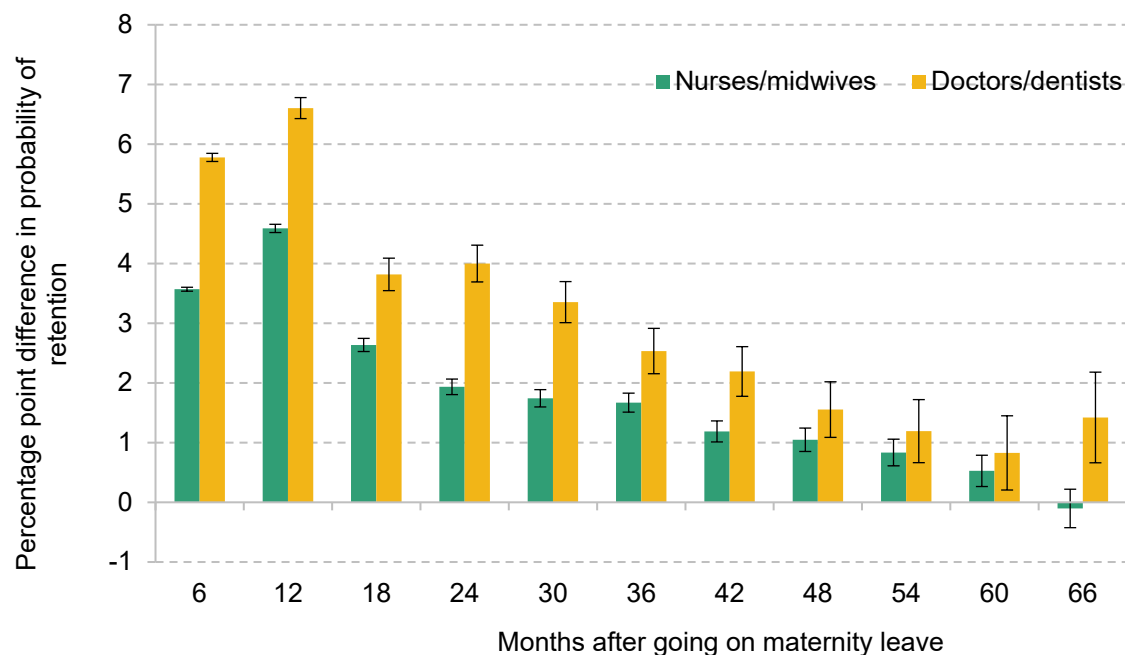
¹⁶ Nurses and midwives who go on maternity leave differ from other nurses and midwives in terms of many characteristics that are also related to retention, including their age, tenure, ethnicity, geographical region, and type of trust. However, even adjusting for all these factors, the positive difference in two-year retention after maternity leave, as opposed to any other moment in time, remains close to the raw figure of 2%.

Among doctors and dentists, 91% of women who go on maternity leave are still working in the NHS acute and community sectors two years later. As with nurses and midwives, this is more than the 88% who remain after any other two-year period on average.

Figure 3.4 shows the difference in percentage points of the probability that a woman returning from maternity leave remains in the acute and community sector, by months since maternity leave began, compared with women of the same age who did not go on maternity leave over the same period. Retention of women who go on maternity leave is better than that of other women of the same age for five years after their leave begins. At the edge of our sample – five and a half years after going on maternity leave – the effect fades out, but only for nurses/midwives, not for doctors/dentists.

It is also important to note that women make decisions about their career years before they have children and, of course, children may have been planned long before they arrive. We therefore cannot rule out women moving to other sectors, such as primary care, or other occupations, *before* going on maternity leave, due to concerns about combining motherhood with working in sectors covered by the ESR.

Figure 3.4. Retention post-maternity leave conditional on age



Note: Coefficients (columns) and standard errors (error bars) on a dummy for going on maternity leave at time zero, from a linear probability model of retention conditioning on a linear and quadratic term in age. Standard errors clustered at the person level. Estimation on records of women under 50 who were present in the ESR in 2014.

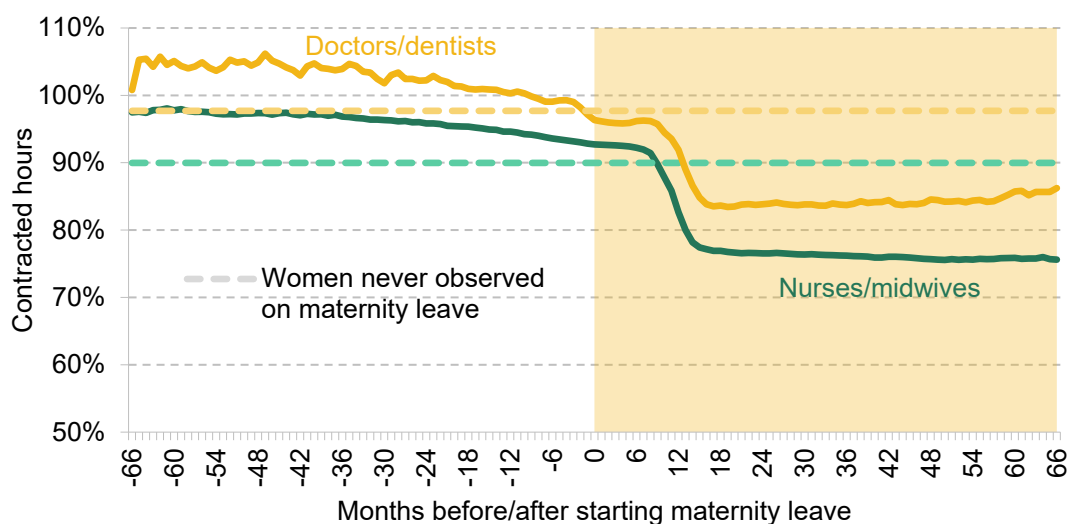
Less than full-time work

While retention after maternity leave is generally good, large shares of both doctors/dentists and nurses/midwives reduce their contracted hours upon returning from maternity leave. Five years before maternity leave, average contracted hours are 98% of full-time for nurses and midwives, and actually above 100% of full-time for doctors and dentists (this could be split across multiple assignments).

Figure 3.5 shows how this starts to reduce gradually in the years before maternity leave. This is likely to do with some of the births in the earlier part of our data period – where women are entering our dataset who reduced their hours after coming back from a maternity leave prior to January 2014, before going on a subsequent maternity leave in the period covered by our data. Contracted hours then drop very sharply for both occupations after returning from maternity leave. 15 months after going on maternity leave, average contracted hours are 77% of full-time for nurses and midwives, and 85% for doctors and dentists.

For those where we observe a second period of maternity leave, contracted hours fall again when women return to work. However, the reduction in average hours after the second maternity leave is less than half of the reduction that occurs after the first maternity leave for nurses/midwives, and less than a quarter for doctors/dentists.

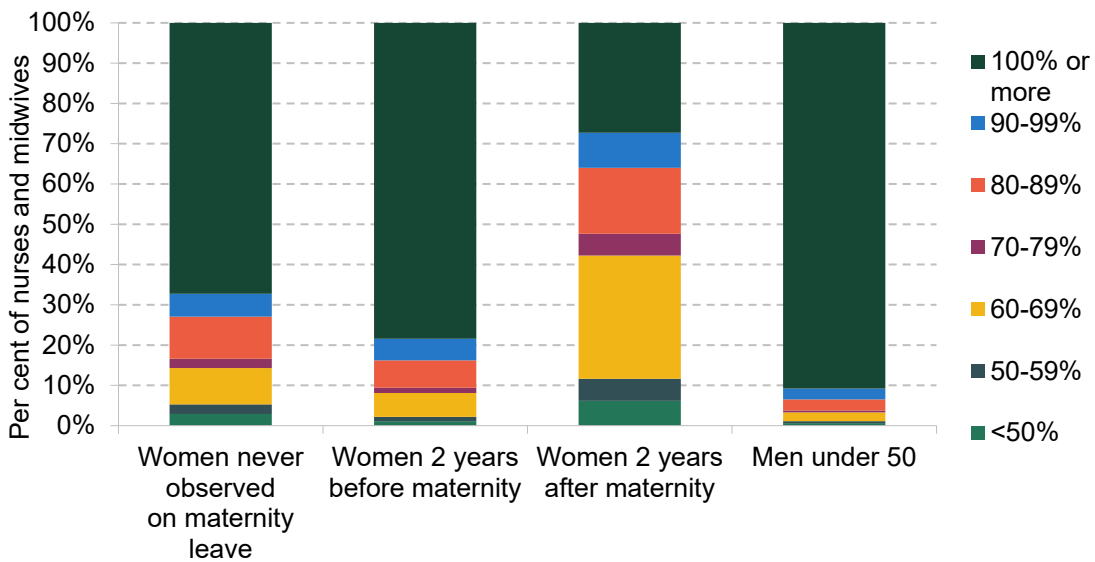
Figure 3.5. Contracted hours before and after maternity leave for women under 50



Note: Time relative to first observed maternity leave, conditional on remaining in the ESR data. Contracted hours in non-bank assignments shown for nurses and midwives. Excludes hours of more than 200% of full-time. The figure also excludes those who were on maternity leave in January 2014 because we do not know when their maternity leave started.

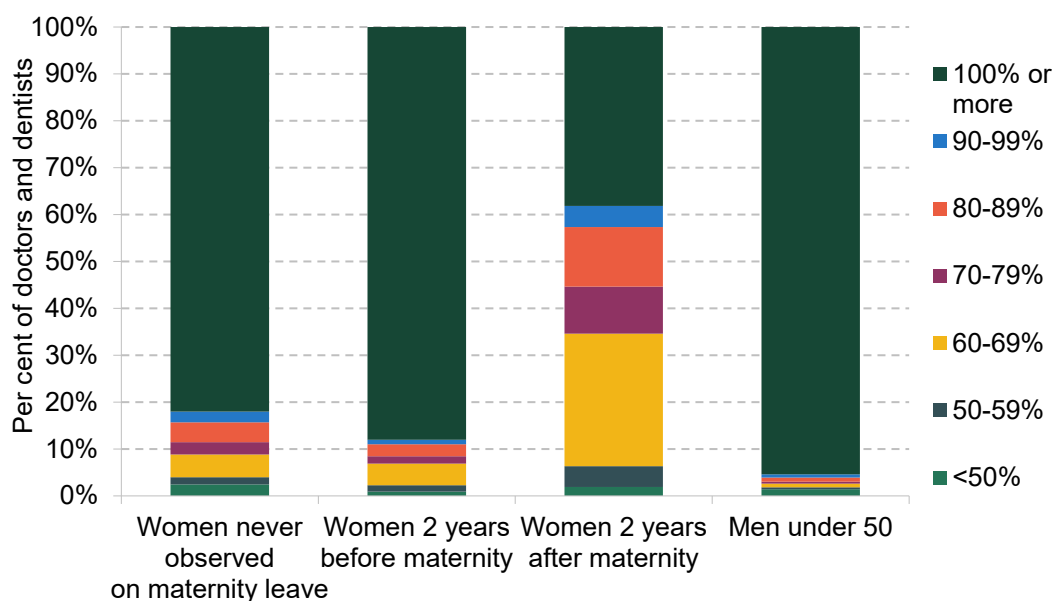
Looking beyond the average, Figures 3.6 and 3.7 show the distribution of contracted hours before and after maternity leave for nurses/midwives and doctors/dentists under 50.¹⁷ For both staff groups, there are large shifts away from full-time work. Two years after maternity leave, only just over one in four nurses/midwives and fewer than two in five doctors/dentists work full-time. The most common types of LTFT contracts are around 60% and around 80% of full-time. Working less than 60% is relatively rare, with only 12% of nurses and midwives and 6% of doctors and dentists doing so two years after maternity leave, and almost none before.

Figure 3.6. The distribution of contracted hours for nurses and midwives under 50 (% of FTE)



Note: Contracted hours in non-bank assignments, restricted to nurses and midwives under 50 with strictly positive contracted hours.

¹⁷ Appendix A2 presents the same results separately for midwives, where hours of work after maternity leave are on average lower than for nurses.

Figure 3.7. The distribution of contracted hours for doctors and dentists under 50 (% of FTE)

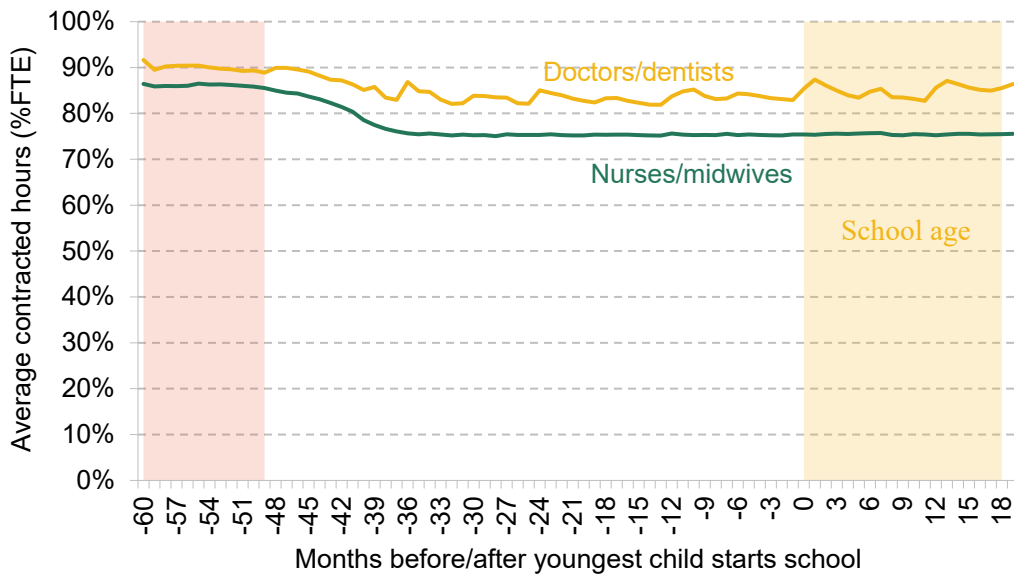
Note: Contracted hours in all assignments in a non-bank contract type, restricted to doctors and dentists under 50 with strictly positive contracted hours.

In contrast to women, nearly all men under the age of 50 (95% of them among doctors and dentists and 91% among nurses and midwives) work full-time, or even hold multiple assignments adding up to more than 100% of full-time.¹⁸ There are very few instances of men receiving paternity pay recorded in the ESR. It is therefore not possible to compare the hours of mothers and fathers in the months and years after babies are born. However, the high rate of full-time working for men under 50 is consistent with fathers reducing their hours less than mothers after the initial period of maternity (and paternity) leave is over.

Contracted hours are very stable for the whole period after maternity leave which we observe – six years for the earliest births in our records. For births up to and including August 2015, we observe mothers' hours when children reach school-starting age in September 2018 or 2019. Perhaps surprisingly, Figure 3.8 shows that we do not observe any increase in average contracted hours in the months that follow, for either doctors and dentists (whose average hours fluctuate more month-on-month because they are a smaller group) or nurses and midwives.

¹⁸ 1.4% of male doctors and dentists under 50 hold small part-time assignments of less than 50% of full-time. These assignments are most likely not their main occupation and are supplemented by, for example, work in private-sector healthcare.

Figure 3.8. Average contracted hours as a percentage of FTE by estimated month before and after a woman's youngest child starts school



Note: Births are assumed to occur in the second month of maternity pay receipt (which is usually the first month that is fully spent on maternity leave, i.e. where basic earnings drop to zero). The figure excludes those who were already on maternity leave in January 2014, because the start of leave is then unobserved.

How do nurses/midwives and doctors/dentists compare with the wider labour market?

It is hard to compare our results directly with the rest of the labour market because data of similar detail and quality to the ESR are not easily available for other sectors, but the Quarterly Labour Force Survey (QLFS) helps provide some insights. The QLFS is the UK's largest household survey, which provides official employment and unemployment statistics. Households are interviewed for five successive quarters, making it possible to observe an individual's changes in employment status and earnings over a period of 15 months. A single quarter of the QLFS provides a cross-section of the UK labour market at a particular point in time.

We start by pooling the five quarterly panel surveys that commenced in years 2014 to 2019, which provide information on the labour market outcomes of respondents for each of the five quarters they are surveyed. We then consider the outcomes of those women who were ever recorded as being on maternity leave from their job during the five waves but were not on maternity leave in the final wave. This gives a sample of 693 women. Two-thirds of these women have a youngest child aged one, and 24% have a youngest child aged under one.

Of these women, 88% are actively employed in the last wave of the survey. This increases to 94% for women who worked in the public sector in the first wave they responded to the survey. We find that 87% of nurses and midwives and 90% of doctors and dentists remain in the ESR two years after maternity leave, but some of those who leave are likely to be working elsewhere rather than inactive. This suggests that retention in the NHS is broadly in line with the rest of the public sector. As already noted, we do not observe in either the ESR or the QLFS whether some women changed their jobs before becoming pregnant because they believed it more compatible with pregnancy and motherhood. Therefore, high levels of retention among women who chose to remain in the acute and community sector do not necessarily mean that the expectation of having children does not affect retention.

We next pool single quarter data from the QLFS from 2014 to 2019 to provide us with a larger sample to look at differences between industries. We restrict our sample to women aged 18–49 who have a youngest child aged 2, which unlike the ESR includes women who were not employed (and therefore not on maternity leave) when they had their child. Of this sample, 70% of women were in continuous employment for more than 24 months, and 63% were employed for more than 36 months (therefore prior to their youngest child’s birth). Rates of continuous employment are greater for those employed in the public sector: 79% of public sector employees with a youngest child aged 2 had been continuously employed for 24 months, with 74% continuously employed for 36 months. This compares to 68% and 60% in the private sector.

The limited sample size means we cannot look directly at nurses/midwives and doctors/dentists in the QLFS. We can however compare those employed in the ‘human health activities’ division to other types of occupation.¹⁹ When doing so, retention of those working in ‘human health activities’ seems relatively high. Of those women in employment with a youngest child aged 2, 8% work in human health. Of those who left their last job due to family commitments, 5% worked in human health. This compares with education, which accounts for 10% of employed women with children aged 2 but 11% of those who gave up their last job for family reasons. This suggestive evidence supports our analysis of the ESR, which points to good retention rates.

¹⁹ Human health activities employed 5.7% of all those working and aged 18-49 in our sample. This includes 8.5% of all women in this age group and 2.7% of all men. The division includes ‘hospital activities’, ‘medical and dental practice acts’ and ‘other human health activities’. Two-thirds of those with nursing qualifications work in this division

Hours

To illustrate how the hours of nurses/midwives and doctors/dentists two years after maternity leave compare with those in the wider labour market, we compare them with the working patterns of women who have a youngest child aged 2 in the QLFS.

Table 3.1 summarises the mean hours and distribution of FTE hours of work for employees with a youngest child aged 2 in both the QLFS and ESR. The first three columns show the distribution for public sector, private sector and all workers from the QLFS. The final two columns provide the same statistics from our payroll records. The mean hours of doctors/dentists and nurses/midwives with a youngest child aged 2 are very similar to the rest of the public sector. The distribution of FTE staff is however very different. Only 14% of public sector workers work less than 50% of full-time, compared to 29% of private sector workers. The share of NHS doctors/dentists and nurses/midwives with such contracts is even lower, at 2% and 7% respectively. In the QLFS, public sector workers with a youngest child aged 2 are more likely to work full-time (43%) than private sector workers (36%). However, rates of full-time working are lower in the NHS: just 23% of nurses/midwives and 36% of doctors/dentists work full-time when their youngest child is 2.

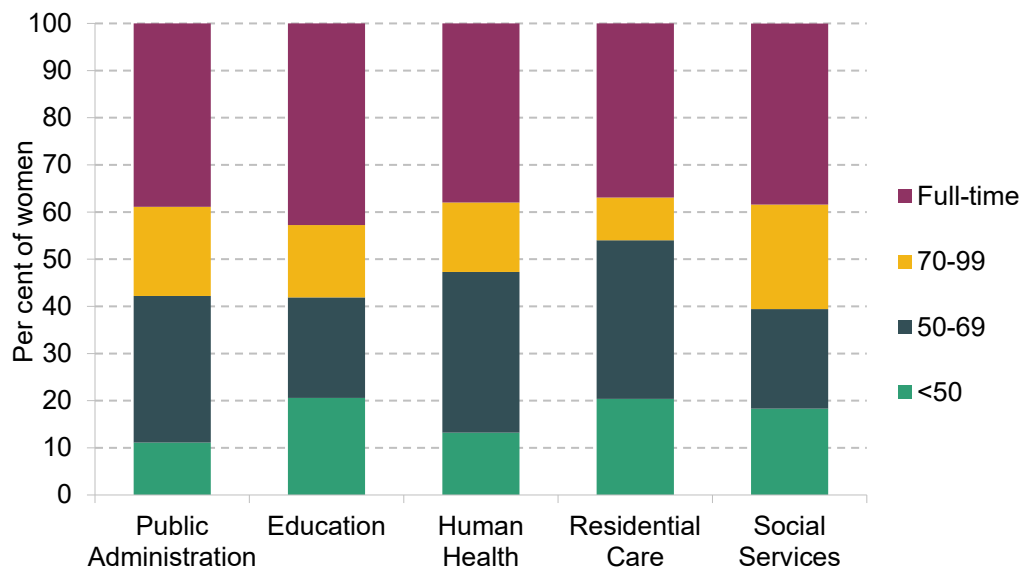
Table 3.1. Hours and estimated per cent of FTE for women whose youngest child is aged 2

	Labour Force Survey			Electronic Staff Record	
	Private sector	Public sector	All	Nurses/ midwives	Doctors/ dentists
Hours (mean)	26	28	26	28	30
Estimated FTE (mean)	0.71	0.78	0.73	0.77	0.84
FTE (% of women)					
<0.5	28.7	14.0	24.3	7	2
0.50–0.69	22.8	27.1	24.2	36	31
0.7–0.99	12.2	16.3	13.4	34	31
Full-time	36.3	42.6	38.2	23	36
Observations	10,432	4,535	14,967	31,934	6,945

Note: QLFS 2014–19. Women aged 18–49, who have a youngest child aged 2. FTE estimated by using average full-time hours in the same division for women without children. Our sample is restricted to those with positive contracted hours, showing hours worked conditional on these being greater than zero in the first row and FTE contracted hours for all other rows, for women whose youngest child was born 24–35 months ago, averaged first over months and then over women. The figures do not sum due to rounding.

The difference between public and private sector hours is partly explained by differences in the industry composition of the two sectors. Samples are not large enough to compare doctors/dentists and nurses/midwives with other professionals within the QLFS. We can, however, compare the distribution of hours of women employed in ‘human health’ with those in other divisions of the public administration, health and education sector. Figure 3.9 shows that those employed in human health and public administration both have very low shares of women working less than 50% of full-time. The share of women working full-time is similar to those in the other four industries. The distribution of hours for women working in human health looks in line with that observed in the ESR data.

Figure 3.9. FTE composition of women employed in public administration, health and education who have a youngest child aged 2



Note: QLFS 2014–19. Women aged 18–49, who have a youngest child aged 2. FTE estimated by using average full-time hours in the same Standard Industry Classification (SIC) division for women without children.

What these data do not tell us is why the distribution of hours in the NHS looks different to the rest of the labour market. It could be that a lot of mothers with young children would like work less than 50% FTE and the NHS is not offering that flexibility. Alternatively, it could be that employees of other organisations would like to work more than 50% – but in a more flexible way – and that the NHS is better at doing that. There is however strong evidence that at least some NHS staff would like additional flexibility. As of September 2021, NHS workers have new rights to request flexible working, following an agreement between unions and employers.²⁰ There have been many claims that a lack of flexible working has contributed to the staffing difficulties that the NHS has faced in recent years.²¹

If contractual inflexibility does play some role in the low rate of contracts of less than 50% in the NHS, the impact of offering contracts with fewer hours would have an ambiguous impact on labour supply. On the one hand, some may choose to work fewer hours. On the other, the possibility of more flexible contracts could encourage more to choose to stay in sectors covered by the ESR when planning their careers. While retention of new mothers is relatively good, the lack of flexibility may result in women choosing to work in other sectors before having children.

²⁰ <https://www.nhsemployers.org/news/flexible-working-nhs>

²¹ <https://timewise.co.uk/wp-content/uploads/2018/07/Flexible-working-in-the-NHS-the-case-for-action.pdf>

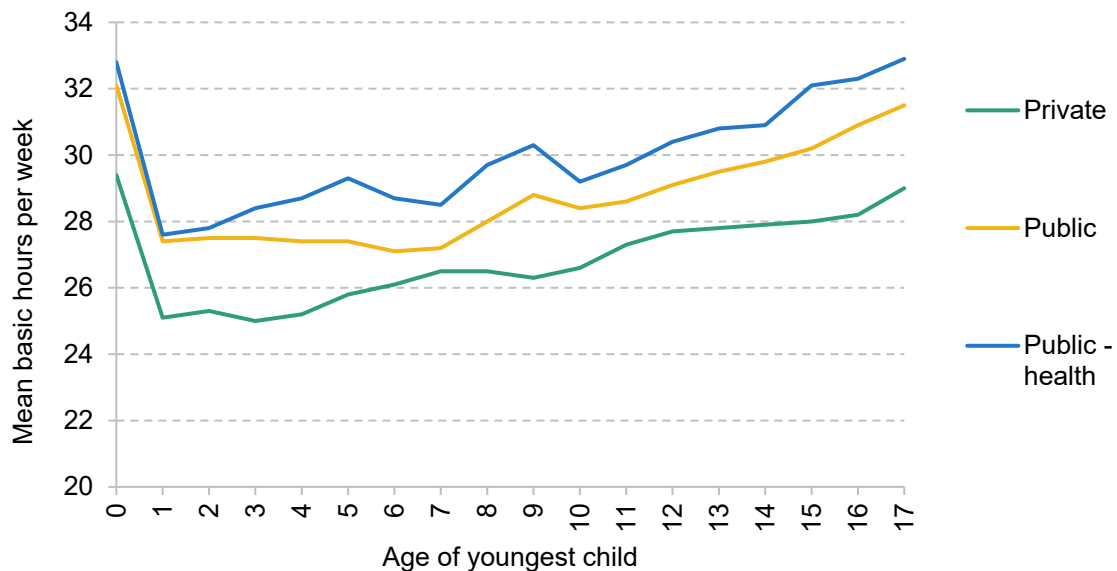
Figure 3.8 showed that the hours that female nurses/midwives and doctors/dentists in the NHS worked when their youngest child entered school did not change. We use the QLFS to examine whether the same pattern holds in the wider labour market. As we identify the presence and age of children based on household composition rather than periods of maternity leave, we can carry out the same analysis for fathers. A full discussion of the results is presented in Appendix A3. Over the whole sample, women's labour supply does increase around the time that children enter school. This is mainly driven by an increase in the share of women who work, but there is also a small increase in the hours of women already employed. The hours of fathers do not change either around the point at which maternity leave ends, when women's contracted hours fall, or around the time a child starts school.

Figure 3.10 shows the mean basic hours of three groups of women: those working in the private sector, those working in the public sector, and those working in the public sector in 'health'. The first two groups will include some health workers. The final group will include those in our sample – nurses/midwives and doctors/dentists – but also other professions and those working in health but outside the acute and community sectors, such as general practitioners (GPs). The figure shows mean basic hours of women with children who work, by age of youngest child and sector of work.

The mean number of hours worked by mothers in the public sector is at all points higher than the mean number of hours worked by mothers in the private sector, and the mean number of hours worked by public sector workers in health is greater than that for all public sector workers. For all three groups, hours are lower for those who have a youngest child aged 1 relative to a child less than 1, reflecting reduced contracted hours when women return from maternity leave. In the private sector, the mean hours of women who work do not change when their youngest child is between 1 and 4 but hours do increase thereafter. In the public sector, hours then remain unchanged until a child is 8, before then increasing. The trends for public sector workers in health are a little less smooth, partly because the sample is smaller. Mothers with a youngest child aged 3 work more hours than those children who have a youngest child aged 1 or 2. Mean hours are then largely steady until a youngest child is 8, before then increasing.²²

²² Differences between the hours worked for those with youngest children aged 4–7 are not significantly different from those who have a youngest child aged 3, with the exception of those with a youngest child aged 5. The mean hours of women with a youngest child of 8 or older are all higher than the mean hours for those with a youngest child of 3 (differences are statistically significant).

Figure 3.10. Mean basic hours per week of women working in the private sector, the public sector, and the public sector in health, by age of the youngest child in the household



Note: QLFS, January 2014 to October 2019. The figure includes only households with a youngest child aged 17 years and younger. We include only those with positive (non zero) contracted hours. 'Public – health' is defined as those who work in SIC code 86.

What the figure indicates is that our results for nurses and midwives and for doctors and dentists are broadly in line with what is seen in the QLFS for the rest of the public. The data window in the ESR only allows us to observe mothers who went on maternity leave at the start our sample window in 2014 up until the point that their children were 6. The QLFS shows no significant changes in hours until a youngest child is 8. NHS payroll records will start to capture this period for maternities in 2014 next year, in 2022.

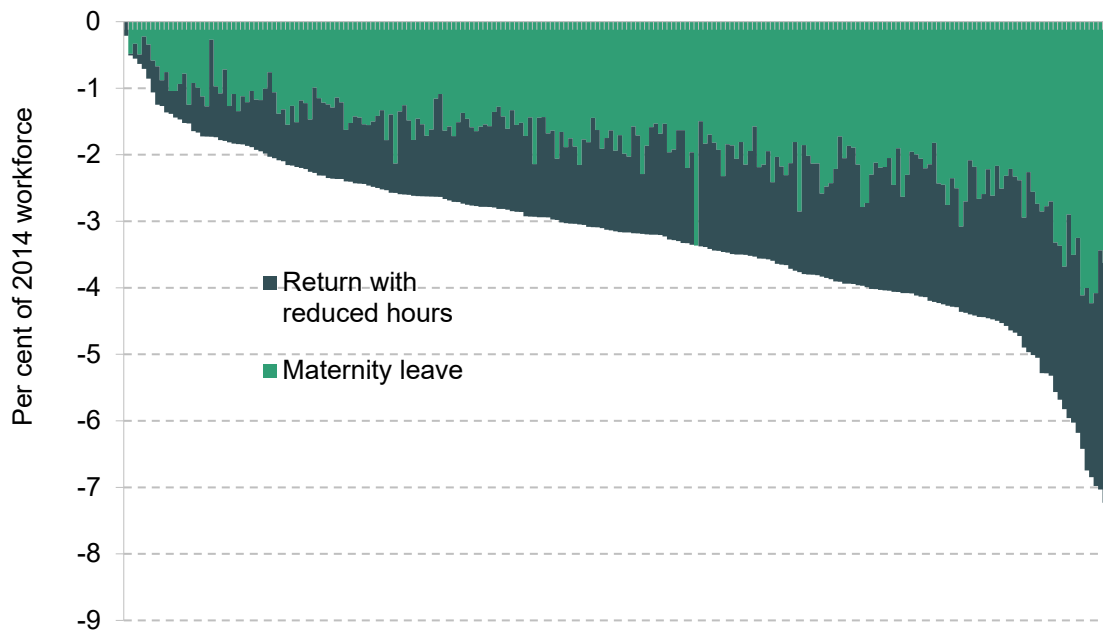
4. How does the impact of maternity vary across trusts?

This section considers how the impact of maternity on labour supply varies across trusts. We start by documenting how much variation there is across trusts in both the total impact of maternity on labour supply (maternity leave and reduced working hours after return) and the distribution of FTE staff after maternity leave. We then consider patterns of variation across region, trust type and specialty. These are important dimensions for workforce planning, but also point towards some of the drivers of variation across trusts. Finally, we consider the importance of access to on-site childcare.

The total impact on labour supply

We start by considering the total impact on labour supply, including maternity leave and reduced hours after maternity leave. Figure 4.1 shows the variation in the total impact of maternity on the labour supply of nurses and midwives. We take a similar approach as in Figure 3.2 and use the records of all nurses/midwives and doctors/dentists present in the ESR and not on maternity leave in January 2014. The figure shows the relative reduction in aggregate FTE hours from maternity leave and reduced hours after maternity leave as an average of January 2018, January 2019 and January 2020. The least affected six trusts only experience a less than 1% reduction in their FTE nurse/midwife hours due to maternity leave or post-maternity-leave reduced hours, on average across these three years. In contrast, the 20 most-affected trusts each experience a reduction of 5% or more in their nursing and midwifery FTE hours, with, on average, more than two-fifths of this impact driven by returners on reduced hours, rather than by maternity leave itself.

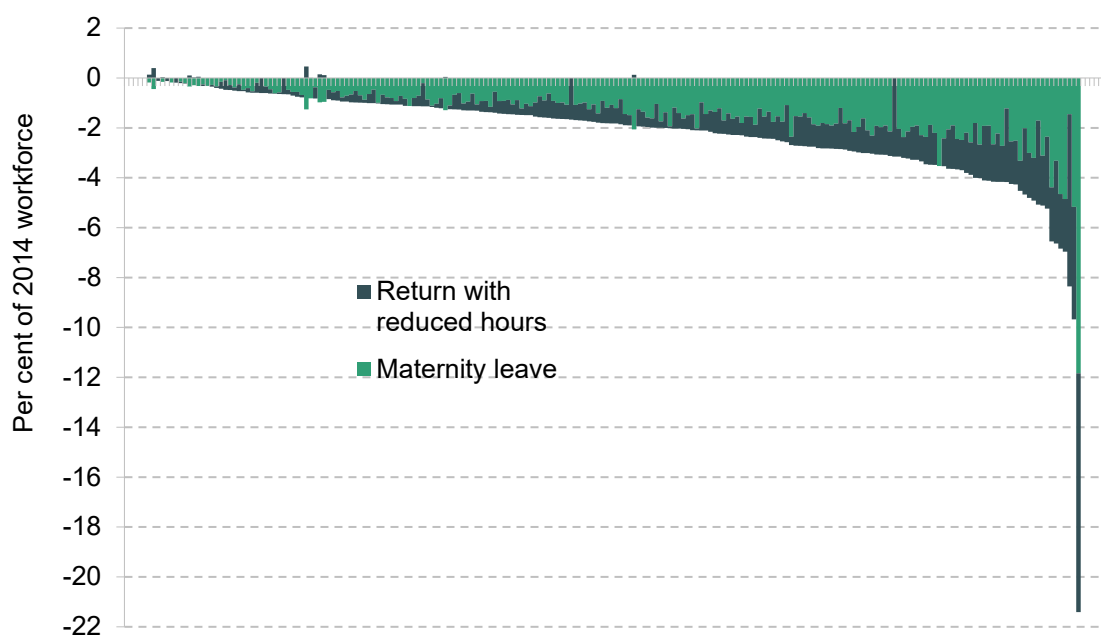
Figure 4.1. Relative impact of maternity leave on aggregate nurse/midwife FTEs by trust, 2014 cohort



Note: Trusts are ranked by reduction in aggregate nurse/midwife FTEs from maternity leave and reduced hours after maternity leave. Shortfall of FTE nurses and midwives relative to January 2014 for those observed and not on maternity leave in January 2014 ('the 2014 cohort') in per cent of January 2014 FTEs, average between 2018 and 2020. Trusts that merged between 2014 and 2020 are considered as one trust throughout; one trust was dropped because it grew very substantially by recruiting staff originally employed by other trusts, inflating the figure – only 16% of its 2018–20 observations for nurses already in the sample in 2014 were in the same trust at that time.

Figure 4.2 provides the same information for doctors and dentists. In most trusts, the proportional impact on the medical workforce is less than on the nursing workforce, because of the much higher share of women among nurses and midwives, compared with doctors and dentists. But for doctors and dentists, too, the impact ranges from the near-negligible – there are 24 trusts where the average impact is less than half a per cent of all FTE doctors/dentists in any given year – to the substantial, with ten trusts having to replace more than 5% of their FTE doctors/dentists. One trust – a large trust with a substantially lower average age and greater share of women among its doctors and dentists than the average trust – must try to replace more than one in five of its FTE doctors/dentists.

Figure 4.2. Relative impact of maternity leave on aggregate doctor/dentist FTEs, 2014 cohort

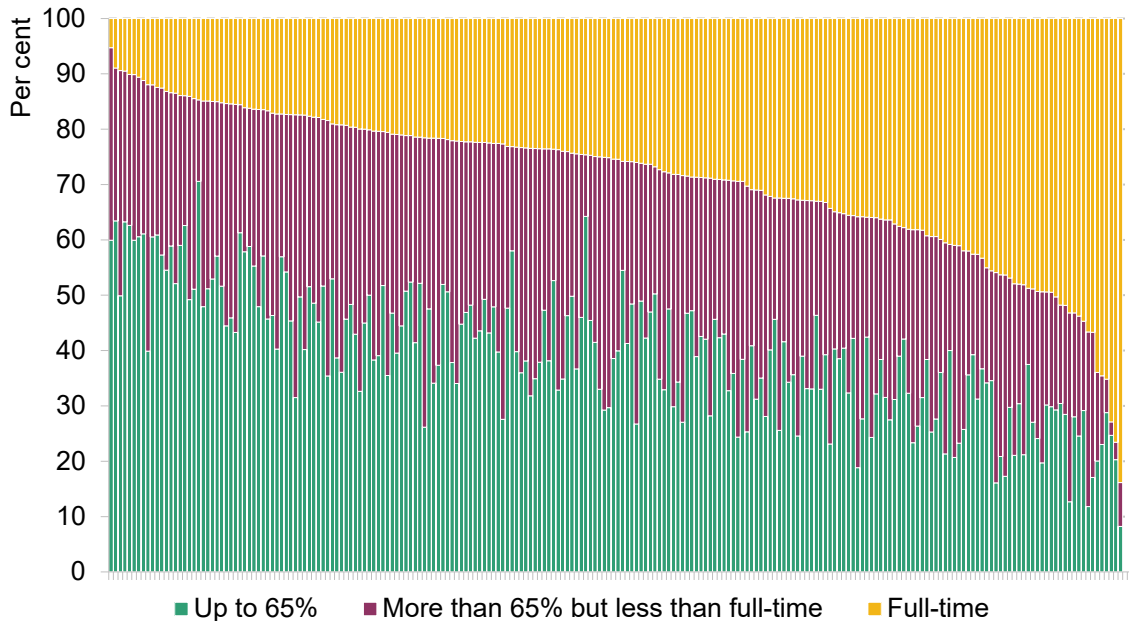


Note: Trusts are ranked by change in aggregate doctor/dentist FTEs from maternity leave and reduced hours after maternity leave. Shortfall of FTE doctors/dentists relative to January 2014 for those doctors and dentists (of any age and gender) observed and not on maternity leave in January 2014 ('the 2014 cohort') in per cent of January 2014 FTEs, average between 2018 and 2020. Trusts that merged between 2014 and 2020 are considered as one trust throughout, and trusts that employed fewer than ten FTE doctors/dentists in 2014 are dropped. The post-maternity-leave change is positive in a few trusts (where doctors and dentists work higher FTEs after an observed maternity leave than before).

Less than full-time work

Figures 4.3 and 4.4 show that there is considerable variation in the distribution of hours after maternity leave by trust. In one in four trusts, the share of nurses and midwives working full-time one to three years after maternity leave is 20% or less; in contrast, in the top quarter of trusts this share is 36% or more. Among doctors, the equivalent figures are higher – but differences in rates by trusts remain: One in four trusts has a share of full-time working of 35% or less, with the top quarter of trusts having a share of 50% or more.

Figure 4.3. Contracted hours of nurses and midwives by trust after maternity leave

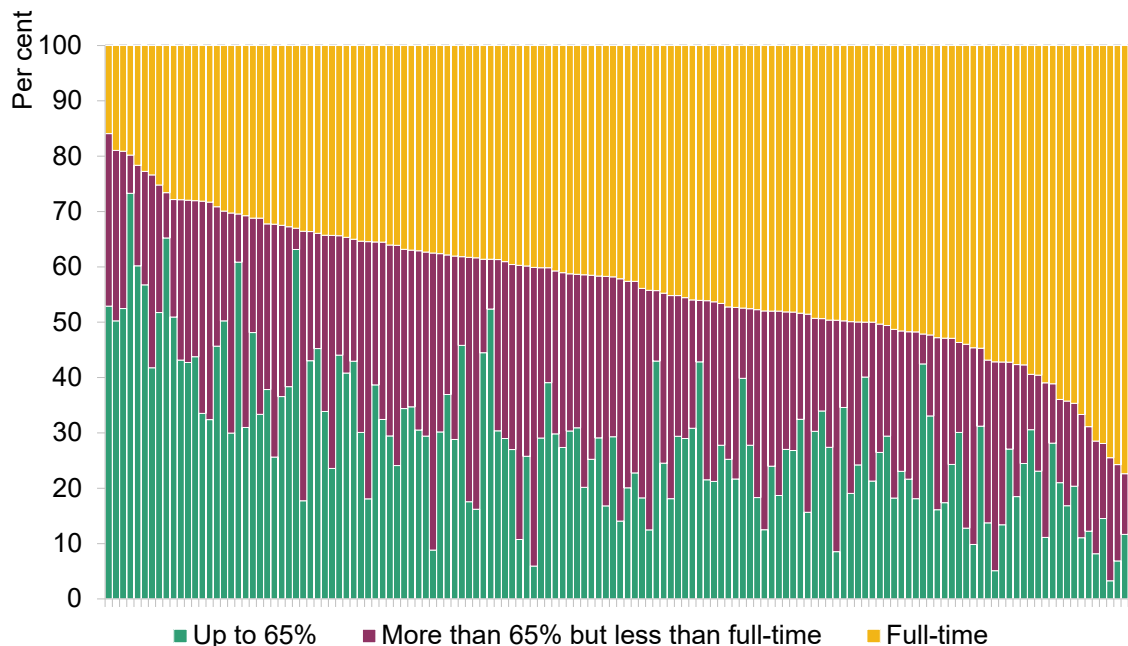


Note: Average over nurse-month observations one to three years after first observed maternity leave. Restricted to trusts with at least 20 individual nurses/midwives observed one to three years after maternity leave, and to nurses and midwives with strictly positive contracted hours. Merging trusts are treated as one trust throughout the period. Trusts are ordered from those with the smallest to the largest number of full-time nurses and midwives.

If nurses and midwives in a trust return from maternity leave with a high FTE on average, this tends to be true for doctors and dentists as well, but the relationship is not a very close one (correlation coefficient: 0.12). The impact on the nursing/midwifery workforce is generally bigger than the impact on the medical workforce, because the share of women is much higher among nurses and midwives.

This cross-trust variation in working hours could be the result of many different factors. It could be differences in the preferences of staff, their characteristics or those of the area in which they live. It could, however, also reflect differences in how trusts approach decisions about LTFT contracts. Understanding this variation is important when examining the impact of maternity on women's careers, and the impact of flexible working policies on recruitment and retention, in order to ensure that NHS resources are deployed efficiently through good workforce planning.

Figure 4.4. Contracted hours of doctors and dentists by trust after maternity leave



Note: Average over doctor-month observations one to three years after first observed maternity leave. Restricted to trusts with at least 20 individual doctors/ dentists observed one to three years after maternity leave, and to doctors and dentists with strictly positive contracted hours. Merging trusts are treated as one trust throughout the period. Trusts are ordered from those with the smallest to the largest number of full-time doctors and dentists.

How does the impact of maternity on labour supply vary by region?

The NHS in England must provide health services for people wherever they live. This means each region must have an adequate number of doctors and dentists, nurses and midwives, and other healthcare professionals. However, the challenges of recruitment and retention in the NHS vary considerably by region. Across England, vacancy rates are typically higher in London and the East of England and lowest in the North East and South West.²³ The wage structure, in contrast, is largely flat across the country outside London, creating differences in relative NHS wages across local labour markets (Propper, Stockton and Stoye, 2021). In areas outside London where relative pay is relatively low and vacancies are higher, there is limited flexibility for an individual trust or region to increase pay to attract more staff. While maternity leave in most cases creates only a temporary vacancy, these shifts still need to be

²³ See <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-vacancies-survey/april-2015---march-2021#key-facts>.

filled at the same time as some trusts struggle with unfilled shifts caused by other, more permanent vacancies. Understanding the regional shortfall in hours as a result of maternity is therefore important.

Rates of maternity leave are highest in trusts in the North West where, in any given month, 4.0% of female nurses and midwives under 50 are on paid maternity leave, and lowest in Greater London, where the corresponding rate is just 2.9%.²⁴ Among women doctors and dentists under 50, rates are, similarly to nurses and midwives, highest in trusts in the North West (4.4%), followed by the South West. It is lowest in the North East (2.3%).

There are also substantial differences in the demographic composition of the medical workforce in different regions, which means that women under 50 – the relevant staff group for maternity leave – account for varying shares of all doctors and dentists. These differences tend to reinforce those within the group of women under 50: for example, the rate of maternity leave among *all* doctors and dentists in the North East is also low (0.8%), with a median doctor/dentist age of 43 (compared to 39 overall) and 41% of doctors and dentists are female (compared to 48% overall). Conversely, the rate is high in the North West (1.8%), with a median age of 37 and a share of women in line with the national average.

Retention

There is a close relationship between overall retention and retention after returning from maternity leave. Nevertheless, the gap between the two does vary across the country. Among large regions, the gap between overall retention and retention after returning from maternity leave is biggest in the East of England (2.4%) and smallest in Greater London (0.7%).

For doctors and dentists, post-maternity retention is also much better than overall retention of women under 50 in the East of England, while it is worse in the North East (where retention is below-average for both groups).

Less than full-time work

Differences in the structure of the local labour market, the support available to working parents and the demographic characteristics of the NHS workforce with young children might all be reflected in geographical heterogeneity in full-time work after maternity leave. Whilst it is common for doctors and dentists and for nurses and midwives to work less than full-time

²⁴ This ranking does not change – although the gap shrinks – when we adjust for the age and ethnicity of nurses and midwives.

after returning from maternity leave, across the country, average contracted hours two years after maternity leave vary substantially across areas.

Comparing broad geographical areas, the share of nurses working full-time one to three years after going on maternity leave is highest by far in Greater London, at 43%, and lowest by far in the South West, at 17%. Zooming in (by the place of residence of nurses/midwives), it is several areas scattered around the North (Scarborough, Sunderland, Blyth and Ashington, and to a lesser extent Liverpool) that stand out as having high rates of full-time work among returning mothers, as well as in London and Slough and Heathrow.

The share working smaller contracts of up to 65% of full-time is highest in many coastal, relatively rural travel-to-work areas mainly in the South West, including Bude, Sidmouth, and Wadebridge, all three of which record a share above two-thirds (compared to 43% in the median travel-to-work area). None of these travel-to-work areas hosts the main site of a trust, meaning that the nurses and midwives living in these areas are likely to commute into another travel-to-work area,²⁵ which may be associated with a longer, costlier or more difficult commute. This could also contribute to a decision to work fewer shifts. However, it is also high in cities in the South West, with a share between 50% and 60% in Bath, Exeter and Bristol.

For doctors and dentists, several areas with a very high share of full-time work one to three years after maternity leave are clustered in the East and East Midlands, with Boston, Lowestoft, Thetford and Mildenhall, and Grantham all having rates of 65% or more. Areas with the highest share of doctors and dentists working smaller part-time contracts (up to 65%) one to three years after maternity leave are found across the North, including Sunderland, Kendal and Scunthorpe, and in the South West, including Kingsbridge and Dartmouth and Barnstaple.

How does the impact of maternity on labour supply vary by trust type and specialty?

Most workers in our records are not substitutable across types of trust, or across specialties. A mental health nurse cannot immediately be replaced by a midwife. An oncology consultant cannot instantly be replaced by cardiology registrar. Workforce planning involves not just ensuring that there are enough staff but also that the distribution of qualifications and

²⁵ Information on which site a nurse or midwife works is incomplete in the ESR. Based on the main travel-to-work area that a trust's other nurses and midwives live in, the nurses and midwives in these areas are likely to commute to the Exeter, Taunton, or St Austell and Newquay travel-to-work areas.

experience closely matches what is required. Differences across specialty in labour supply after maternity leave can also provide important context in understanding career opportunities for women in the NHS.

Rates of maternity leave

Rates of maternity leave for both nurses and doctors are typically lower in non-acute trusts. As Figure 4.5 illustrates, this is associated with non-acute trusts employing nurses/midwives and doctors/dentists who are, on average, older than their colleagues in acute trusts. For each trust type, a younger average age of staff is associated with higher rates of maternity leave.

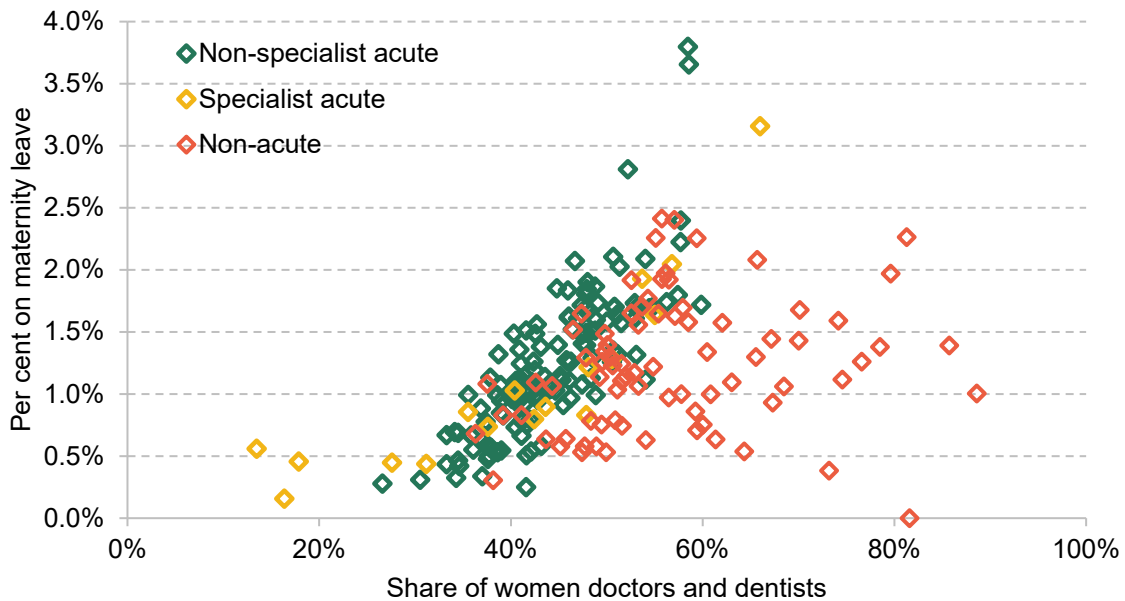
Figure 4.5. Average age of staff, and the percentage on maternity leave, by trust and staff group



Note: Per cent on maternity leave calculated as monthly observations with some maternity pay as a percentage of all monthly observations. Restricted to trusts with more than 20 nurses/midwives and doctors/dentists observed over the period. Data include all doctors/dentists and nurses/midwives.

Figure 4.6 shows that, as would be expected, there is a positive relationship between the average percentage of doctors and dentists in a trust who are on maternity leave and the percentage of doctors and dentists who are women. Rates of maternity leave are lower in non-acute trusts, for any given share of women, as those working in acute trusts are older. We do not provide the same figure for nurses and midwives, as there is less variation in the share of women in this staff group.

Figure 4.6. Percentage of women on maternity leave and percentage of doctors and dentists who are women, by trust



Note: Per cent on maternity leave calculated as monthly observations with some maternity pay as a percentage of all monthly observations. Restricted to trusts with more than 30 nurses/midwives and doctors/dentists observed over the period. Data include all doctors and dentists.

Comparing nurses and midwives of the same age, those working in obstetrics and gynaecology (including almost all midwives) and paediatrics are much more likely than others to be on maternity leave.

The impact of maternity leave among doctors also varies with the share of women in different specialties. This is partly a mechanical effect: a higher share of female doctors means a higher share of doctors who could potentially go on maternity leave. There is, however, also variation on the rate of women within each specialty who go on maternity, which tends to reinforce the mechanical effect.

The share of women on maternity leave is generally increasing in the share of female doctors and dentists within the specialty. An increase of 10 percentage points in the share of women among all doctors in a medical specialty is associated with an increase of 0.6 percentage points in the share of women under 50 on paid maternity leave in any given month.

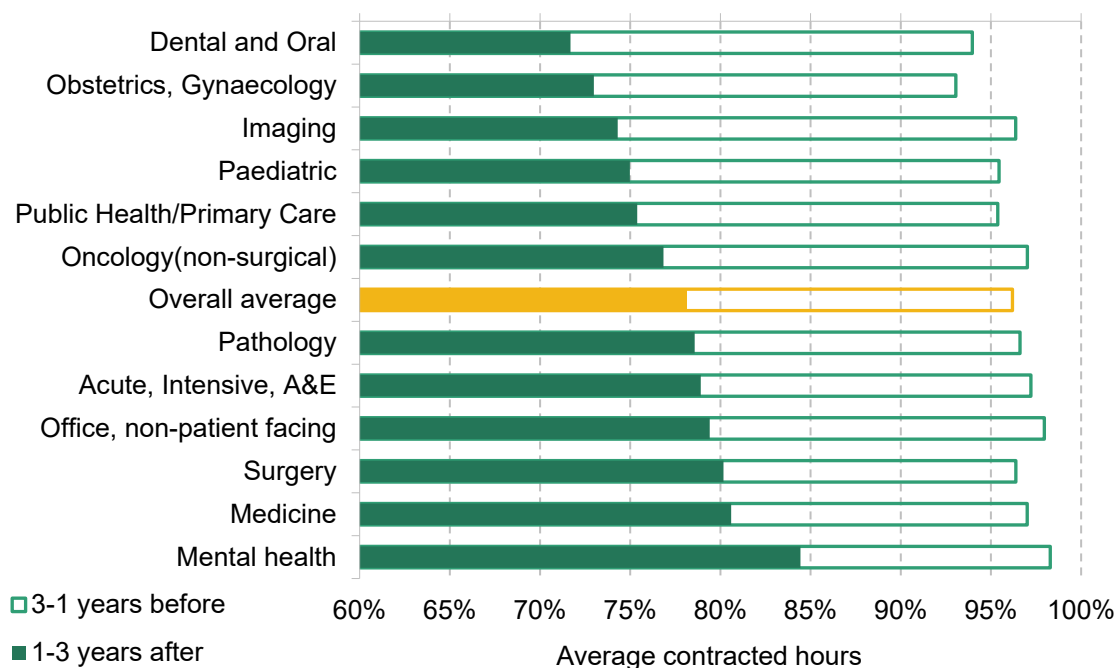
Doctors in many female-dominated specialties, including community or public health medical specialties as well as paediatric specialties (excluding paediatric surgery) and obstetrics and gynaecology, are more likely to be on maternity leave than the average woman doctor or dentist of their age. These are similar areas to the ones that also saw high shares of nurses and midwives on maternity leave. The share on maternity leave is by far the highest

among GPs (nearly two-thirds of whom are female, and all of whom are junior doctors training in general practice, because our data do not cover the primary care sector). This pattern is not universal, however: The share of women in dental and oral specialties is nearly two-thirds; however, the share of women on maternity leave in those specialties is no higher than across the whole sample.

Less than full-time work

Mental health nurses work closest to full-time one to three years after maternity leave (see Figure 4.7), and, consistent with this, hours in mental health and learning disability trusts are also higher than in other acute and non-acute trusts (see Figure 4.8). In contrast, those in dental and obstetric and gynaecological areas (including most midwives) work the lowest FTE hours. The latter group already worked slightly below-average hours two years before maternity leave (noting that they may have already had a child before 2014, whose birth we do not observe²⁶). In general, however, variation between specialties is greater after maternity leave, with the gap between the area with the highest and lowest average contracted hours growing from 5% of full-time before maternity leave, to 13% of full-time afterwards.

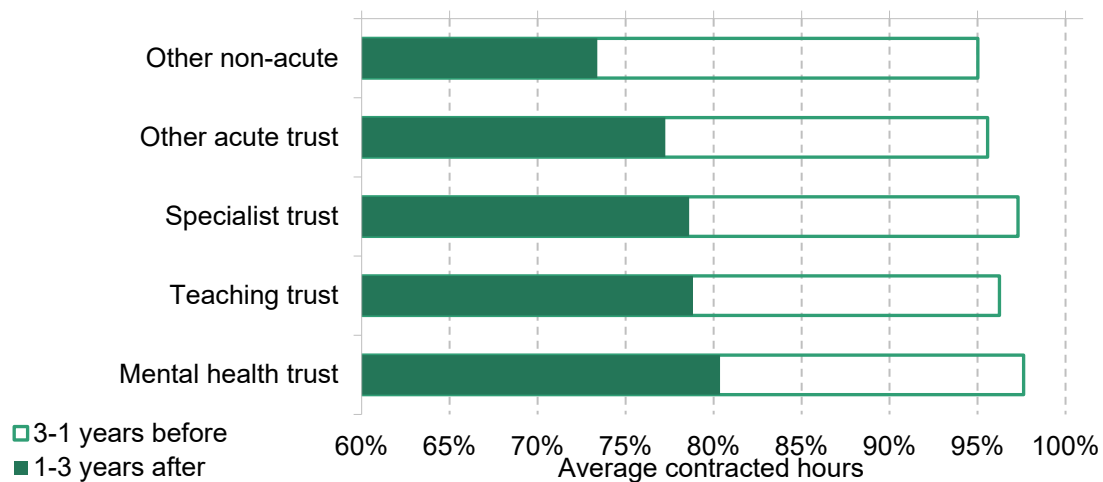
Figure 4.7. Nurse/midwife hours before and after maternity leave, by area of work



Notes: Contracted hours in non-bank assignments as a proportion of full time, restricted to nurses and midwives with strictly positive hours.

²⁶ In the Appendix, we discuss differences in the number of maternity leaves between midwives and nurses.

Figure 4.8. Nurse/midwife hours before and after maternity leave, by trust type



Notes: Contracted hours in non-bank assignments as a proportion of full time, restricted to nurses and midwives with strictly positive hours.

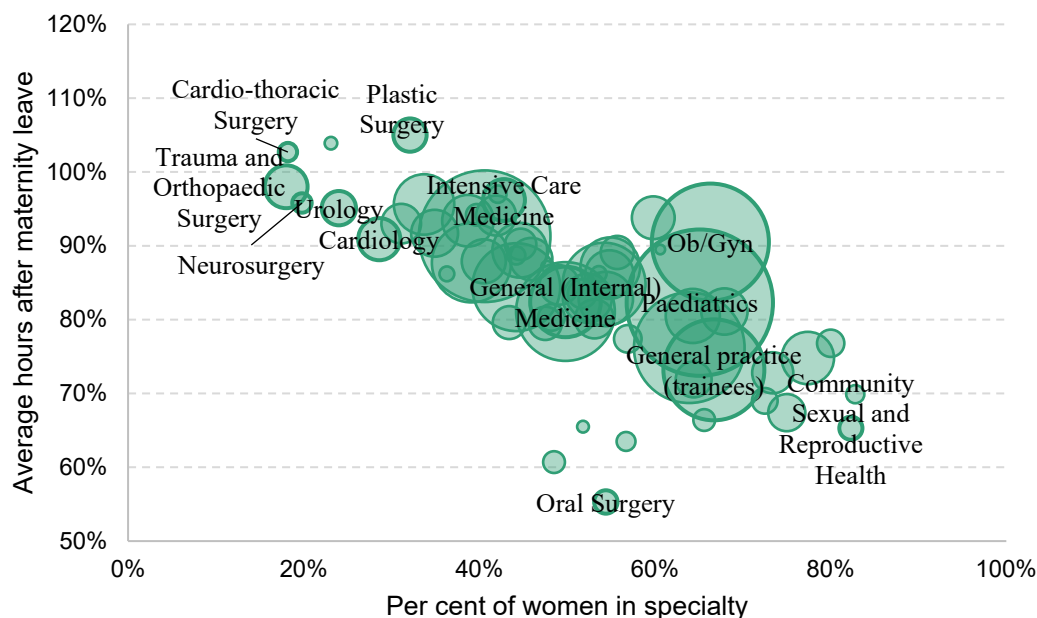
Partly echoing our findings for nurses/midwives, doctors in community or public health medical specialties work fewer hours upon their return and the same is true for some paediatric specialties (but not paediatric surgery or paediatric cardiology).²⁷ However, doctors in obstetrics and gynaecology (unlike midwives, and nurses in that area) return with hours that are 5% of full-time higher than other internal medical specialties, and those in psychiatric specialties return with below-average hours (in contrast to mental health nurses). Dentists and (trainee) GPs also return with much fewer hours, consistent with the latter being one of the specialties where training on a LTFT basis is most widely available. Figure 4.9 plots average hours one to three years after maternity leave by specialty, relative to the share of women among the doctors/dentists in that specialty.

Doctors/dentists in specialties that are more male-dominated than the profession as a whole, including the surgical specialties, return with higher FTEs after maternity leave. The margin is large in many cases – for example, hours among both returning cardio-thoracic surgeons and vascular surgeons are estimated to be 18% of full-time higher than acute internal medicine, and women account for less than a quarter of doctors in both of these specialties. Among women returning from maternity leave, a 10 percentage point higher share of women in the specialty across all trusts is associated with a decrease in the average FTE hours women are contracted to work when they return from maternity leave of 3.6 percentage points. This acts to reinforce differences in the impact of maternity on FTE staff, as women

²⁷ Doctors in different specialties have different average ages due to differences in the duration of training – the stated differences in the text condition on age. The full regression can be found in the Appendix (Table A.1).

in specialties with high shares of male doctors are less likely to go on maternity leave than the average woman in the first place.

Figure 4.9. Percentage of women and hours of work one to three years after maternity leave, by specialty



Notes: Unconditional mean contracted non-bank hours (including zeroes) 12 to 36 months after first receipt of maternity pay, hours censored at 200% of full-time. Size of circles represents the number of observations of women one to three years after maternity leave; inclusion of specialties is conditional on at least fifteen such women being observed, smaller specialties are grouped together.

There is clear evidence that working patterns after maternity leave differ by specialty. This descriptive evidence does not however allow us to draw conclusions as to why this is the case. The hours that we observe may be down to selection: women who choose to specialise in these male-dominated specialties may also prefer to work more hours. Alternatively, it may be that some women in these specialties would prefer to work fewer hours but feel unable to do so. This could be due to the workplace culture, potential career consequences or because requests for lower FTE contracts are not approved. This would have implications not just for the women currently working in those specialties, but the specialty choice of young women before they have children.

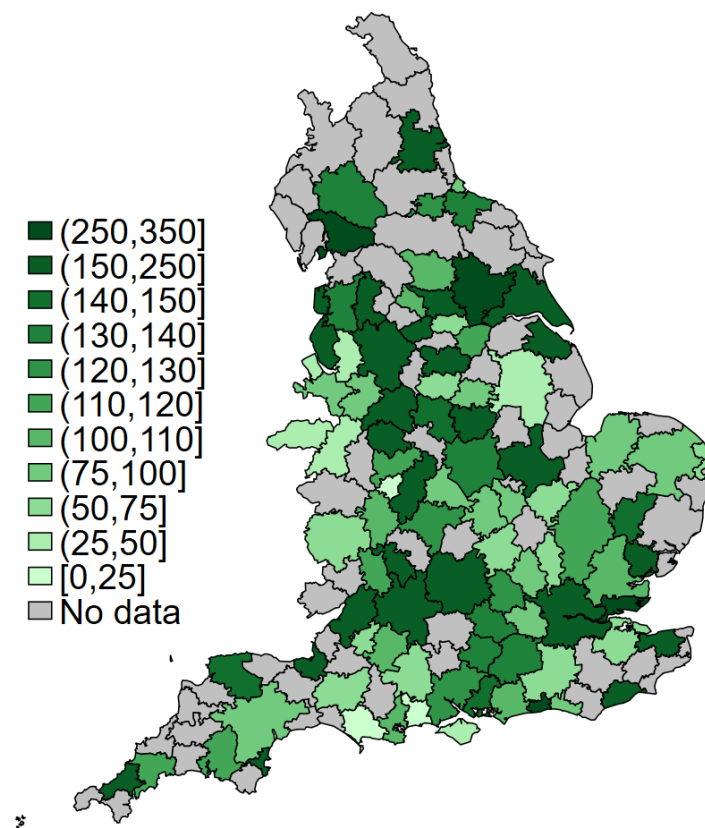
Does on-site childcare affect labour supply after maternity leave?

On-site childcare is one of the most straightforward trust characteristics that might enable mothers to work closer to full-time upon returning from maternity leave. Figure 4.10 shows Ofsted-registered early-years childcare providers at NHS trust sites across the country, and

the number of places they offer. The vast majority of trusts host at least one childcare provider at their sites,²⁸ but they differ substantially in the number of places offered.

We identify nurses and midwives who are mothers of a child in the early-years age range in our data. At the trust level, we relate the contracted hours of these mothers to the number of childcare places available at all trust sites, with the results shown in Table 4.1. The effect is adjusted for the number of nurses and midwives under the age of 50 working in the trust, and the number of trust sites, to account for the fact that demand will be higher, and a given number of places will be less adequate in a large trust with many sites.

Figure 4.10. Staff members per early-years childcare place at NHS trust sites



Note: Staff member per early-years childcare place at (the same postcode as) NHS trust sites in Term 3 (September–December) 2019. Staff members with a permanent or fixed-term contract in the ESR in any staff group across all of a trust’s sites in December 2019. A trust can appear multiple times on this map if it has sites across more than one travel-to-work area.

²⁸ ‘On-site’ childcare is defined as an early-years childcare provider being registered at the same postcode as a trust site.

Table 4.1. On-site childcare and mothers' hours of work (nurses and midwives)

	Average per cent FTE	Per cent full-time	Per cent <65% FTE
Number of places (in 100s)			
if up to 500	0.11 (0.26)	0.53 (0.63)	-0.025 (0.53)
if more than 500	-0.14** (0.043)	-0.30*** (0.084)	0.31*** (0.078)
Number of female nurses under 50 (in 100s)	0.037 (0.048)	0.092 (0.12)	-0.075 (0.10)
Trust type			
Teaching trust	2.00* (0.93)	4.83* (2.10)	-5.16* (2.11)
Specialist trust	2.59 (1.54)	5.14 (3.17)	-6.59* (2.98)
Non-acute trust	3.35** (1.03)	12.3*** (2.50)	-6.70*** (2.00)
Constant	78.9*** (0.77)	31.6*** (1.89)	38.1*** (1.58)
<i>N</i>	3,192	3,192	3,192

Note: The unit of observation is a trust and term (three terms per year), and all regressions are conditional on year effects. Standard errors are given in parentheses, clustered by trust. All outcomes refer to mothers of children in the early-years age range (7 months to 4 years and 11 months) and are expressed in percentage points. Omitted trust type: non-teaching, non-specialist acute trusts. Where a postcode hosts sites of multiple trusts, childcare places may contribute to the count for multiple trusts. The table excludes care trusts, independent sector healthcare providers and some community trusts, for which site data are not available. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

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The results show that more places are not associated with higher average FTE for mothers. In fact, looking at variation in what is approximately the top half of observations (with more than 400 places across all sites), more places are associated with *lower* average hours, lower rates of full-time work and higher rates of smaller contracts of up to 65%. The effects are statistically significant, but moderate in size: an additional 403 places – equivalent to moving from the median to the 75th percentile of trust-term observations – is associated with a decrease of 1.2 percentage points in the share of mothers of early-years children working full-time.

It is not likely that childcare is actively pushing nurses to work *fewer* hours, and the regression does not attempt to make a causal link. Instead, it is likely that the pool of nurse/midwife mothers in trusts with more childcare is different: for example, nurses and midwives may be more likely to stay in the acute and community sector – although at a lower FTE – when they are planning to have children if many childcare places are available. The data we are using also do not report the hours of childcare offered; it is likely that most childcare options in the sample do not cover full-time work.

For doctors and dentists, the relationship between childcare places and contracted hours of mothers of early-years children is not statistically significant (Table A.2 in the Appendix). This could be because doctors and dentists, as higher earners, have more alternative childcare options, or because children of doctors and dentists represent a small share of overall demand for places.

5. Conclusion

This briefing note provides some of the first quantitative evidence on the labour supply of mothers of young children in the NHS. The information we provide is relevant to some of the most important questions the NHS faces around its workforce today, including how to maximise the retention and productivity of the current workforce, and how to ensure that there are enough trained staff to deliver healthcare in the future. The size of the NHS workforce means that our results also have relevance to the wider economy. The terms the NHS sets for its staff, and its approach to flexible working and gender equality, will have impacts on the labour market more generally.

The desire of many women in the NHS to have flexible working arrangements when returning from maternity leave and when their children are young is not new. Requests for flexible and LTFT working are, however, becoming harder to ignore. NHS workers now have – as of September 2021 – enhanced rights to request flexible working after an agreement between NHS employers and unions,²⁹ and trusts are under increased pressure to agree in order to retain and motivate staff. The same is true in recruitment. The NHS currently has a shortage of staff, particularly in nursing (National Audit Office, 2020). Most potential applicants will be women, and many will have caring responsibilities. Success in filling these roles is likely to depend on finding a balance between the needs of staff and the trust.

NHS payroll records show that at any given point in time, among women under 50, around 3.5% of nurses and midwives, and of doctors and dentists are on maternity leave. In any given year, the loss in FTE doctors and dentists from maternity and reduced hours after maternity leave is approximately equal to the loss from non-retention. For nurses and midwives, the reduction is at least half as big as from non-retention. While maternity should not be viewed as a problem to be solved, it does create a challenge for those in charge of staff rotas that is important to plan for. Across the NHS, rates of maternity leave are very steady and therefore predictable, but there is huge variation across trusts. Any change in the age and gender composition of the workforce will also change the maternities in the future. This could include demographics such as the increasing share of doctors and dentists who are women, or government policies that change the age composition of the workforce, such as an increase in training places.

²⁹ <https://www.nhsemployers.org/news/flexible-working-nhs>

The NHS acute and community sectors are successful in retaining staff upon their return from maternity leave. Rates of retention for those coming back from maternity leave are slightly higher than for other women, and similar to other women in the public sector. An important caveat, however, is that we only observe women who have chosen to stay in the acute and community sectors until they go on maternity leave. We do not capture women who choose to leave these sectors or their professions in anticipation of having children. It is therefore important to understand women's choices earlier in their careers before concluding that retention is not affected by motherhood.

Three-quarters of nurses and midwives and two-thirds of doctors and dentists return to work on a LTFT basis – and most remain part-time for at least five years. This makes the labour supply decisions of those who return to work a key factor to account for during workforce planning. There is also a question about how mothers could be supported to work more hours as their children grow. There is no change in hours when a woman's youngest child is entitled to 30 hours free nursery education (the term after they turn three), or after they start school. In aggregate, the difference between the actual and full-time working hours of mothers whose youngest child who started school in 2019 was equivalent to an additional 2,400 FTE nurses and midwives three to six months later. If women felt supported and appropriately rewarded, it may be possible to encourage some to work more hours as their children get older, and for some of these additional FTEs to be added back to the total.

There are large variations in average FTE on return from maternity leave across trusts and specialties. This is likely to be the result of a combination of women's choices and differences in the availability of LTFT contracts. Variation in the availability of LTFT contracts may influence women's choice of specialty or trust even before pregnancy.

The high rates of LTFT contracts across the NHS mean that it is important to understand how reduced hours affect women's careers and how reduced hours may interact with career and pay structures. For example, Dacre et al. (2020) noted that long pay scales for doctors and dentists meant that it was hard for the pay of females to catch up with that of their male peers after periods of LTFT working, even if they were doing the same job.

While it is common for nurses/midwives and doctors/dentists to work less than full-time, it is rare for them to hold contracts of less than 0.6 FTE. This is true of much of the public sector, although rates of women on less than 0.6 FTE contracts in the human health sector are among the lowest. By contrast, contracts of less than 0.5 FTE are very common among mothers of young children in the wider labour market. It is unclear whether these differences arise through choice or whether there are constraints on contracts that are offered. One suggestion is that NHS trusts are reluctant to offer contracts below 0.6 FTE because they still have to offer the same training to each employee, irrespective of their hours. Offering contracts with

fewer hours would have an ambiguous effect on labour supply. Some women would work fewer hours, leading to a reduction in labour supply, but others may stay in the sector for longer, leading labour supply to increase.

The impact of offering contracts with fewer hours – as may be on the horizon after a recent agreement to promote flexible working in frontline nursing roles across the NHS – on aggregate hours of work is a priori ambiguous. On the one hand, it may encourage more women to stay in the acute and community sector, or to return, which would increase labour supply. On the other hand, some women who currently work in the sector would choose to reduce their hours, leading to a reduction in labour supply.

There is substantial variation in the contracted hours that women work across trusts after returning from maternity leave. These differences are partially associated with geography, trust type and workforce demographics. Around a third of the trust-level variation, however, remains unexplained after accounting for these characteristics. Similar trusts in the same region have different working patterns, and the work patterns of doctors/dentists and nurses/midwives in the same trust also vary. For doctors and dentists, there is substantial variation in the impact of maternity by specialty, with male-dominated specialties experiencing a smaller loss in FTE because the share of women is smaller; women who do work in those specialties are less likely to go on maternity leave, and those that do go on maternity leave return with more contracted hours. It is important to understand the sources of this variation, both for workforce planning and to ensure that women are given the opportunity to develop in their careers.

NHS and trust policy towards those on maternity leave and those with young children could be particularly important during the COVID-19 pandemic and the recovery period. Our results suggest that the choices women make about their hours when they return from maternity leave are very persistent. If the COVID-19 pandemic affects those choices, the effects on hours and possibly retention could persist. For example, if women choose to return from maternity leave for fewer hours for reasons related to COVID-19, then this could persist over many years as women tend not to increase their hours when their children are young. There is also a question of whether women who work less than full-time could, if properly incentivised, increase their labour supply to help with the pandemic recovery phase. Unlike increased training places or international recruitment, this labour supply could be available immediately. What it would take for women to increase their hours willingly after the last 18 months is, of course, open to question.

Appendix

A1. Additional figure and tables

Figure A.1 adapts Figure 3.2 by restricting the 2014 cohort to those doctors and dentists who were working full-time in 2014, who are less likely to have had children prior to the start of our observation window. The patterns of reductions in aggregate hours worked remain similar.

Figure A.1. FTE shortfall compared with non-retention, 2014 cohort of full-time working doctors and dentists aged under 50

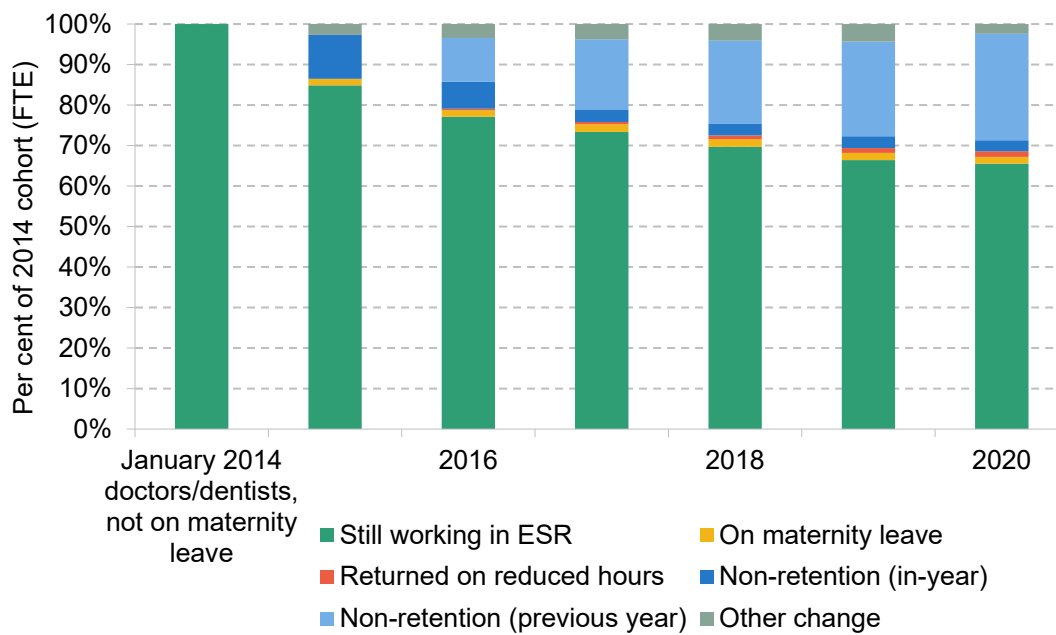


Table A.1. Regression results: specialties and contracted hours after maternity leave for doctors and dentists

	Contracted hours (per cent of FT) one to three years after maternity leave	
Additional dental specialties	-30.2***	(8.48)
Allergy	-31.4*	(12.9)
Anaesthetics	5.92***	(1.56)
Cardio-thoracic surgery	17.9***	(4.97)
Cardiology	6.41**	(2.48)
Child and adolescent psychiatry	-4.16+	(2.27)
Clinical genetics	-8.64**	(2.90)
Community health service dental	-17.9***	(3.42)
Community health service medical	-17.7**	(6.52)
Community sexual and reproductive health	-19.5***	(4.55)
Emergency medicine	-0.11	(1.74)
Endocrinology and diabetes mellitus	1.29	(2.55)
Endodontics	-56.4***	(3.44)
Gastroenterology	6.52**	(2.39)
General (internal) medicine	-2.44	(1.89)
General dental practitioner	-15.5**	(5.02)
General medical practitioner	-8.96***	(1.60)
General practice	-11.6***	(1.60)
General psychiatry	-4.90**	(1.64)

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General surgery	9.49***	(2.14)
Genito-urinary medicine	-12.9***	(2.53)
Infectious diseases	1.00	(2.86)
Intensive care medicine	10.00***	(2.31)
M&D retainer scheme	-40.5	(27.9)
Medical oncology	8.80**	(2.84)
Medical psychotherapy	-19.6**	(6.15)
Neurology	3.02	(2.47)
Neurosurgery	9.97**	(3.11)
Nuclear medicine	-1.10	(5.96)
Obstetrics and gynaecology	5.73***	(1.67)
Occupational medicine	-16.4*	(6.94)
Old age psychiatry	-5.75*	(2.35)
Ophthalmology	7.96**	(2.54)
Oral medicine	-25.6**	(8.19)
Oral microbiology	15.0***	(1.45)
Oral surgery	-28.8***	(4.68)
Oral and maxillo-facial surgery	-8.75*	(3.59)
Otolaryngology	7.60**	(2.36)
Paediatric cardiology	11.2**	(4.24)
Paediatric dentistry	-15.0***	(4.18)
Paediatric surgery	10.5*	(4.96)
Paediatric and perinatal pathology	20.0+	(11.3)

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Paediatrics	-2.90+	(1.57)
Palliative medicine	-10.8***	(1.89)
Clinical member of management team	15.0***	(1.44)
Periodontics	-59.8***	(1.52)
Plastic surgery	21.1***	(3.92)
Public health dental	-7.56	(4.71)
Public health medicine	-12.4***	(3.10)
Rehabilitation medicine	1.42	(3.87)
Renal medicine	8.01*	(3.36)
Respiratory medicine	4.04+	(2.20)
Restorative dentistry	-27.8***	(5.60)
Trauma and orthopaedic surgery	12.0***	(2.55)
Tropical medicine	18.1***	(1.44)
Urology	9.54***	(2.38)
Vascular surgery	17.5***	(3.50)
Constant	91.3***	(13.9)
Observations	222,106	

Note: Omitted category: acute internal medicine. Regression includes age, age squared and a total of 82 specialty dummies; some non-significant specialty coefficients not shown in the table. Standard errors in parentheses clustered at the individual level. + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table A.2. Childcare places and hours of doctors/dentists

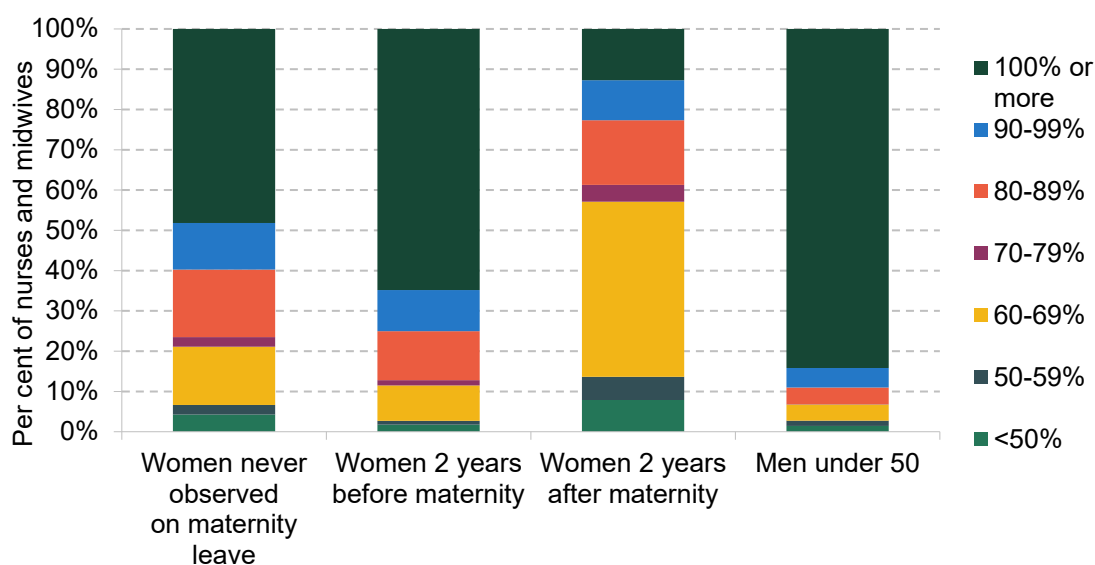
	Average per cent FT	Per cent full-time	Per cent <65% FTE
Number of places (in 100s)			
if up to 500	-0.47 (0.44)	-0.63 (0.73)	0.87 (0.70)
if more than 500	-0.061 (0.078)	-0.21 (0.13)	0.012 (0.12)
Number of female doctors under 50 (in 100s)	-0.21** (0.081)	-0.65* (0.27)	0.49** (0.15)
Trust type			
Teaching trust	0.81 (1.16)	2.37 (2.12)	-2.93 (2.26)
Specialist trust	11.7** (3.77)	13.3* (6.04)	-10.5* (4.70)
Non-acute trust	-7.76*** (1.58)	-12.9*** (2.66)	14.1*** (2.70)
Constant	89.4*** (0.98)	55.1*** (1.86)	25.0*** (1.82)
<i>N</i>	3,147	3,147	3,147

Note: The unit of observation is a trust and term (three terms per year), and all regressions are conditional on year effects. Standard errors are given in parentheses, clustered by trust. All outcomes refer to mothers of children in the early-years age range (7 months to 4 years and 11 months) and are expressed in percentage points. Omitted trust type: non-teaching, non-specialist acute trusts. Where a postcode hosts sites of multiple trusts, childcare places may contribute to the count for multiple trusts. The table excludes care trusts, independent sector healthcare providers and some community trusts, for which site data are not available. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

A2. The hours of midwives after maternity leave

Of our monthly observations, 8.2% are for midwives. Midwives are generally less likely to work full-time, with 65% working full-time two years before maternity leave, compared to 78% of all nurses and midwives. But the pattern of a large drop in full-time work, mostly switching to 60% of full-time contracts, is the same for both groups.

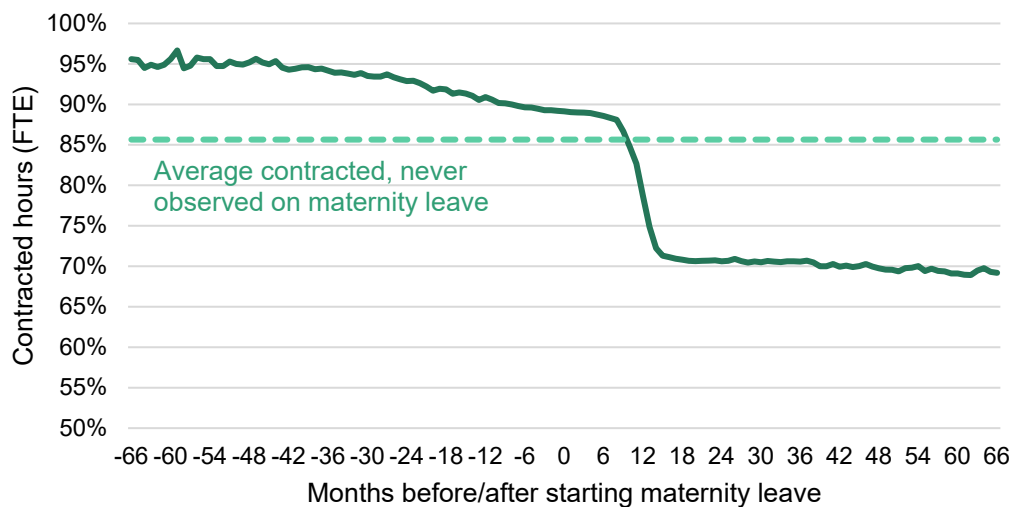
Figure A.2. Midwives' hours before and after maternity leave



Note: Contracted hours in non-bank assignments, restricted to midwives aged under 50 with strictly positive contracted hours.

Women midwives aged under 50 are slightly younger on average (with a median age of 36.2 years) than non-midwives (37.6 years). In any given month, more midwives (4.4%) than nurses who are not midwives (3.4%) are on maternity leave. Moreover, we observe a second maternity leave for 29% of midwives for whom we observe a first maternity leave, but only for 24% of non-midwife nurses. Part of the explanation for lower full-time working rates before maternity leave is therefore likely to be that a higher share of midwives' maternity leaves correspond to second or higher-order births. However, even focusing on those midwives who worked full-time before birth, full-time rates are particularly low after their return: women who were observed with contracted hours of 100% (or more) between two and one years before starting their first observed maternity leave, had contracted hours of just 68% of full-time 15–30 months after starting maternity leave if they were midwives, compared to 80% for non-midwife nurses.

Figure A.3. Midwives' contracted hours



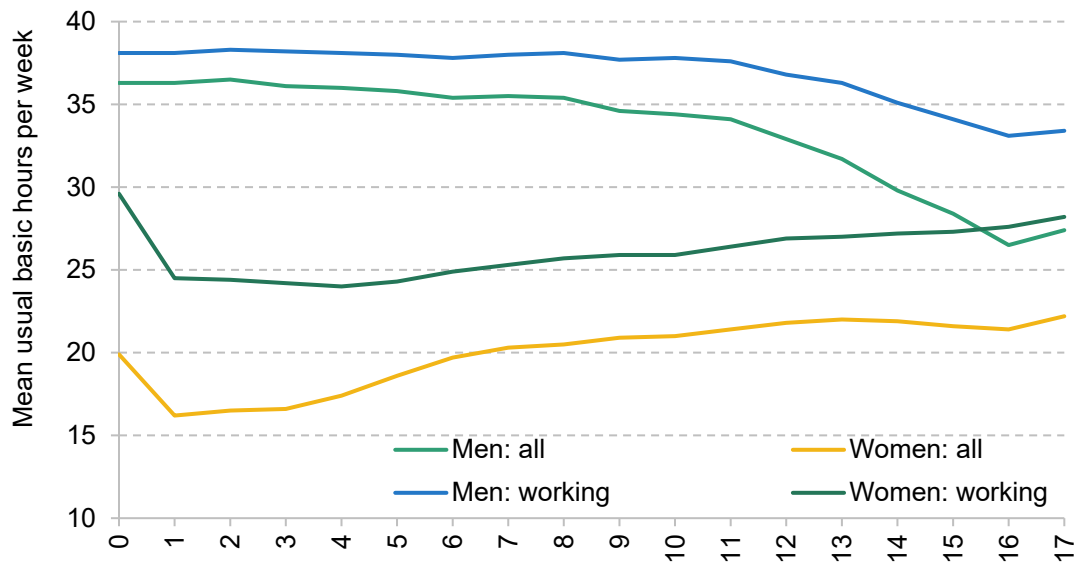
Note: Contracted hours in non-bank assignments. Only women currently working as midwives contribute to the average at each time point.

A3. School entry and women's labour force participation

Figure A.4 shows the mean basic hours per week for men and women by the age of the youngest child. We show the mean for all survey respondents (including those who do not work and therefore have zero hours), and for those who work (and therefore have non-zero hours). The difference between the two is determined by the employment rate.

For women, we see basic hours fall between age 0 and age 1 as women return from maternity leave. The mean number of hours for all women then remains stable until age 4 before rising between age 4 and 6. By contrast, the mean number of usual hours for women who work remains unchanged until age 6. This suggests that increases in employment rates around the time when children start school is an important driver of the increase in labour supply. As shown in Figure 3.10 (in the main text), the hours of women who work in the public sector remain unchanged between when a youngest child is between 1 and 8. In the private sector, hours start to increase after a woman's youngest child is 4. This is partly the result of the changing composition of the workforce as more women go back to work. For women who have been in their jobs for at least two years, there is a slight increase in mean hours in both the public and private sectors between those who have youngest child aged 4 and those who have a youngest child aged 5.

Figure A.4. Mean basic hours for those with children 17 years and under by the age of the youngest child



Note: QLFS, January 2014 to October 2019. Includes only households with a youngest child 17 years and younger. Mean basic hours (all) include those who are not working and therefore have zero usual basic usual hours. Mean hours (working) includes those who have positive (non-zero) usual basic hours.

For men, mean hours for all and for those who work remain constant until a youngest child is 8. The mean of overall hours and worker hours are similar, as labour force participation is high in this group. Overall hours start to fall after age 8 and more steeply after age 12. Hours for workers fall, but by less. This pattern of falling hours is not seen for women with older children.

A4. Hours in disaggregated geographies

Figure A.5. Contracted hours of nurses/midwives one to three years after maternity leave

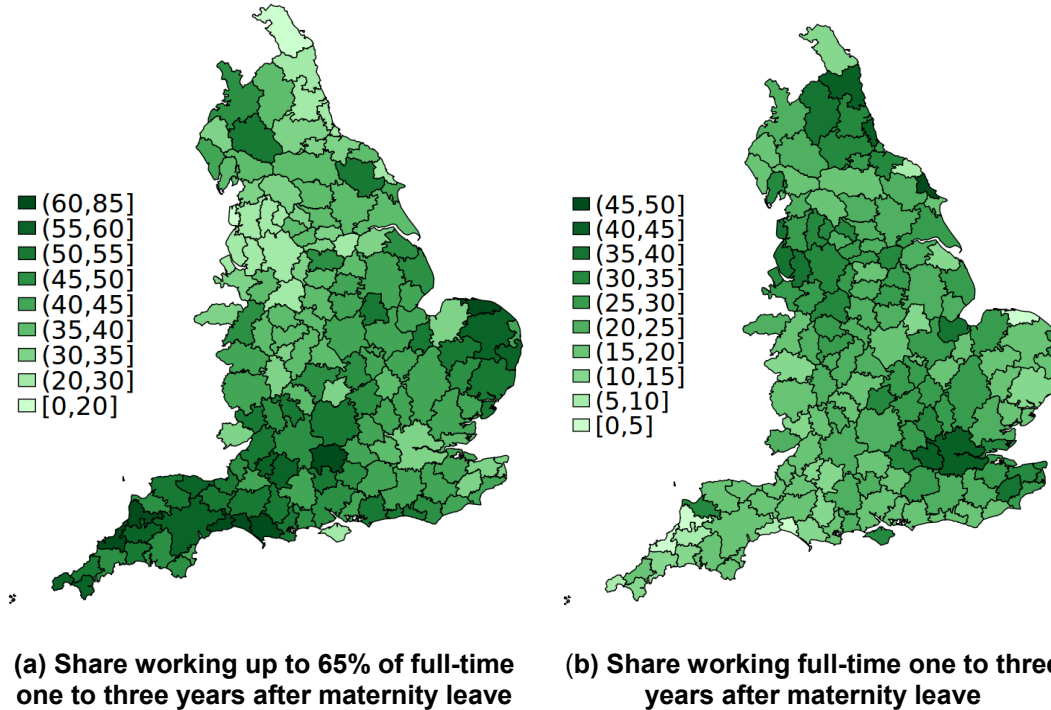
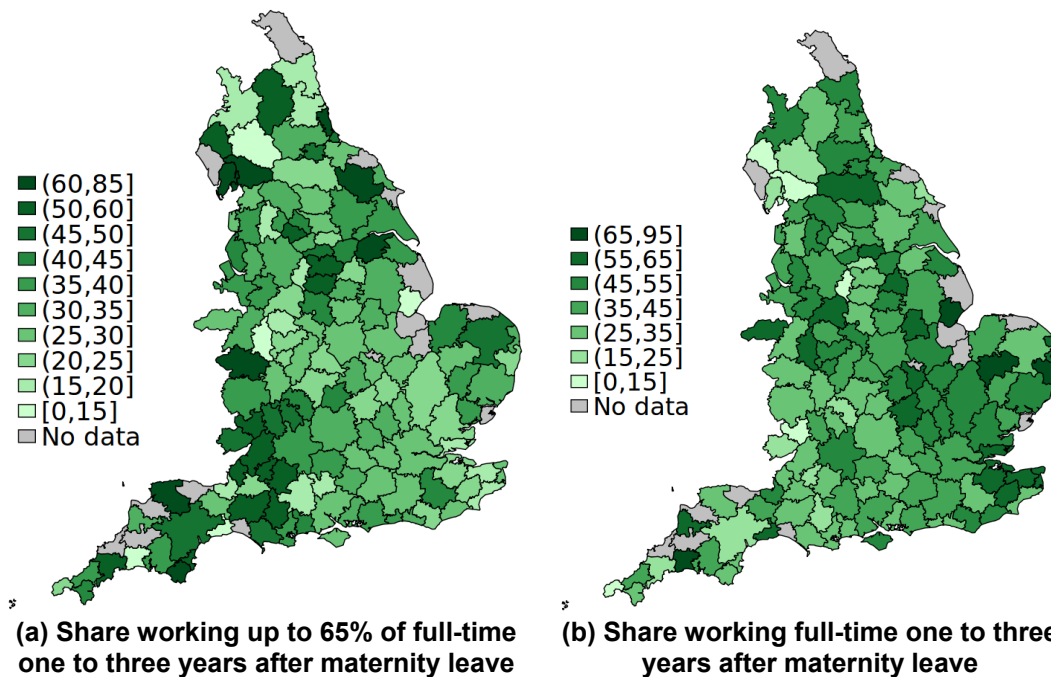


Figure A.6. Contracted hours of doctors and dentists one to three years after maternity leave



Note: Travel-to-work areas with fewer than 20 observations of doctors and dentists one to three years after maternity leave are marked as 'no data'.

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