

Care Around Birth, Infant and Mother Health and Maternal Health Investments - Evidence From a Nurse Strike

Abstract

Care around birth may impact child and mother health and parental health investments. We exploit the 2008 national strike among Danish nurses to identify the effects of care around birth on infant and mother health (proxied by health care usage) and maternal investments in the health of their newborns. We use administrative data from the population register on 39,810 Danish births in the years 2007-2010 and complementary survey and municipal administrative data on 8,288 births in the years 2007-2009 in a differences-in-differences framework. We show that the strike reduced the number of mothers' prenatal midwife consultations, their length of hospital stay at birth, and the number of home visits by trained nurses after hospital discharge. We find that this reduction in care around birth increased the number of child and mother general practitioner (GP) contacts in the first month. As we do not find strong effects of strike exposure on infant and mother GP contacts in the longer run, this result suggests that parents substitute one type of care for another. While we lack power to identify the effects of care around birth on hospital readmissions and diagnoses, our results for maternal health investments indicate that strike-exposed mothers—especially those who lacked postnatal early home visits—are less likely to exclusively breastfeed their child at four months. Thus reduced care around birth may have persistent effects on treated children through its impact on parental investments.

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1 Introduction

Evidence on the effect of care around birth on mothers' and children's health is important for at least two reasons. First, universally accessible care around birth may play an instrumental role for promoting population health and preventing downstream costs to the health system. These costs can arise from untreated conditions that result in serious health issues and, consequently, the uptake of care from more specialized health care providers. Second, a central objective of care around birth is to promote parental health investments, such as breastfeeding. Given a recent emphasis on the importance of early investments for short- and longer-run child outcomes (for an overview, for example, Almond and Currie, 2011), knowledge on the impact of care around birth on parental investment decisions is important for policy.

This paper exploits a national strike among all Danish nurses in spring 2008 to identify the effect of care around birth for a low-risk population of mothers and infants on mother and child health and maternal health investments. Care around birth consists of midwife consultations, a postpartum hospital stay, and home visits by trained nurses. The strike impacted all three types of preventive and non-emergency nurse services, which were available on a lower level during the strike period. We exploit this supply-side shock to circumvent the endogeneity problems that flaw analyses of the effect of care around birth, i.e., we account for selection of mothers and children into more intensive care based on characteristics that are unobserved to the researcher.

Using population data on Danish births from 2007-2010, we show that the 2008 strike caused clear departures from overall trends in care provision. By focusing on mothers locally around the 2008 strike period, we furthermore illustrate that the *timing of birth relative to the strike* resulted in different degrees of treatment intensity (see Figure 1 for an illustration): As an example, mothers who gave birth during the first days of the strike received all midwife consultations but were discharged from hospital early and did not receive early home visits. Similarly, mothers who gave birth towards the end of the two-months strike did not receive all regular midwife contacts, were discharged early, but received early home visits after discharge (as the strike was finished by the time they were discharged). These observations justify our identification strategy: We compare the differences in outcomes for children and mothers in a set of periods defined relative to the 2008 strike, to the same differences in outcomes of mothers and children in the same periods in 2009 (difference-in-differences framework).

Children and mothers who were impacted by the strike have more general practitioner (GP) contacts in the first month of the child's life. This increase in health care usage may indicate both, underlying health problems of treated mothers and children and substitution of one health care service with another in the setting of universal health insurance in Denmark (i.e., a setting where GP visits are free of charge.) Exploiting the variation in treatment intensity, we show that especially for children, this increase of GP visits appears to be driven by a lack of early home visits by trained nurses, who usually monitor

1 children’s health and advise parents on infant care. We find no strong persistent effects on longer-run
2 health care usage (GP contacts). Moreover, we find no effects on hospital readmissions or a set of relevant
3 diagnoses (child nutritional problems, postpartum maternal complications). Unfortunately, these results
4 are imprecise, likely due to power issues. Additionally, nurses managed to keep up a minimum level of
5 care, and we do not observe which women were exposed to lower levels of care because of the strike, i.e.,
6 we present intent-to-treat effects of strike exposure.

7 Taken together, our findings suggest that the initial GP effect may mainly reflect substitution of one
8 type of care with another in the general population of mothers and children without health risks and
9 this substitution may have been instrumental in preventing longer-run health problems for strike-exposed
10 mothers and children. However, turning to an analysis of the impact of the strike on maternal investment
11 decisions, we find indication for the strike impacting mothers’ probability of breastfeeding exclusively for
12 at least four months. This finding gives further credibility to earlier studies—based on smaller samples
13 and less comprehensive data—on the impact of the 2008 strike (Kronborg et al., 2012). Furthermore,
14 because we find effects on breastfeeding, an issue GPs typically do not provide counselling on, our results
15 point to the importance of the content of postnatal care visits. Thus reduced care and topic-specific
16 guidance around birth may have potential longer-run consequences on children through their effect on
17 parental investments.

18 Our findings contribute to the relatively small literature on the short-run effects of care around birth.
19 A number of studies has examined the benefits of highly specialized care, such as prenatal care for at
20 risk-populations (Joyce, 1999; Abrevaya and Dahl, 2008), neonatal medical interventions (Almond et al.,
21 2010; Bharadwaj et al., 2013; Freedman, 2012) or targeted home visits by health professionals (Olds et al.,
22 1997, 1998; Eckenrode et al., 2010; Gertler et al., 2013). Most papers suggest important positive effects
23 of these targeted interventions.

24 However, our understanding of the returns to care that is provided to low-risk mothers and infants,
25 is still limited. While some studies on the impact of care around birth for a general population of
26 mothers find very limited or no health effects (Fiscella, 1995; Evans and Lien, 2005; Currie and MacLeod,
27 2008; Almond and Doyle, 2011), two recent studies from Denmark and the Netherlands suggest that
28 there may be important short- and longer run effects in these universal health care settings: Daysal
29 et al. (forthcoming) show that hospital (vs home births) for complying, low-risk mothers and their
30 children has important infant mortality benefits in the Netherlands. Additionally, recent evidence from
31 Denmark demonstrates negative longer-run consequences of mandated shorter postpartum hospital stay
32 (for all multiparous mothers) on health and schooling outcomes of children (Sievertsen and Wüst, 2014).
33 Importantly, Sievertsen and Wüst (2014) show that both a direct health channel and a parental response
34 channel account for longer-run negative impacts of early discharge on child outcomes: At risk-mothers
35 who are discharged early are less likely to breastfeed exclusively for four months and their children are less

1 likely to receive all scheduled vaccines. Our finding of shorter breastfeeding durations for strike-exposed
2 mothers confirms this earlier finding that early postnatal care impacts parental investments.

3 Moreover, while studies exploiting historical records on universal home visiting in Denmark have
4 demonstrated positive short- and long-run health benefits of the program (Hjort et al., 2014; Wüst, 2012),
5 we know little about the causal effects of contemporary, universal home visiting programs. Guldager
6 (1992) has compared families across areas in Copenhagen with ordinary services by home visiting nurses
7 and with nurse shortages in 1980. The study finds a positive impact of universal home visiting on
8 parent-reported measures of self-confidence and investments. While the design of this study is promising,
9 concerns about the validity of the comparison across areas remain. Furthermore, the outcomes studied
10 were mainly collected with a retrospective survey among a small sample of parents.

11 Given its large impact on health care spending in many countries, analyses of the health effects of
12 care for a general population of mothers and infants are highly relevant. Our study extends existing work
13 by focusing on changes in the pre- and postnatal care package that may be of particular importance for
14 parental investment behaviors. The article is organized as follows. Section 2 contains relevant background
15 information on the Danish health care system and the 2008 strike. Section 3 describes our data and section
16 4 presents our empirical strategy. Section 5 presents results and robustness checks. Section 6 concludes.

17 **2 Background: Care around birth in Denmark and the 2008** 18 **strike**

19 In Denmark, the timing and content of prenatal care, and all matters regarding hospital and home
20 births are centrally regulated by the Danish National Board of Health (DNBH). The DNBH also issues
21 regulations for the home visiting program, which is implemented by the Danish municipalities. All
22 pregnant women have access to free public pre- and postnatal care, including birth at a public hospital.
23 There are no private birth clinics and only very few private suppliers of pre- and postnatal care services,
24 such as private midwife clinics. Those clinics account for a negligible share of services provided to pregnant
25 women and new mothers.

26 Prenatal care consists of services provided by midwives and GPs, who monitor pregnant women's
27 health and the progress of the pregnancy. The timing of midwife consultations during pregnancy puts
28 special emphasis on the second and third trimester (The Danish National Board of Health [Sund-
29 hedsstyrelsen], 1998). In 2008, all pregnant women were offered three scheduled GP visits (in weeks
30 6-10, 24, and 35), seven midwife consultations (around weeks 12, 16, 20, 28, 32, 38, and 40), and
31 two ultrasound examinations (around weeks 12 and 20) (The Danish National Board of Health [Sund-
32 hedsstyrelsen], 1998, 2009). At-risk groups of mothers received additional interventions. No changes to
33 the recommended prenatal care occurred in the period 2007-2009.

1 All hospital births are performed under the supervision of midwives (98 percent of children are born
2 in hospitals). Physicians only intervene in the case of complications. After birth and discharge from
3 hospital, trained municipal home visiting nurses monitor infants' health and development, promote child-
4 parent interactions, and encourage and support breastfeeding. GPs monitor infants' and mothers' health,
5 conduct vaccinations, and refer infants and mothers to other health professionals, if necessary. In 2008,
6 women and infants were entitled to around seven home visits (less strictly enforced for higher parity
7 mothers) and three scheduled child GP (and one to two scheduled mother GP) visits in the first year of
8 the infant's life (The Danish National Board of Health [Sundhedsstyrelsen], 1995, 2007).

9 During the collective agreement negotiations in 2008, the health professionals' union had asked for
10 a 15% wage increase and—in the light of a segregated Danish labor market—the establishment of a
11 commission on the gender wage gap. When employers and trade unions did not reach an agreement, on
12 April 15, 2008, approximately 75.000 publicly-employed midwives, nurses and home visiting nurses went
13 on strike. The strike lasted until June 14, 2008 and cost the health trade unions 650 million DKK (about
14 90 million Euro) (Stamhus et al., 2009). It resulted in a collective agreement granting a 13.3% wage
15 increase over three years to nurses and other health professionals.

16 As only a minimum number of nursing staff securing emergency care was on duty, during the two-
17 month strike period 372,516 operations were cancelled (Andersen and Frederiksen, 2010). Moreover,
18 routine procedures such as pre- and postnatal care as well as hospitalizations in general were impacted,
19 exposing most women and infants in the low-risk pregnancy-group to lower levels of care. During the
20 period until June 14, 2008 the strike additionally led to major shortages in the municipal home visiting
21 programs.

22 **3 Data and graphical analysis**

23 We use data from three sources. Our study and all its data sources were registered at the Danish
24 Data Protection Agency (Datatilsynet). In Denmark, no ethical review for observational studies using
25 administrative register data or survey data is required or offered. First, we use population administrative
26 data that covers all births in Denmark 2007-2010. The administrative data contain information on the
27 date of birth, length of hospitalization at birth, contacts to health professionals (GPs, midwives), medical
28 diagnoses given at hospitals, and an encompassing set of mother and infant background characteristics.
29 These characteristics are observed by medical professionals and most likely impact the allocation of care
30 both during the strike and under the default care regime. We use an indicator for child sex, the mother's
31 and father's years of education, indicators for mother's and father's unemployment status, mother's and
32 father's taxable income, and indicators for missing covariates for mother or father (see also Appendix
33 Table A.1 in the Online Appendix [INSERT LINK TO ONLINE FILE](#)). We do not control for other child

1 birth outcomes, that we observe, because these outcomes are potentially impacted by the strike and its
2 impact on prenatal care.

3 As the national administrative data does not contain information on the timing and intensity of the
4 municipal home visiting programs, we use complementary data from two sources. The Child Health
5 Database (CHD) for the period 2007-2009 is municipal administrative data. It contains data collected by
6 nurses on all infants from 13 municipalities on Zealand and one municipality in Jutland. Home visiting
7 nurses register information on the municipality of residence, the child's date of birth, frequency and
8 timing of visits, child development, and mothers' breastfeeding behavior. Unfortunately, we cannot link
9 the CHD data to the national register data and thus we do not use controls from the administrative data
10 in the analyses based on CHD data.

11 Finally, we add data from a survey on home visiting and breastfeeding behavior from the region of
12 Central Jutland. The survey was performed among women who had given birth during the strike period
13 and a control period in fall 2008 (for details see Kronborg et al., 2012). The survey contains information
14 on home visiting nurses' visits and mother-reported breastfeeding measures.

15 To compare the characteristics of parents and children in our main data source and the two comple-
16 mentary data sources, Appendix Table A.2 in the Online Appendix [INSERT LINK TO ONLINE FILE](#)
17 shows means for relevant variables drawn from the administrative register data for the full population,
18 all families in the areas covered by the CHD, and all families in the areas covered by the survey data (for
19 families who have a child 56 days before and during the strike in 2008). As the table illustrates, there are
20 some differences between the full population data, the urban areas around Copenhagen (covered in the
21 CHD) and the rural area in Jutland covered in the survey. While parents in the area around Copenhagen
22 are somewhat older and of higher income as the country average, the opposite holds for parents in the
23 survey region. However, with respect to other factors, such as maternal education and both parents'
24 unemployment, the table does not suggest large differences in the samples. Also measures for the health
25 at birth of the children born in the different areas do not indicate major differences. Moreover, given that
26 the two data sources represent rather different areas of Denmark (with respect to urbanity, geographic
27 location and a subset of parental characteristics), we believe that they are a meaningful addition to our
28 population data used in the main analyses.

29 **3.1 Outcome measures**

30 Our primary outcome measures come from the administrative data: First, we measure the number of GP
31 contacts for mothers and infants in both the first 28 days and the first 1-3 years of the child's life. We also
32 compute the total amount of fee-for-service payments to GPs for each child/mother in the given periods.
33 Second, we examine mother and infant readmissions to hospitals (in the first month and in the first year
34 of the child's life). Third, we examine a set of diagnoses given to children that are in contact with a

1 hospital during the first month of life (admitted or outpatient) and that related to nutritional problems,
2 such as jaundice. Fourth, we construct a measure of relatively frequent mother post-birth complications
3 and operations within three months after birth (Danish National Board of Health, 2005). For details
4 on the diagnoses and complications measures consult Appendix A.1 in the Online Appendix INSERT
5 LINK TO ONLINE FILE. To further test whether the strike led physicians and nurses to manipulate
6 the timing of births and change the type of care they provided during labor, we examine whether the
7 weeks around the strike impacted the rates of Caesarean sections (CS), among them the unplanned ones.
8 While planned CS are usually scheduled due to complications during the pregnancy, unplanned CS signal
9 problems during labor. An increase in unplanned CS may also signal that the quality of hospital births
10 themselves (and not only pre- and postnatal care) was impacted during the strike. In Denmark, CS solely
11 due to maternal request (and no medical indication) are not common practice (Danish National Board
12 of Health, 2005).

13 To examine the impact of the strike on parental investments, we exploit the complementary data
14 and study breastfeeding duration. We study breastfeeding because (1) the postnatal (and prenatal) care
15 program explicitly aims at promoting breastfeeding and (2) breastfeeding duration is reported in our
16 data with few missing values and nurses focus on the correct report of this measure. One important
17 limitation of our study is that we lack other interesting measures of parental investments such as parent-
18 child interactions, which are only reported in selected years in the CHD and therefore unfortunately
19 cannot be studied here. However, we believe that while the size and economic significance of longer-run
20 breastfeeding effects are still debated in international expert and practitioner arenas (Fletcher, 2011;
21 Colen and Ramey, 2014; American Academy of Pediatrics, 2012; Kramer et al., 2001, 2008; Der et al.,
22 2006; Del Bono and Rabe, 2012; Sievertsen and Wüst, 2014), breastfeeding duration is a reliable and
23 relevant measure for early parental investments. Given high and stable breastfeeding rates in Denmark
24 and the resulting sample size requirements (or effect size requirements) for detecting an effect of strike-
25 exposure on breastfeeding rates, we pool the two available data sources (CHD and survey data) and
26 create an outcome variable that takes the value one if a mother breastfed exclusively for four months.

27 Table A.1 presents summary statistics for a sample of birth 56 days before and the 58 days during
28 the 2008 strike. The table shows that there are no significant differences in maternal, paternal and child
29 characteristics across periods. In the following analyses we focus in greater detail on the impact of the
30 timing of strike exposure.

31 **3.2 Graphical analysis**

32 Figure 2 shows the changes in care levels in and around the strike and the clear departure from the
33 longer-run trends in the years 2007-2010. All figures plot monthly averages. The vertical lines mark the
34 strike months and the respective months in 2007, 2008, 2009 and 2010. The top panel in Figure 2 is based

1 on administrative data and plots averages for the number of midwife consultations and the percentage
2 of mothers discharged from hospital on the day of birth. Given the higher intensity (more consultations)
3 of midwife care during the third trimester, the decrease in the number of midwife consultations persists
4 for women giving birth during the first months after the strike (as these women were pregnant during
5 the strike and cannot catch up with respect to the total number of midwife visits). For early discharge
6 rates, we see a clear upwards jump on the day the strike started and a clear downwards jump the on
7 day the strike ended. The bottom panel of Figure 2 uses data from the Child Health Database (CHD)
8 and shows the percentage of mothers with an initial home visit by a home visiting nurse in 13 Danish
9 municipalities. The figure shows a clear trend break in the probability of receiving an early home visit for
10 mothers who give birth during the strike. Appendix Figure A.1 in the Online Appendix [INSERT LINK](#)
11 [TO ONLINE FILE](#), also based on the CHD, shows that the average age of children at the first home visit
12 for children born shortly before and during the strike was higher. At the same time, at one year, there
13 were only small differences in the the average number of home visits in the first year of the child’s life
14 across periods.

15 Although the CHD does not cover all Danish municipalities, we show that our findings for the reduced
16 availability of home visiting can be generalized to all Danish municipalities. Besides anecdotal evidence,
17 we rely on data from a 2008 survey among mothers who gave birth in the region of central Jutland during
18 the strike (April 15-June 14) and a control period (August 1-October 31) (Kronborg et al., 2012). In
19 these data we show that the same pattern (lower home visiting availability) was present also in other
20 municipalities, not covered by the CHD (appendix figure A.8 in the Online Appendix [INSERT LINK TO](#)
21 [ONLINE FILE](#)). In sum, we illustrate clear trend breaks in all three aspects of care around birth. These
22 trend breaks give rise to our identification strategy, described in the next section.

23 4 Empirical Strategy

24 Figure 3 focuses on the data used in our analyses and shows the 2008 and 2009 average levels of care
25 around birth for four-day bins in the 80 days before the strike and the strike period (April 15-June
26 14, 2008). The figure plots averages for the number of midwife contacts, the percentage of women and
27 infants discharged in the day of birth and the percentage of women with an early home visit. The figures
28 show no jumps in the respective treatments in 2009. Furthermore, the figures illustrate (1) the similarity
29 of trends in care in 2009 and 2008 in non-treated weeks and (2) the differential exposure of women at
30 different points in time relative to the strike period. As an example, trends in early discharge rates are
31 flat in the pre-strike period for both 2009 and 2008 (although longer-run increasing trends in the use of
32 early discharge show up as a higher level of early discharge in 2009). Moreover, the impact of the strike
33 on midwife contacts emerges for births that occur during the strike, while the impact of the strike on

1 home visiting nurses is already present for pre-strike births. Respective figures that plot these first stage
 2 relationships by parity of the child look very similar and are available in the online Appendix (figure A.6
 3 INSERT LINK TO ONLINE FILE). Finally, Appendix Figure A.9 INSERT LINK TO ONLINE FILE
 4 confirms that the strike was temporary, i.e., that care levels went “back to normal” after the strike.

5 Because the strike impacted mothers and children differently depending on the date of birth, we focus
 6 on the effect of being born in a set of periods around the strike. That is, we compare the differences
 7 in outcomes of children and mothers with birth dates in eight two-week periods around April 15, 2008
 8 (and thus exposed to different features of the strike) to the outcomes of children and mothers in the same
 9 periods in a control year. We perform our analyses using either 2009 or 2007 as comparison years. On
 10 the one hand, children born in 2007 are potentially impacted by the strike when they are one year old
 11 and thus our measures for longer-run health may be impacted. On the other hand, children born in 2009
 12 are potentially impacted by longer-run consequences of the nurse strike. For brevity (and as anecdotal
 13 evidence suggests that the impact of the strike on 2009 care provision was at most minimal), we focus on
 14 the 2008/2009 comparison in the main analyses of this paper but analyses using the 2007/2008 comparison
 15 are available on request.

16 As the strike impacted several aspects of care around birth, we focus on the reduced form relationship
 17 of strike exposure and outcomes. Thus we estimate:

$$\begin{aligned}
 Y_{ithm} = & \beta_0 + \sum_{j=-3}^3 \phi_j 1(bin14_{ihm} = j) \times Year2008_t & (1) \\
 & + \sum_{j=-3}^3 \alpha_j 1(bin14_{ihm} = j) + \beta_1 Year2008_t \\
 & + \gamma' X_{ithm} + \lambda_m + \mu_h + \theta_{weekday} + \epsilon_{ithm}
 \end{aligned}$$

18 where Y is the outcome of interest, such as infant GP contacts, for infant i born in year t in hospital h
 19 and residing in municipality m . For the analysis based on national administrative data, X_{ithm} is a set of
 20 mother and child control variables. $Bin14_{ihm}$ is a set of fortnight-indicators centred around the date of
 21 the start of the strike (e.g., $Bin14_{ihm} = -1$ if the child is born between April 1 and April 14). We omit
 22 the indicator for the two-week period 8-6 weeks before the strike. The main effects for the fortnight bins
 23 and $Year2008_t$ account for the effect of being born in a given period (in any year) and birth year-specific
 24 shocks. To further rule out that differential health status or care availability by day of the week confound
 25 our analyses, we include $\theta_{weekday}$, which captures weekday fixed effects. Finally, λ_m and μ_h are fixed
 26 effects for municipality of residence and hospital of birth (again, the latter we can only include in analysis
 27 of national register data). We estimate equation 1 both on our full sample and separately for primi- and
 28 multiparous mothers.

1 The vector of coefficients ϕ_j in equation 1 represents the reduced form estimates for the effect of
2 exposure to specific weeks before and during the 2008 strike on outcomes. Importantly, we estimate the
3 average intent-to-treat effect of strike exposure on all women and on women of different parity/other
4 characteristics. Because of the differential treatment by birth date, we find a simpler difference-in-
5 differences estimate—that compares the differences in strike and non-strike births from 2008 and the
6 same periods in 2009—less attractive.

7 For our identification strategy to be valid, we rely on the assumption that the difference in outcomes
8 of mothers/infants across the weeks that we compare in each year would have been the same in 2008
9 and 2009 in the absence of the strike (common trend assumption). We show in graphs for our central
10 outcomes (see, e.g., appendix figure A.4 in the Online Appendix [INSERT LINK TO ONLINE FILE](#))
11 that trends in outcomes over the 2007-2010 period are very smooth. Conveniently, our strategy (that is
12 based on comparisons in a relatively short timespan during spring in a set of years) should take care of
13 any season of birth-effects. As a robustness check, Appendix Table A.4 in the Online Appendix [INSERT](#)
14 [LINK TO ONLINE FILE](#) shows our main analysis with additional pre-periods. While this table shows,
15 as expected, some significant differences in pre-periods, the estimates for these differences are very small
16 and mostly imprecise. This finding is also in line with Figure 3 and thus gives further credibility to our
17 main specification.

18 Finally, we assume that women did not time their birth according to knowledge about the strike. As
19 the strike came up rather surprisingly and the length of the strike was relatively short and hard to predict,
20 we find this assumption reasonable. Moreover, Appendix Figures A.3a and A.3b in the Online Appendix
21 [INSERT LINK TO ONLINE FILE](#) show that the density of births in 2007-2009 displays seasonality but
22 no indication for manipulation during the 2008 strike period.

23 **5 Results**

24 **5.1 Main health results**

25 Figure 4 is analogue to Figure 3 and presents graphical analyses of our main outcome, mother and child
26 GP contacts in the first month of the child's life. The Figure suggests that for children and mothers
27 first-month GP contacts increase during the strike (appendix figure A.9 in the Online Appendix [INSERT](#)
28 [LINK TO ONLINE FILE](#) confirms that this increase only persisted during the strike). However, for
29 children the number of GP contacts increases already in the weeks up to the strike, a finding that may
30 hint at the importance of home visiting.

31 Table 1 presents the results for our main outcomes based on equation (1) for all mothers and their
32 children. In each row, we present the coefficients on the interaction term of the year 2008-indicator with
33 two-weekly indicators. The reference group are children born between 56-43 days before that day. We

1 center our data around the first day of the strike. In the analyses based on administrative data, we
2 allow for municipality, hospital and day of the week fixed effects and we control for a set of parent and
3 child characteristics (an indicator for child sex, the mother’s and father’s years of education, indicators
4 for mother’s and father’s unemployment status, mother’s and father’s taxable income, and indicators for
5 missing covariates for mother or father). In analyses based on the CHD and survey data we only can
6 include day of the week and municipality fixed effects.

7 Panel A in Table 1 presents the regression-equivalents of the graphs for the effect of the strike on care
8 around birth (the first stage). The strike decreases the total number of midwife contacts, most so for
9 women later during the strike. Discharge rates increase sharply in the first weeks of the strike and stay
10 high during all strike weeks. During the strike, mothers are between 12 and 17 percentage points more
11 likely to be discharged on the day of birth, at the relevant mean this figure translates to a 100 percent
12 increase of discharge on the day of birth rates. Finally, and as discussed above, the impact of the strike
13 on the initial home visits emerges already for mothers giving birth in the two-week period up to the strike
14 and is strongest for mothers giving birth in the beginning of the strike period. Children born in these
15 weeks who received the early home visit are also older at the first visit.

16 Turning to our outcome measures, we find that mothers and children affected by the strike have more
17 GP visits in the first month of the child’s life. Again the effect on GP contacts emerges already in the
18 pre-strike periods, with an effect size that is largest for the earliest strike weeks and thus the weeks with
19 the lowest share of mothers who have received the initial home visit. We also find that GP fees are higher
20 in the given weeks (on average 11-57 DKK or 1.5-7.6 EURO). This increase may reflect both the number
21 of visits and the intensity of treatment during those visits. The finding of a response with a higher
22 frequency of GP visits may point to the importance of early home visits for children’s (and mothers’)
23 health care usage (recall that mothers who give birth before the strike are treated, i.e., receive fewer and
24 later home visits, due to the timing of their birth). Health professionals monitor children’s health and
25 advise parents on issues such as breastfeeding. In their absence parents may turn to other sources of
26 support. Thus we may view this immediate health care demand as a substitution effect, i.e., mothers and
27 children who lack one type of care during the strike demand care from another (free of charge) provider.

28 In line with this suggestion, we only see limited evidence for persistent health effects for children and
29 mothers in our full sample (measured as GP contacts in the first three years of the child’s life). Also
30 considering mother and child readmissions to hospital and a set of diagnoses and complications after
31 birth, we do not find clear patterns, partly due to power issues (see appendix table A.3 and appendix
32 figure A.5 in the Online Appendix [INSERT LINK TO ONLINE FILE](#)). We are constraint by the number
33 of treated births in the relatively short strike period.

34 Finally, Table 1 shows no indication for manipulation through change of birth mode or a change in
35 the quality of birth services, e.g., for children born just before the strike starts (prevalence of Ceasarean

1 sections). These results also suggest that the emergency staff at work managed to maintain an adequate
2 service level at birth wards.

3 **5.2 Parental investment results: Breastfeeding duration**

4 To examine the impact of care around birth on parental investments, we use the two complementary
5 data sources described in section 3 and study maternal breastfeeding behavior. While we attempt to
6 construct comparable measures in the two data sources, we have to keep the following limitations in
7 mind: First, the data sources do not cover entire Denmark. Second, while the CHD contains nurses'
8 registrations of breastfeeding behavior, the survey from Central Jutland contains retrospective maternal
9 reports. However, in both data sources, around 60 percent of mothers breastfeed exclusively at least until
10 month four of the child's life and the rates are similar for mother reports and nurse registrations. Third,
11 the survey data from Central Jutland only contributes with births during the strike (April 15-June 14,
12 2008) to our analysis sample, from the CHD we include birth from the weeks around the strike in 2007-
13 2009 (as in our main analysis). Having these drawbacks in mind, we pool the data sources to increase
14 power.

15 Table 2 presents the results of our analyses based on the pooled CHD and survey data. As the first
16 panel shows (for the pooled data on all parity births) the impact of the strike on the initial home visits by
17 nurses after birth emerges for the weeks up to the strike. The next three panels show estimation results
18 for three alternative samples that differ with respect to the control periods that we include: The second
19 and third panel only compare births in 2007/2008 and 2009/2008, respectively. The last panel uses all
20 observations from the "control years". Thus we compare the strike-year periods to both 2007 and 2009,
21 i.e. we compare the week \times 2008-indicators to the baseline of this pooled data (2007 and 2009 births).

22 While the estimates in Table 2 are less precise than our results for early GP visits, the table cau-
23 tiously suggests that strike exposure impacts the probability of breastfeeding exclusively for four months
24 negatively for mothers who give birth in the weeks up to and early in the strike in 2008 relative to their
25 2007/2009 counterparts. Moreover, as Figure 5 illustrates, the estimates for the impact of the strike on
26 breastfeeding of children born relatively "far away" from the start of the strike are close to zero. The
27 only significant and negative estimates—that suggest a negative impact of strike exposure (and especially
28 lack of early home visiting) on breastfeeding duration—are in the weeks around the start of the strike.
29 Children born in these weeks (days 0-13 of the strike) are also the ones who are least likely to having
30 received an initial home visit. These estimates very cautiously suggest that exposed mothers (who are
31 the ones who had to wait longest for an early home visit or never received one) are around 11 percentage
32 points—or 15 percent at the relevant sample mean—less likely to exclusively breastfeed at four months.

1 5.3 Robustness and Heterogeneity

2 We have performed an extensive set of robustness tests. First, we use 2007 as our control year in our
3 analysis of health outcomes and find very similar results (as also illustrated in appendix figures A.6 and
4 A.7 in the Online Appendix [INSERT LINK TO ONLINE FILE](#)). Furthermore, we have run a “simpler”
5 difference-in-differences estimation that only compares two periods instead of a set of periods. Here we
6 have performed (1) a donut-hole approach that omits births in the period of transition into the strike and
7 measures full strike exposure (with one strike and one control period in 2008 and 2009) and (2) compared
8 spring and fall births in 2008 and 2009, respectively. The most robust finding in both approaches is again
9 the impact of the strike on short-run GP contacts.

10 Appendix Table A.5 in the Online Appendix [INSERT LINK TO ONLINE FILE](#) shows that our results
11 are robust to constraining our main analysis to the areas covered by the CHD and the survey. This
12 finding also suggests that the two complementary data sources are informative additions to our national
13 administrative data. Online Appendix Table A.6 [INSERT LINK TO ONLINE FILE](#) shows results that
14 are based on a sample of mothers and children, who are likely to be compliers (i.e. children in families with
15 non-first time mothers of at least 18 years of age, at least one parent with more than 14 years of schooling,
16 and family income in the top 33 percent). These results confirm our main analysis and suggest that the
17 strike impacted low-risk children most. Finally, Online Appendix Table A.7 [INSERT LINK TO ONLINE](#)
18 [FILE](#) shows a placebo test. We show that we find no consistent effects of the strike periods (on care
19 provision and outcomes) in two non-strike years (2009 and 2010). We only use the administrative register
20 data in this table. Estimates are mostly very imprecise and much smaller in magnitude. A graphical
21 analysis presented in Online Appendix Figure A.10 [INSERT LINK TO ONLINE FILE](#) confirms that the
22 2009/2010 comparison of births around the strike does not indicate similar systematic jumps in either
23 care provision or child and mother outcomes.

24 Our analyses on the full sample of children and mothers may conceal important differences across
25 children of different parity. Experienced mothers may not require the same intensity of care as first
26 time mothers. The data indicates that health care providers take mothers’ experience into account when
27 assigning levels care to them, both during the strike and under the default care regime (see appendix
28 figure A.6 in the Online Appendix [INSERT LINK TO ONLINE FILE](#)). Thus the strike hit mothers of
29 different parity at different levels of care (which in turn may affect the size of any effect).

30 Tables 3 and 4 show that overall patterns for the impact of the 2008 strike are similar across parity
31 (we omit longer-run GP outcomes and readmissions and diagnoses in these tables for brevity). Online
32 Appendix Table A.8 [INSERT LINK TO ONLINE FILE](#) shows the p-values for a test of the point-estimate
33 differences between the two sets of mothers being different from zero. The differences in estimates across
34 parity suggest some heterogeneity of the effect of the strike on home visiting. However, although the
35 graphical inspection (see appendix figure A.7 [INSERT LINK TO ONLINE FILE](#)) indicates a larger effect

1 on GP contacts for primiparous mothers, across all outcome measures we cannot reject the null hypothesis
2 of the point estimates being equal across parity (partly due to power issues).

3 In additional analyses, we have not found strong differences in the access to care during the strike
4 for mothers of different educational status, which constitutes one margin that is observed by health pro-
5 fessionals and may play a role for the allocation of care both before and during the strike. Also for GP
6 contacts in the first month of the child’s life, we see no clear indication for heterogeneous effects by edu-
7 cation of the mother (There is a very small tendency for more precise effects for highly educated mothers.
8 This finding may indicate that highly-educated parents are more actively searching for substitution.)

9 **6 Discussion and Conclusion**

10 Care around birth for low-risk mothers and their children is a cornerstone of developed health care
11 systems. Despite the importance that health care professionals and political actors denote to it, its
12 components and their effects on infant and mother health are still poorly understood. Specifically, we
13 still lack evidence on the effects of care for a general population of infants and mothers, and on the effects
14 of the timing and the composition of the care package.

15 Our study provides evidence on the short-run consequences of a supply shock that impacted the
16 availability of care around birth for a population of low-risk mothers and children in a developed and
17 universal health care system. In this setting, we find only short-run consequences of a decrease in care
18 around birth. The findings suggest substitution of one type of care for another, i.e. parents increase
19 their health care usage at alternative providers (such as GPs) as a response to a decrease in the standard
20 care provided. This finding has implications for many health care systems, which provide free-of-charge
21 care and the option to chose among health care providers. In these settings, policies that constrain
22 the available care by nurses and midwives may lead to unintended increases in health care use at other
23 providers. We also find some indication for the strike impacting breastfeeding duration negatively. This
24 finding suggests potential longer-run consequences of strike exposure for treated children.

25 Several limitations in our analyses need mention: the strike was only a short interruption in care for
26 mothers and children in Denmark, who went back to “default care” after a maximum of two months
27 strike-exposure. Also, neither midwife nor hospital or home visiting care fully disappeared. Thus the
28 strike most likely hit the most well-off mothers and infants and the emergency staff managed to select at-
29 risk mothers and children for more intensive care. As we only show an average effect of strike exposure we
30 likely understate the potential effects for subgroups in the population. Finally, due to its short duration
31 we only have relatively few treated mothers and children in our analyses.

32 We also face limitations with respect to the available measures of infant and mother health in admin-
33 istrative data (which is only imperfectly captured by health care usage and diagnoses given) and parental

1 investments (that obviously go far beyond our single indicator of breastfeeding duration). We still believe
2 that our analysis is a good starting point that should be extended by further studies on other aspects of
3 parental investment behaviors.

4 Power issues and the availability of data complicate our analyses and suggest that our analyses on
5 health care usage is not an appropriate point of departure for a proper cost-effectiveness analysis. If we
6 compare the costs of default care (midwife visits, hospital stay and home visits) with the strike situation
7 (less care in all three areas) in a stylized analysis and only consider one outcome, the increase in GP visits
8 in the first months, we are bound to find that the strike decreased costs to public health care. However,
9 this finding would only factor in the (relatively low) costs to extra GP care and not pay attention to the
10 potential costs that a low-intensity care regime may impose if implemented as a default: In this situation
11 mothers and children would not return to “standard care” after a short period and many more mothers
12 (at the lower end of the health and socioeconomic status-distribution) would be treated with low-intensity
13 care. Thus a simple calculation would most likely underestimate costs. Moreover, our findings carefully
14 suggest that care around birth impacts breastfeeding, a potentially important parental investment in
15 their children, negatively—either through acquired parental skills, knowledge or self-confidence. These
16 behavioral aspects are important to consider as benefits when analyzing the cost-effectiveness of care
17 around birth and when designing policies targeted at new parents.

18 **References**

- 19 Abrevaya, J. and C. M. Dahl (2008). The effects of birth inputs on birthweight: Evidence from quantile
20 estimation on panel data. *Journal of Business and Economic Statistics* 26(4), 379–397.
- 21 Almond, D. and J. Currie (2011). Chapter 15: Human capital development before age five. In O. Ashen-
22 felter and D. Card (Eds.), *Handbook of Labor Economics*, Volume 4, Part 2, pp. 1315–1486. Elsevier.
- 23 Almond, D. and J. Doyle (2011). After midnight: A regression discontinuity design in length of postpar-
24 tum hospital stays. *American Economic Journal: Economic Policy* 3(3), 1–34.

- 1 Almond, D., J. Doyle, A. Kowalski, and H. Williams (2010). Estimating marginal returns to medical
2 care: Evidence from at-risk newborns. *Quarterly Journal of Economics* 125(2), 591–634.
- 3 American Academy of Pediatrics (2012). Breastfeeding and the use of human milk. *Pediatrics* 129(3),
4 e827–e841.
- 5 Andersen, S. and M. Frederiksen (2010). Nice girls can also be on strike - women and labor conflicts
6 1968-1973 and 2008 [pæne piger kan også strejke - kvinder og arbejdskampe 1968-1973 og 2008].
- 7 Bharadwaj, P., K. V. Løken, and C. Neilson (2013). Early life health interventions and academic achieve-
8 ment. *American Economic Review* 103(5), 1862–91.
- 9 Colen, C. G. and D. M. Ramey (2014). Is breast truly best? estimating the effects of breastfeeding on
10 long-term child health and wellbeing in the united states using sibling comparisons. *Social Science &
11 Medicine* 109(0), 55 – 65.
- 12 Currie, J. and B. MacLeod (2008). First do no harm? tort reform and birth outcomes. *Quarterly Journal
13 of Economics* 123(2), 795–830.
- 14 Danish National Board of Health (2005). Cesarean section on maternal request - a medical assessment
15 [kejsersnit på moders ønske. en medicinsk teknologivurdering]. Report, Danish National Board of
16 Health.
- 17 Daysal, M., Trandafir, and R. van Ewijk (Forthcoming). Saving lives at birth: The impact of home births
18 on infant outcomes. *American Economic Journal: Applied Economics*.
- 19 Del Bono, E. and B. Rabe (2012). Breastfeeding and child cognitive outcomes: evidence from a hospital-
20 based breastfeeding support policy. ISER Working Paper Series 2012-29, Institute for Social and
21 Economic Research.
- 22 Der, G., G. D. Batty, and I. J. Deary (2006). Effect of breast feeding on intelligence in children: prospec-
23 tive study, sibling pairs analysis, and meta-analysis. *BMJ* 333(7575), 945.
- 24 Eckenrode, J., M. Campa, D. W. Luckey, et al. (2010). Long-term effects of prenatal and infancy nurse
25 home visitation on the life course of youths. 19-year follow-up of a randomized controlled trial. *Archives
26 of Pediatrics and Adolescent Medicine* 164(1), 9–15.
- 27 Evans, W. N. and D. S. Lien (2005). The benefits of prenatal care: evidence from the {PAT} bus strike.
28 *Journal of Econometrics* 125(1–2), 207 – 239.
- 29 Fiscella, K. (1995). Does prenatal care improve birth outcomes? a critical review. *Obstetrics & Gynecol-
30 ogy* 85(3), 468–479.

- 1 Fletcher, J. M. (2011). Long-term effects of health investments and parental favoritism: the case of
2 breastfeeding. *Health Economics* 20(11), 1349–1361.
- 3 Freedman, S. (2012). The effect of deregionalization on health outcomes: Evidence from neonatal intensive
4 care.
- 5 Gertler, P., J. Heckman, R. Pinto, A. Zanolini, C. Vermeersch, S. Walker, S. M. Chang, and S. Grantham-
6 McGregor (2013). Labor market returns to early childhood stimulation: a 20-year followup to an
7 experimental intervention in jamaica. Nber working paper no. 19185, National Bureau of Economic
8 Research.
- 9 Guldager, E. (1992). *The impact of the Danish home visiting program [Sundhedsplejen på vægten]*. Copen-
10 hagen: Munksgaard.
- 11 Hjort, J., M. Sølvsten, and M. Wüst (2014). Universal investments in infants and long-run health -
12 evidence from denmark’s 1937 home visiting program. Sfi working paper no. 8/2014, SFI-The Danish
13 National Center for Social Research.
- 14 Joyce, T. (1999). Impact of augmented prenatal care on birth outcomes of medicaid recipients in new
15 york city. *Journal of Health Economics* 18(1), 31 – 67.
- 16 Kramer, M., F. Aboud, E. Mironova, and et al (2008). Breastfeeding and child cognitive development:
17 New evidence from a large randomized trial. *Archives of General Psychiatry* 65(5), 578–584.
- 18 Kramer, M., B. Chalmers, E. Hodnett, and et al (2001). Promotion of breastfeeding intervention trial
19 (probit): A randomized trial in the republic of belarus. *JAMA* 285(4), 413–420.
- 20 Kronborg, H., M. Væth, and I. Kristensen (2012). The effect of early postpartum home visits by health
21 visitors: a natural experiment. *Public Health Nursing* 29(4), 289–301.
- 22 Olds, D., J. Eckenrode, H. C.R., et al. (1997). Long-term effects of home visitation on maternal life course
23 and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *Journal of the American*
24 *Medical Association* 278(8), 637–643.
- 25 Olds, D., J. Eckenrode, H. C.R., et al. (1998). Long-term effects of nurse home visitation on children’s
26 criminal and antisocial behavior. 15-year follow-up of a randomized controlled trial. *Journal of the*
27 *American Medical Association* 280(14), 1238–1244.
- 28 Sievertsen, H. H. and M. Wüst (2014). Before midnight: Discharge on the day of birth, parental response
29 and health and schooling outcomes. *unpublished working paper*.
- 30 Stamhus, J., S. Scheuer, and S. Christensen (2009). Three strikes in the public sector - a comparative
31 analysis [tre strejker i det offentlige sektor - en komparativ lønmodtager-investeringsanalyse]. *Nation-*
32 *økonomisk tidsskrift* 147(3), 360–374.

- 1 The Danish National Board of Health [Sundhedsstyrelsen] (1995). Primary preventive care for children
 2 and youth - national guidelines [forebyggende sundhedsordninger for børn og unge - retningslinier].
 3 Technical report.
- 4 The Danish National Board of Health [Sundhedsstyrelsen] (1998). Primary care for pregnant women -
 5 guidelines [svangreomsorg - retningslinier og redegørelse]. Technical report.
- 6 The Danish National Board of Health [Sundhedsstyrelsen] (2007). Primary preventive care for children
 7 and youth - national guidelines [forebyggende sundhedsordninger for børn og unge - retningslinier].
 8 Technical report.
- 9 The Danish National Board of Health [Sundhedsstyrelsen] (2009). Primary care for pregnant women -
 10 guidelines [svangreomsorg - retningslinier og redegørelse]. Technical report.
- 11 Wüst, M. (2012). Early interventions and infant health: Evidence from the danish home visiting program.
 12 *Labour Economics* 19, 484–495.

13 7 Figures and Tables

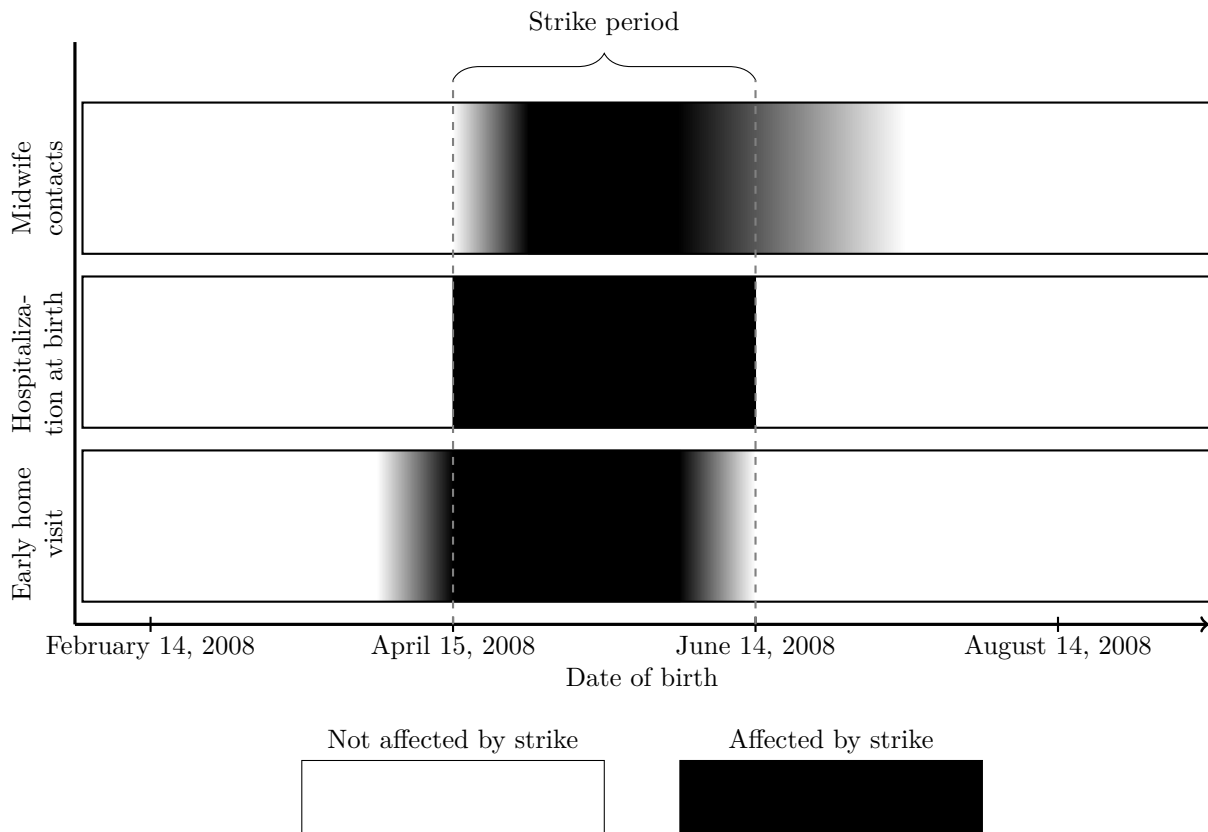
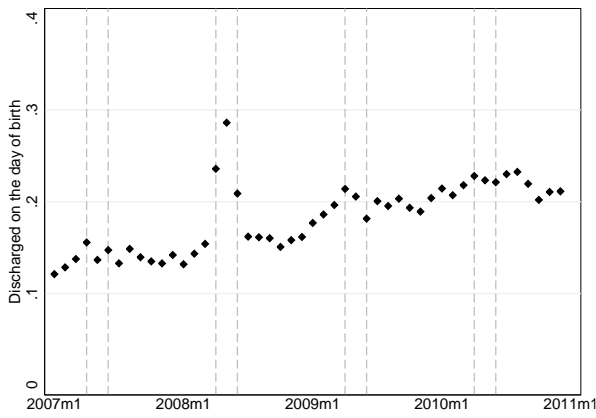
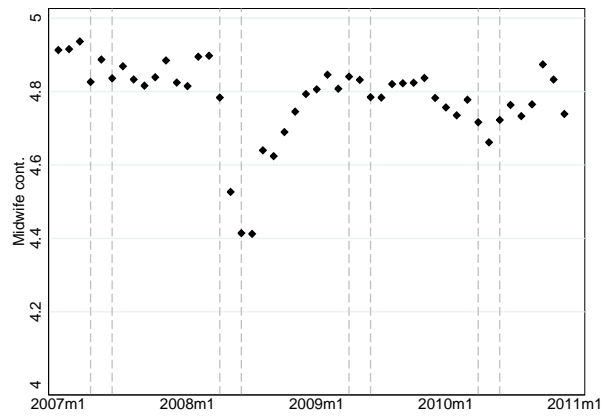


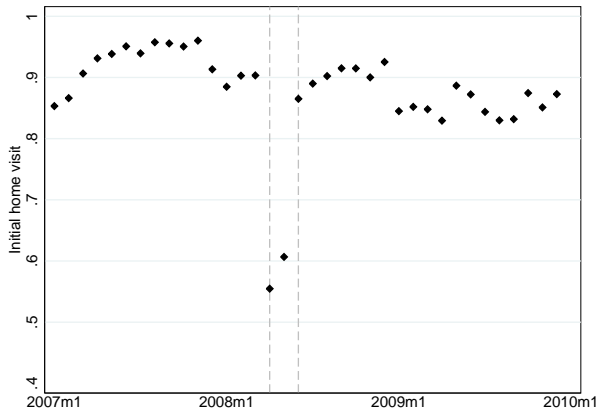
Figure 1: Treatment exposure by date of birth



(a) Percentage discharged on the day of birth (all children)

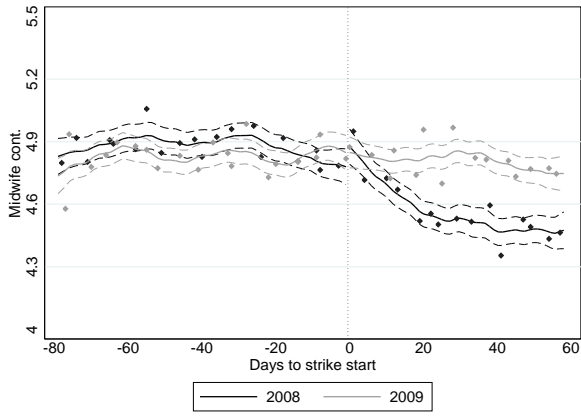


(b) Number of midwife contacts (all children)

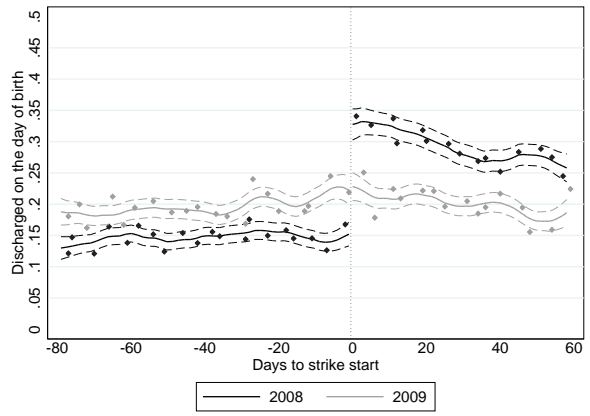


(c) Percentage with initial nurse home visit (CHD)

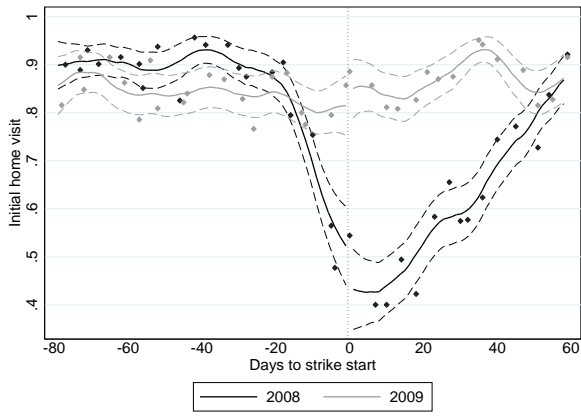
Figure 2: Discharged on the day of birth, number of total midwife contacts, percentage with the initial nurse visit; administrative data (discharge and midwife), CHD (nurse home visits); 2007-2010



(a) Number of midwife contacts



(b) Percentage discharged on the day of birth



(c) Percentage with initial nurse home visit (CHD)

Figure 3: Discharged on the day of birth, midwife contacts and percentage with home visits, 80 days before the strike and during the strike, local polynomial and four day bins, comparison 2008/2009

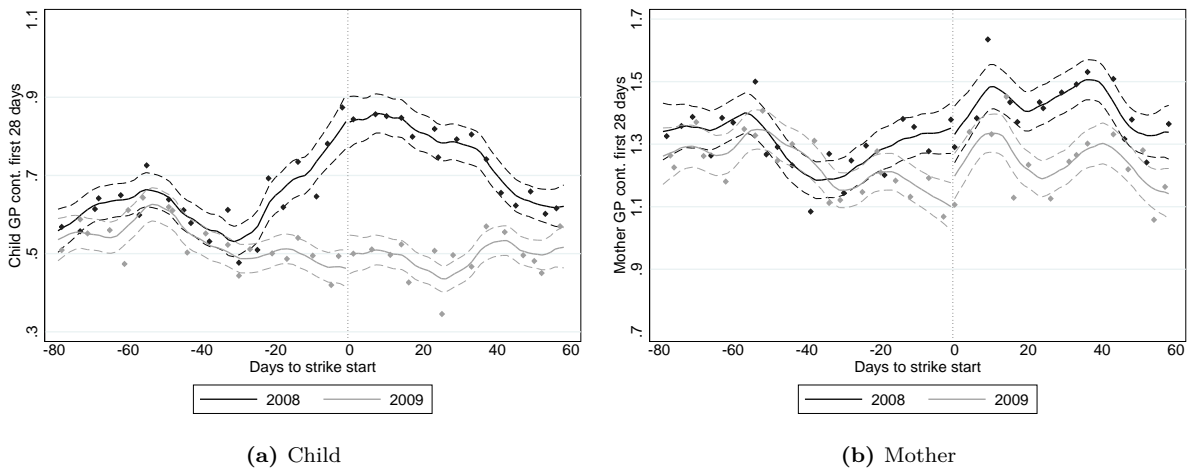


Figure 4: Child and Mother GP contacts in the first 28 days, 80 days before the strike and during the strike, local polynomial and four day bins, comparison 2008/2009

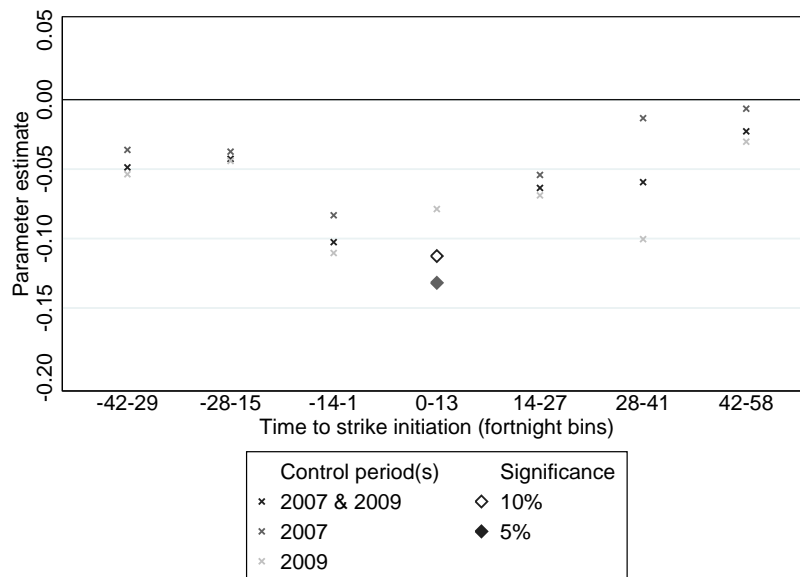


Figure 5: Parameter estimates for the effect of strike exposure on exclusive breastfeeding at four months

Notes: The figure shows parameter estimates for the biweekly indicators from equation 1 in three samples, which use different comparison years for the 2008 strike year (comparison years are 2007, 2009, or 2007 and 2009 pooled). The diamond-shaped parameter estimates are significant at the 10 or 5 percent level. For further explanations see section 5.

Table 1: The effect of strike exposure on care exposure and maternal and child health. All births, data for the strike and control periods from 2008 and 2009.

	Distance to strike (days)	-42-29	-28-15	-14-1	0-13	14-27	28-41	42-58	No. of obs.
<i>A. First stage</i>									
Midwife cont.		-0.01 (0.06)	-0.06 (0.06)	-0.16*** (0.06)	-0.17*** (0.06)	-0.41*** (0.06)	-0.45*** (0.06)	-0.41*** (0.06)	38,112
Discharged on the day of birth		0.02 (0.01)	0.00 (0.02)	-0.02 (0.02)	0.17*** (0.02)	0.14*** (0.02)	0.12*** (0.02)	0.15*** (0.01)	39,715
Initial home visit		0.01 (0.04)	-0.01 (0.04)	-0.24*** (0.05)	-0.45*** (0.05)	-0.37*** (0.05)	-0.36*** (0.04)	-0.11*** (0.04)	4,322
Child's age initial visit (weeks)		0.44 (0.44)	0.47 (0.43)	0.36 (0.41)	1.44*** (0.48)	1.72*** (0.50)	1.46*** (0.49)	1.50*** (0.54)	3,162
<i>B. Reduced form</i>									
Child GP cont. ≤ 28 days		-0.01 (0.04)	0.07* (0.04)	0.24*** (0.04)	0.30*** (0.04)	0.31*** (0.04)	0.23*** (0.04)	0.07* (0.04)	39,715
Child GP fee ≤ 28 days		-2.70 (5.94)	11.83** (6.00)	30.81*** (6.04)	56.69*** (6.19)	54.49*** (5.97)	52.56*** (6.35)	26.98*** (5.75)	39,715
Child GP cont. 1. year		-0.12 (0.26)	-0.04 (0.27)	0.22 (0.26)	0.16 (0.26)	-0.22 (0.27)	-0.36 (0.26)	-0.55** (0.25)	39,715
Child GP cont. 2. year		0.56** (0.25)	0.35 (0.26)	0.72*** (0.26)	0.48* (0.25)	0.26 (0.26)	0.19 (0.25)	0.28 (0.24)	39,715
Child GP cont. 3. year		-0.17 (0.17)	-0.05 (0.18)	0.37** (0.17)	0.05 (0.17)	0.00 (0.18)	-0.18 (0.17)	-0.19 (0.17)	39,715
Mother GP cont. ≤ 28 days		-0.06 (0.06)	0.02 (0.07)	0.19*** (0.06)	0.12* (0.07)	0.18*** (0.06)	0.19*** (0.07)	0.13** (0.06)	39,712
Mother GP fee ≤ 28 days		-6.84 (8.06)	3.56 (8.67)	20.94** (8.21)	21.18** (8.70)	20.78** (8.36)	20.20** (8.58)	16.58** (8.04)	39,712
Mother GP cont. 1. year		-0.03 (0.29)	0.25 (0.29)	0.48* (0.28)	0.41 (0.29)	0.51* (0.29)	0.03 (0.29)	0.17 (0.27)	39,712
Mother GP cont. 2. year		-0.31 (0.32)	0.08 (0.31)	-0.09 (0.31)	-0.24 (0.31)	-0.36 (0.32)	-0.55* (0.32)	-0.13 (0.30)	39,712
Mother GP cont. 3. year		-0.50* (0.30)	0.39 (0.32)	0.60** (0.31)	0.22 (0.30)	0.34 (0.31)	0.12 (0.30)	0.12 (0.29)	39,712
Caesarean section		-0.01 (0.02)	-0.01 (0.02)	0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)	0.01 (0.02)	-0.01 (0.02)	39,715
Unplanned caesarean section		-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	39,715

Notes: All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -56 and -43 days before strike. The regressions for *initial home visit* and *child's age at visit* (*conditional on having a visit*) are for the full CHD sample of children. These models include a day of the week indicator and a municipality of residence fixed effect and no controls. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2: The effect of strike exposure on care exposure breastfeeding probability at four months. All births in the CHD and strike births in the Region of Central Jutland, data for the strike and control periods from 2007-2009.

	Distance to strike (days)	-42-29	-28-15	-14-1	0-13	14-27	28-41	42-58	No. of obs.
<i>First stage (data from 2007/2008/2009), pooled CHD and survey data</i>									
Initial home visit		0.03 (0.03)	-0.02 (0.04)	-0.27*** (0.04)	-0.51*** (0.03)	-0.44*** (0.04)	-0.30*** (0.03)	-0.07** (0.03)	8,221
<i>2007/2008, pooled CHD and survey data</i>									
Exclusive breastfeeding at 4 months		-0.04 (0.07)	-0.04 (0.07)	-0.08 (0.07)	-0.13** (0.07)	-0.05 (0.07)	-0.01 (0.07)	-0.01 (0.06)	4,762
<i>2008/2009, pooled CHD and survey data</i>									
Exclusive breastfeeding at 4 months		-0.05 (0.07)	-0.04 (0.08)	-0.11 (0.07)	-0.08 (0.07)	-0.07 (0.07)	-0.10 (0.07)	-0.03 (0.07)	4,572
<i>2007/2008/2009, pooled CHD and survey data</i>									
Exclusive breastfeeding at 4 months		-0.05 (0.06)	-0.04 (0.06)	-0.10 (0.06)	-0.11* (0.06)	-0.06 (0.06)	-0.06 (0.06)	-0.02 (0.06)	6,169

Notes: All models include municipality and day of the week fixed effects. We omit the indicator for children born between -56 and -43 days before strike. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3: The effect of strike exposure on care exposure and maternal and child health. Primiparous births, data for the strike and control periods from 2008 and 2009.

	Distance to strike start (days)	-42-29	-28-15	-14-1	0-13	14-27	28-41	42-58	No. of obs.
<i>A. First stage</i>									
Midwife cont.		0.11 (0.09)	-0.05 (0.09)	-0.14 (0.09)	-0.09 (0.09)	-0.31*** (0.09)	-0.35*** (0.09)	-0.32*** (0.08)	16,631
Discharged on the day of birth		-0.00 (0.01)	-0.00 (0.01)	-0.02 (0.01)	0.17*** (0.02)	0.14*** (0.01)	0.12*** (0.01)	0.11*** (0.01)	17,048
Initial home visit		-0.09 (0.07)	-0.03 (0.07)	-0.31*** (0.07)	-0.47*** (0.08)	-0.53*** (0.07)	-0.44*** (0.07)	-0.24*** (0.07)	2,011
Child's age initial visit (weeks)		1.28 (1.04)	1.25 (1.13)	1.12 (1.05)	2.36** (1.09)	2.83*** (1.08)	1.99* (1.15)	2.48** (1.25)	1,402
<i>B. Reduced form</i>									
Child GP cont. ≤ 28 days		-0.03 (0.07)	0.10 (0.07)	0.25*** (0.07)	0.38*** (0.07)	0.35*** (0.07)	0.28*** (0.07)	0.06 (0.06)	17,048
Child GP fee ≤ 28 days		-2.62 (9.03)	13.72 (9.14)	34.89*** (9.21)	70.08*** (9.48)	60.91*** (8.88)	57.09*** (9.85)	24.06*** (8.64)	17,048
Mother GP cont. ≤ 28 days		-0.12 (0.09)	0.07 (0.10)	0.17* (0.10)	0.28*** (0.10)	0.23** (0.10)	0.28*** (0.10)	0.15 (0.09)	17,046
Mother GP fee ≤ 28 days		-15.34 (12.56)	2.02 (13.09)	18.01 (12.81)	38.17*** (13.96)	24.06* (13.01)	33.48** (13.52)	15.91 (12.46)	17,046

Notes: All models include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (see Table notes for Table 1). We omit the indicator for children born between -56 and -43 days before strike. The regressions for *initial home visit* and *child's age at visit (conditional on having a visit)* are for the full CHD sample of children and without controls. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: The effect of strike exposure on care exposure and maternal and child health. Multiparous births, data for the strike and control periods from 2008 and 2009.

	Distance to strike start (days)	-42-29	-28-15	-14-1	0-13	14-27	28-41	42-58	No. of obs.
<i>A. First stage</i>									
Midwife cont.		-0.10 (0.08)	-0.08 (0.08)	-0.17** (0.08)	-0.26*** (0.08)	-0.51*** (0.08)	-0.53*** (0.08)	-0.48*** (0.08)	21,481
Discharged on the day of birth		0.03 (0.02)	0.01 (0.02)	-0.03 (0.02)	0.18*** (0.02)	0.14*** (0.02)	0.12*** (0.02)	0.18*** (0.02)	22,667
Initial home visit		0.09** (0.04)	0.02 (0.04)	-0.16*** (0.05)	-0.43*** (0.05)	-0.27*** (0.05)	-0.25*** (0.05)	-0.01 (0.04)	1,978
Child's age initial visit (weeks)		-0.33 (0.36)	-0.08 (0.19)	-0.19 (0.18)	0.51 (0.38)	1.07*** (0.29)	1.00*** (0.26)	0.76*** (0.19)	1,594
<i>B. Reduced form</i>									
Child GP cont. ≤ 28 days		0.01 (0.06)	0.05 (0.06)	0.24*** (0.06)	0.25*** (0.06)	0.27*** (0.06)	0.19*** (0.06)	0.07 (0.05)	22,667
Child GP fee ≤ 28 days		-3.14 (7.85)	9.69 (7.95)	26.90*** (7.90)	47.35*** (8.12)	47.95*** (7.97)	46.58*** (8.17)	29.12*** (7.64)	22,667
Mother GP cont. ≤ 28 days		-0.01 (0.08)	-0.02 (0.09)	0.19** (0.08)	-0.00 (0.09)	0.14 (0.09)	0.12 (0.09)	0.11 (0.08)	22,666
Mother GP fee ≤ 28 days		0.96 (10.48)	3.73 (11.61)	22.79** (10.76)	9.04 (11.11)	17.91* (10.89)	10.48 (11.08)	17.04 (10.55)	22,666

Notes: All models include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (see Table notes for Table 1). We omit the indicator for children born between -56 and -43 days before strike. The regressions for *initial home visit* and *child's age at visit (conditional on having a visit)* are for the full CHD sample of children and without controls. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

1 A Online Appendix - not for publication

2 A.1 Diagnoses and operation codes

3 Our measure of infant nutritional diagnoses includes the ICD 10 diagnoses dehydration (DE869A, DE871A),
 4 child well-being (DR628A), jaundice (DP59), nutrition problems (DP92, DF982), and breastfeeding prob-
 5 lems (DP925).

6 Our measure of maternal post-birth complications includes the ICD 10 diagnoses DO85, DO860,
 7 DO861C, DO862A, DK556H, DO871, DO882D, DO702, DF53, DO990A, and operation codes KMWA,
 8 KMWB, KMWC, KKCH00, KJFA70, KJFA80, KLCD00, KMBA, KMBA, KMBC00, KTAB30.

9 A.2 Additional graphs and tables

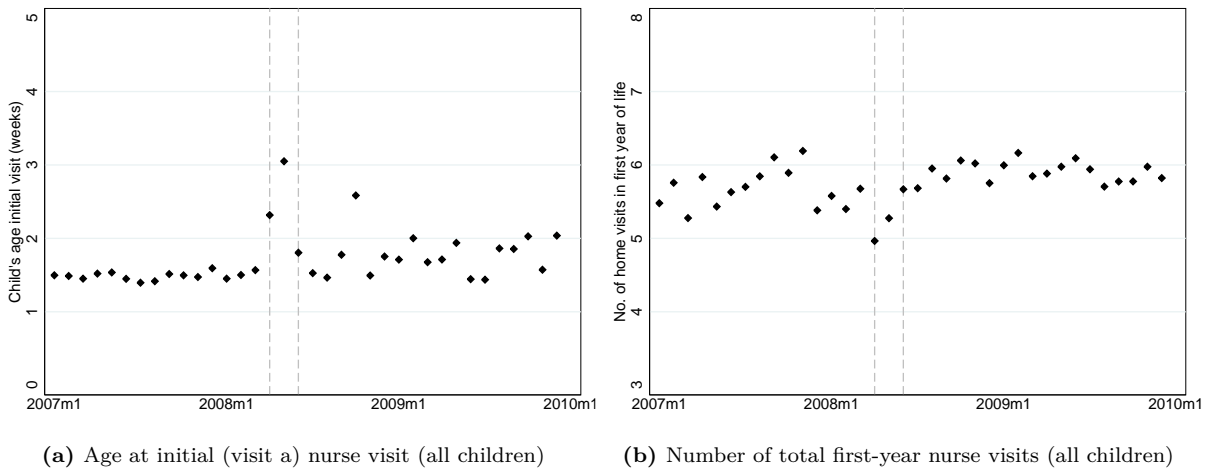


Figure A.1: Age at initial nurse home visit and total number of first-year nurse home visits, CHD, 2007-2009

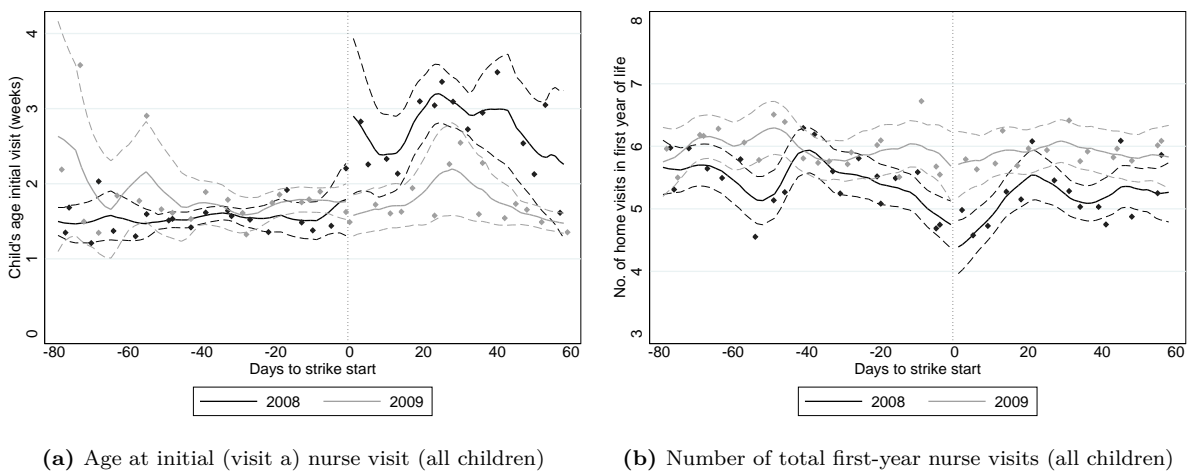


Figure A.2: Age at initial nurse home visit and total number of first-year nurse home visits, CHD, 80 days before the strike and during the strike period in 2008/2009, local polynomial and four day bins.

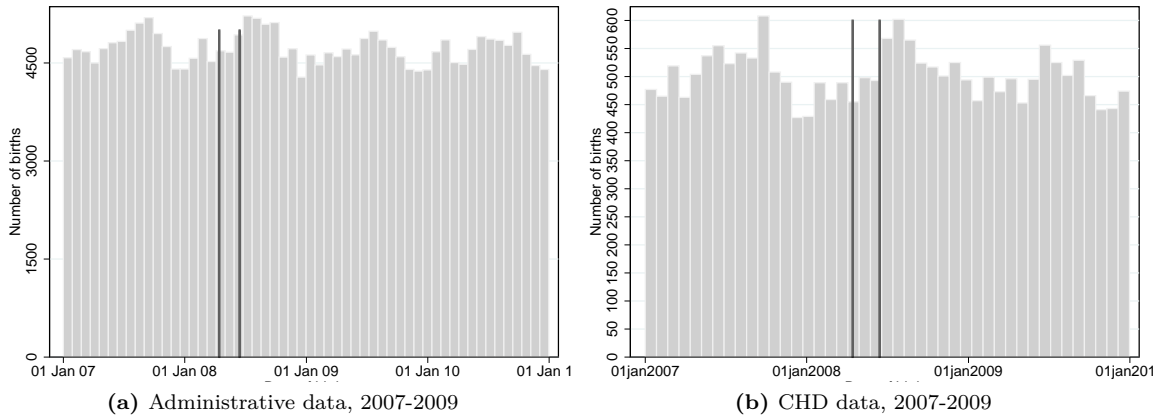


Figure A.3: Density of births, 2007-2009.

Notes: The vertical lines indicate the strike period.

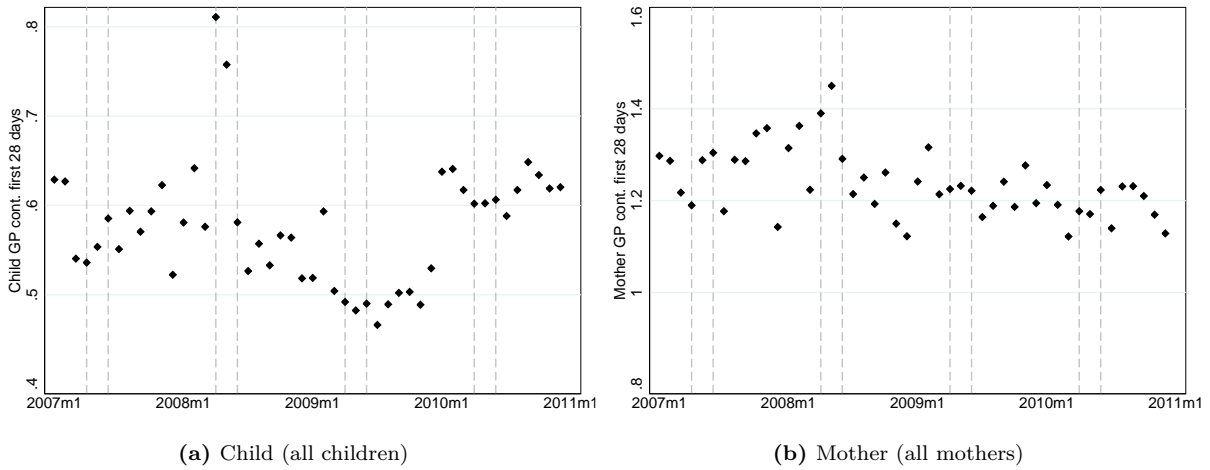


Figure A.4: GP contacts in the first 28 days, 2007-2010

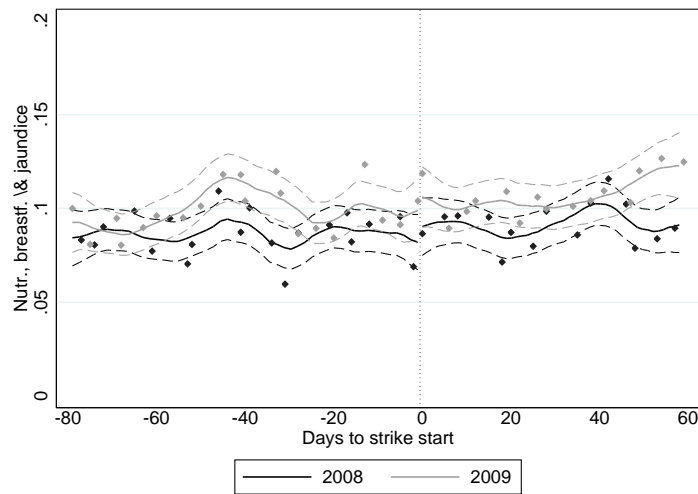
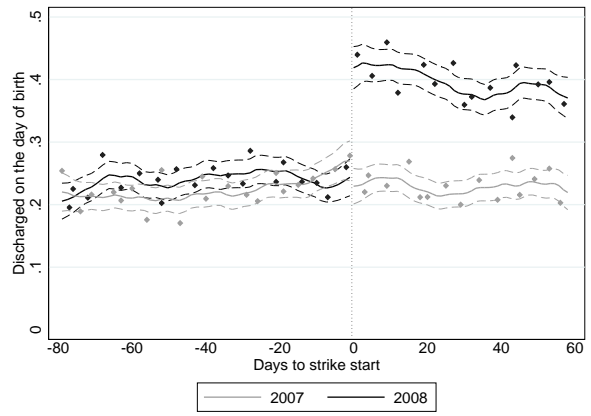
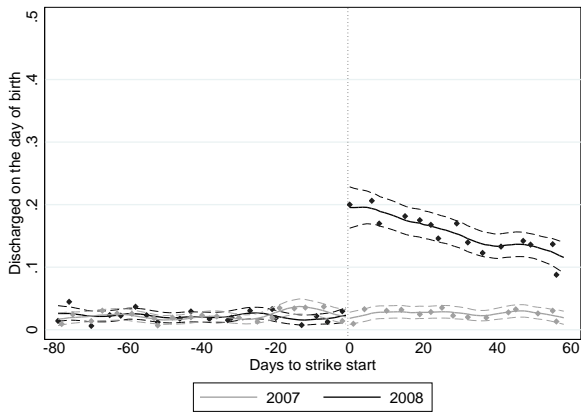
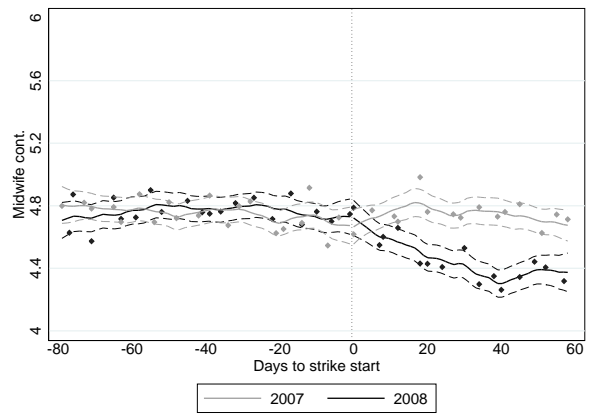
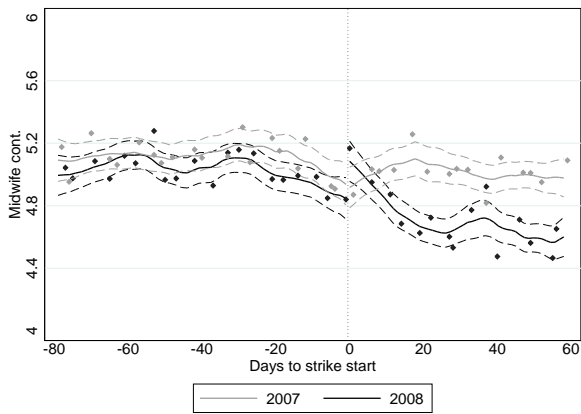


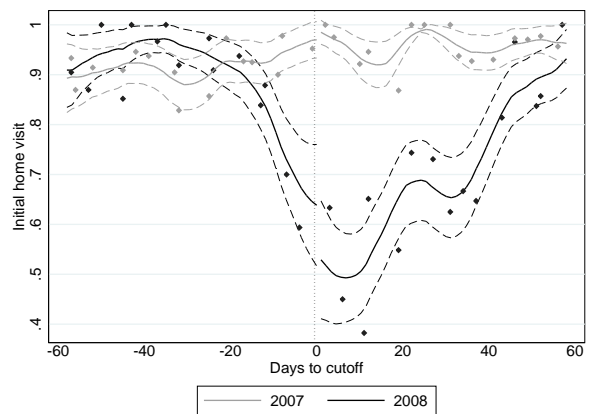
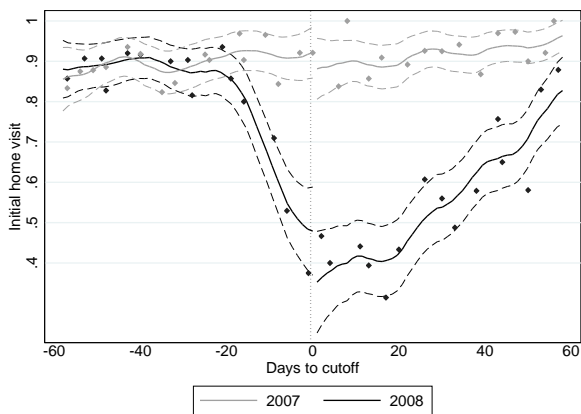
Figure A.5: Nutritional/breastfeeding diagnoses within 28 days, 80 days before the strike and during the strike period in 2008/2009, local polynomial and four day bins.



(a) Percentage discharged on the day of birth, Primiparous (b) Percentage discharged on the day of birth, Multiparous

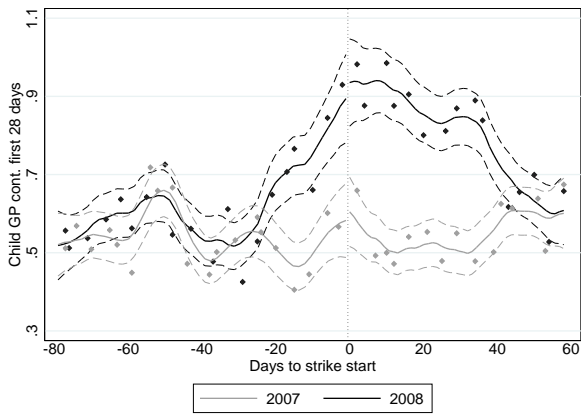


(c) Number of midwife contacts, Primiparous (d) Number of midwife contacts, Multiparous

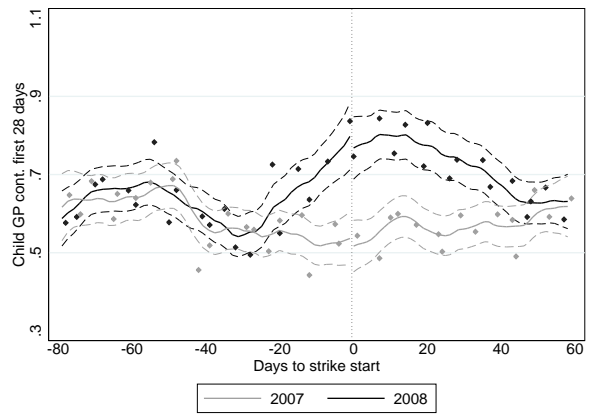


(e) Percentage with initial (visit a) nurse visit, Primiparous (f) Percentage with initial (visit a) nurse visit, Multiparous

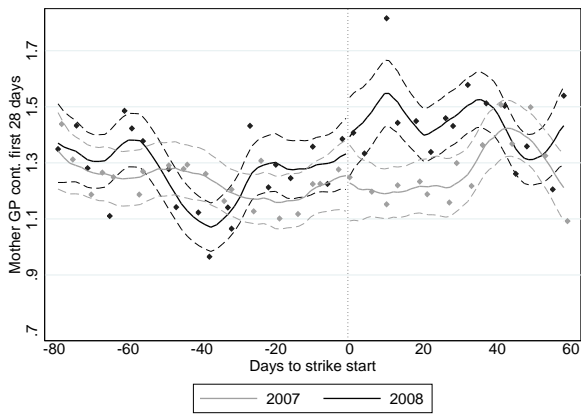
Figure A.6: Discharged on the day of birth, midwife contacts and percentage with an early home visit, by parity of the child, 80 days before the strike and during the strike period in 2007/2008, local polynomial and four day bins.



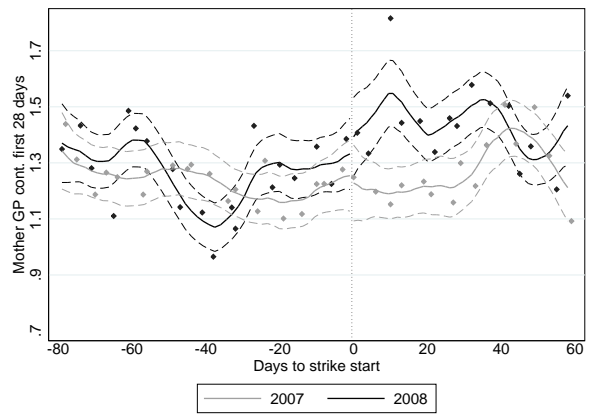
(a) Child, Primiparous



(b) Child, Multiparous

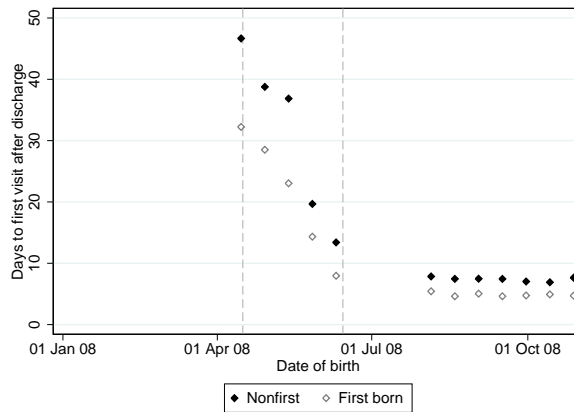


(c) Mother, Primiparous

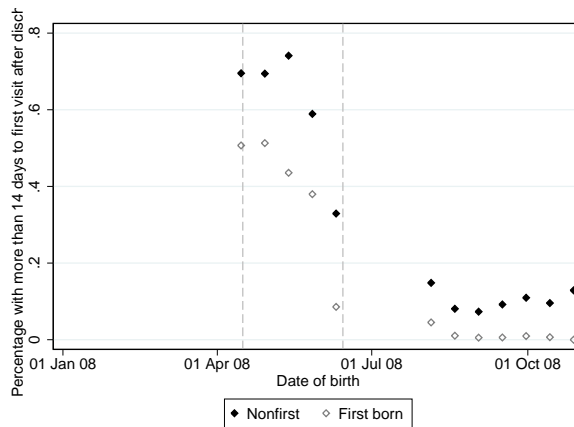


(d) Mother, Multiparous

Figure A.7: Child and Mother GP contacts in the first 28 days, 80 days before the strike and during the strike period in 2007/2008, local polynomial and four day bins.

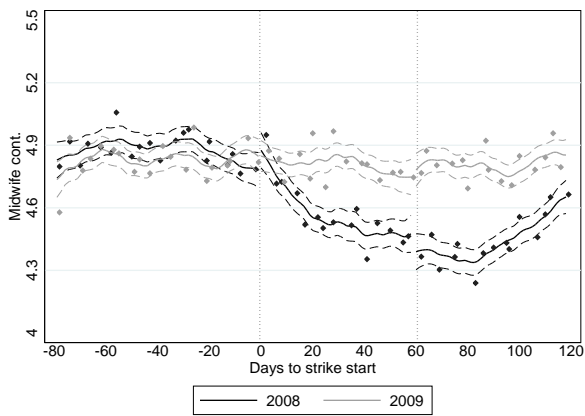


(a) Days to first home visit

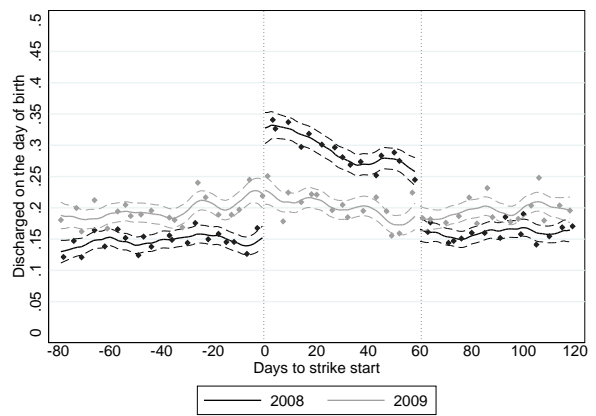


(b) Percentage mothers with >14 days to first home visit

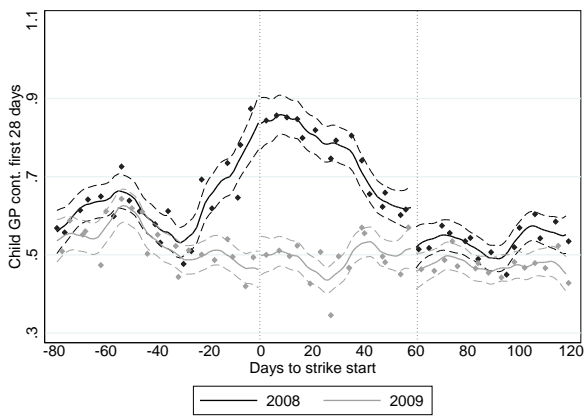
Figure A.8: Average number of days between hospital discharge and the first home visit, and percentage of mothers with >14 days to first home visit, primi- and multiparous mothers in 2008, survey data from the region of central Jutland



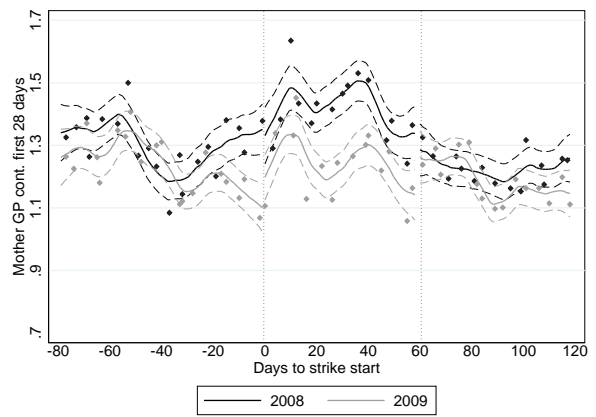
(a) Number of midwife contacts



(b) Percentage discharged on the day of birth



(c) Child GP contacts ≤ 28 days



(d) Mother GP contacts ≤ 28 days

Figure A.9: Midwife contacts, discharge on the day of birth and GP contacts ≤ 28 days; pre-strike, strike, and post-strike, local polynomial and four day bins, comparison 2008/2009

Table A.1: Variable means, p-value for a test of equality of means and number of observations. All births 56 days before and during the strike in 2008

	Pre-strike	Strike	P-value	No. of obs.
Mother's age at birth	30.89	30.88	0.95	19,882
Mother's years of education	13.09	13.11	0.54	19,882
Mother's taxable income in thousands	189.84	188.83	0.62	19,882
Mother is unemployed	0.07	0.07	0.27	19,882
Father's years of education	12.66	12.69	0.49	20,103
Father's taxable income in thousands	262.56	259.79	0.30	20,102
Father is unemployed	0.03	0.03	0.31	20,103
Female	0.48	0.49	0.22	20,103
First child by mother	0.42	0.43	0.36	20,103
Birth weight	3469.69	3468.65	0.90	19,784
5m APGAR	9.89	9.94	0.15	19,930
Pre-term birth	0.06	0.07	0.17	20,103
Caesarean section	0.22	0.22	0.13	20,103
Unplanned caesarean section	0.12	0.13	0.01	20,103

Notes: All variables (except the variables on home visiting) come from administrative register data for the universe of births in 2008. Information on home visiting comes from the CHD.

Table A.2: Variable means for the full sample, for the CHD municipalities, and for the survey municipalities. 56 days prior to the 2008 strike and the strike period.

	All	DBS	Survey
Mother's age at birth	30.89	31.18	30.78
Mother's years of education	13.10	13.09	13.10
Mother's taxable income in thousands	189.31	205.55	179.94
Mother is unemployed	0.07	0.06	0.06
Father's years of education	12.68	12.58	12.81
Father's taxable income in thousands	261.12	286.94	252.50
Father is unemployed	0.03	0.03	0.03
Female	0.49	0.48	0.49
First child by mother	0.43	0.42	0.40
Birth weight	3,469.16	3,440.73	3,482.79
5m APGAR	9.92	9.91	9.87
Pre-term birth	0.07	0.06	0.07
Caesarean section	0.22	0.23	0.21
Unplanned caesarean section	0.13	0.14	0.11

Table A.3: The effect of strike exposure on additional maternal and child health outcomes. All births, data for the strike and control periods from 2008 and 2009.

Distance to strike start (days)	-42-29	-28-15	-14-1	0-13	14-27	28-41	42-58	No of obs.
<i>Reduced form</i>								
Nutr., breastf. & jaundice	-0.01 (0.01)	0.02* (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.00 (0.01)	39,517
Child readmitted \leq 28 days	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.02** (0.01)	0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	39,715
Child readmitted \leq 365 days	-0.04** (0.02)	-0.03* (0.02)	-0.04** (0.02)	-0.01 (0.02)	-0.04** (0.02)	-0.03* (0.02)	-0.04** (0.02)	39,715
Post-birth complications, diagnoses	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.02** (0.01)	-0.01 (0.01)	-0.01 (0.01)	39,712
Post-birth complications, operations	-0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.02 (0.01)	-0.03** (0.01)	-0.00 (0.01)	39,712
Mother readmitted \leq 28 days	-0.00 (0.01)	0.00 (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	39,712
Mother readmitted \leq 365 days	0.03* (0.02)	0.03 (0.02)	0.01 (0.02)	0.03* (0.02)	0.02 (0.02)	0.01 (0.02)	0.02 (0.02)	39,712

Notes: All models include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (see notes to Table 1). We omit the indicator for children born between -56 and -43 days before strike. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.4: The effect of strike exposure on care exposure and maternal and child health. Longer pre-period analysis.

	Distance to strike (days)	-70- -57	-56- -43	-42- -29	-28- -15	-14- -1	0-13	14-27	28-41	42-58	No. of obs.
<i>A. First stage</i>											
Midwife cont.		-0.06 (0.06)	0.05 (0.06)	0.04 (0.06)	-0.02 (0.06)	-0.11* (0.06)	-0.13** (0.06)	-0.36*** (0.06)	-0.40*** (0.06)	-0.36*** (0.06)	47,221
Discharged on the day of birth		0.04** (0.01)	0.01 (0.01)	0.03** (0.01)	0.01 (0.02)	-0.01 (0.02)	0.18*** (0.02)	0.15*** (0.02)	0.14*** (0.02)	0.16*** (0.01)	49,145
Initial home visit		0.11* (0.06)	0.03 (0.03)	0.05* (0.03)	0.03 (0.03)	-0.21*** (0.04)	-0.42*** (0.04)	-0.34*** (0.04)	-0.33*** (0.03)	-0.02 (0.02)	5,373
Child's age initial visit (weeks)		-0.30 (0.18)	-0.48 (0.40)	-0.04 (0.17)	-0.00 (0.14)	-0.11 (0.17)	0.97*** (0.33)	1.26*** (0.31)	0.97*** (0.30)	0.14 (0.23)	4,030
<i>B. Reduced form</i>											
Child GP cont. ≤ 28 days		0.06 (0.04)	0.02 (0.04)	0.01 (0.04)	0.09** (0.04)	0.26*** (0.04)	0.32*** (0.04)	0.33*** (0.04)	0.24*** (0.04)	0.09** (0.04)	49,145
Child GP fee ≤ 28 days		14.25** (6.13)	5.42 (5.98)	2.74 (5.96)	17.16*** (6.02)	36.00*** (6.08)	62.07*** (6.22)	59.95*** (5.99)	57.89*** (6.36)	32.31*** (5.78)	49,145
Child GP cont. 1. year		0.08 (0.26)	0.24 (0.26)	0.13 (0.26)	0.19 (0.27)	0.46* (0.26)	0.39 (0.26)	0.01 (0.27)	-0.12 (0.26)	-0.31 (0.25)	49,145
Child GP cont. 2. year		0.13 (0.26)	0.10 (0.26)	0.66** (0.26)	0.45* (0.27)	0.83*** (0.26)	0.58** (0.26)	0.36 (0.27)	0.30 (0.26)	0.37 (0.25)	49,145
Child GP cont. 3. year		-0.11 (0.18)	-0.06 (0.18)	-0.23 (0.17)	-0.11 (0.18)	0.31* (0.18)	-0.00 (0.18)	-0.06 (0.18)	-0.23 (0.18)	-0.25 (0.17)	49,145
Mother GP cont. ≤ 28 days		0.01 (0.07)	-0.05 (0.07)	-0.11* (0.07)	-0.03 (0.07)	0.14** (0.07)	0.07 (0.07)	0.12* (0.07)	0.14** (0.07)	0.08 (0.06)	49,142
Mother GP fee ≤ 28 days		-8.22 (8.76)	-8.26 (8.76)	-15.28* (8.40)	-4.79 (8.98)	12.42 (8.54)	12.85 (9.02)	12.08 (8.70)	11.86 (8.91)	8.31 (8.37)	49,142
Mother GP cont. 1. year		-0.19 (0.30)	-0.25 (0.30)	-0.29 (0.29)	-0.00 (0.29)	0.23 (0.29)	0.15 (0.29)	0.24 (0.29)	-0.21 (0.29)	-0.08 (0.27)	49,142
Mother GP cont. 2. year		-0.55* (0.32)	-0.12 (0.32)	-0.43 (0.32)	-0.04 (0.31)	-0.21 (0.31)	-0.37 (0.31)	-0.50 (0.31)	-0.66** (0.31)	-0.25 (0.30)	49,142
Mother GP cont. 3. year		-0.13 (0.32)	0.15 (0.31)	-0.35 (0.31)	0.54* (0.32)	0.74** (0.31)	0.36 (0.31)	0.45 (0.31)	0.27 (0.31)	0.26 (0.30)	49,142
Caesarean section		-0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.02 (0.02)	0.00 (0.02)	-0.02 (0.02)	-0.02 (0.02)	0.00 (0.02)	-0.01 (0.02)	49,145
Unplanned caesarean section		-0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)	49,145

Notes: All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls(child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -84 and -71 days before strike. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.5: The effect of strike exposure on care exposure and maternal and child health. Sample constraint to the areas covered by the survey data and CHD municipalities.

	Distance to strike (days)							No. of obs.			
	-42-	-29	-28-	-15	-14-	-1	0-13	14-27	28-41	42-58	No. of obs.
<i>A. First stage</i>											
Midwife cont.	-0.08 (0.10)	-0.20* (0.10)	-0.19* (0.10)	-0.08 (0.10)	-0.41*** (0.10)	-0.52*** (0.11)	-0.57*** (0.10)	12,398			
Discharged on the day of birth	0.04 (0.03)	0.00 (0.03)	0.01 (0.03)	0.18*** (0.03)	0.14*** (0.03)	0.12*** (0.03)	0.18*** (0.03)	13,361			
<i>B. Reduced form</i>											
Child GP cont. ≤ 28 days	-0.01 (0.08)	0.02 (0.08)	0.27*** (0.08)	0.27*** (0.08)	0.32*** (0.08)	0.25*** (0.08)	0.04 (0.08)	13,361			
Child GP fee ≤ 28 days	-6.69 (12.17)	9.15 (11.92)	36.60*** (11.82)	53.84*** (11.97)	54.03*** (11.33)	58.92*** (11.76)	24.57** (11.19)	13,361			
Child GP cont. 1. year	0.29 (0.51)	0.12 (0.53)	0.69 (0.52)	0.37 (0.52)	0.05 (0.53)	-0.05 (0.51)	-0.24 (0.51)	13,361			
Child GP cont. 2. year	1.18** (0.51)	0.17 (0.51)	1.01** (0.51)	0.74 (0.52)	0.78 (0.53)	0.44 (0.51)	0.79 (0.49)	13,361			
Child GP cont. 3. year	-0.59* (0.34)	-0.52 (0.36)	0.13 (0.34)	-0.43 (0.35)	-0.24 (0.36)	-0.36 (0.34)	-0.38 (0.34)	13,361			
Mother GP cont. ≤ 28 days	-0.01 (0.12)	0.24** (0.12)	0.24** (0.11)	-0.02 (0.12)	0.08 (0.12)	0.30*** (0.12)	0.24** (0.11)	13,359			
Mother GP fee ≤ 28 days	6.94 (15.15)	33.62** (17.00)	32.95** (14.86)	13.72 (15.60)	15.66 (15.53)	46.90*** (15.86)	31.01** (15.09)	13,359			
Mother GP cont. 1. year	0.20 (0.53)	0.93* (0.55)	0.37 (0.53)	0.03 (0.52)	0.78 (0.53)	0.40 (0.55)	0.20 (0.51)	13,359			
Mother GP cont. 2. year	-0.60 (0.62)	0.22 (0.61)	0.02 (0.62)	-0.37 (0.60)	0.37 (0.63)	-0.18 (0.63)	-0.23 (0.60)	13,359			
Mother GP cont. 3. year	-0.24 (0.55)	0.67 (0.57)	0.81 (0.56)	0.13 (0.56)	1.09* (0.56)	0.56 (0.56)	-0.02 (0.53)	13,359			
Caesarean section	-0.02 (0.03)	-0.05* (0.03)	-0.04 (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.01 (0.03)	-0.04 (0.03)	13,361			
Unplanned caesarean section	-0.02 (0.02)	-0.04* (0.02)	-0.05** (0.02)	-0.01 (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.01 (0.02)	13,361			

Notes: All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on national administrative data also include mother and child controls (child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -56 and -43 days before strike. The regressions for *initial home visit* and *child's age at visit (conditional on having a visit)* are omitted for brevity. They are only based on the subsamples in the main specification presented in the main table 1. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.6: The effect of strike exposure on care exposure and maternal and child health. Complier sample.

	Distance to strike (days)								No. of obs.
	-42- -29	-28- -15	-14- -1	0-13	14-27	28-41	42-58		
<i>A. First stage</i>									
Midwife cont.	-0.09 (0.14)	-0.05 (0.14)	-0.10 (0.15)	-0.07 (0.14)	-0.55*** (0.14)	-0.31** (0.14)	-0.31** (0.14)	5,080	
Discharged on the day of birth	0.06 (0.05)	-0.04 (0.05)	0.01 (0.05)	0.23*** (0.05)	0.12** (0.05)	0.08 (0.05)	0.20*** (0.05)	5,335	
<i>B. Reduced form</i>									
Child GP cont. \leq 28 days	0.11 (0.11)	-0.05 (0.12)	0.35*** (0.11)	0.26** (0.11)	0.22** (0.11)	0.10 (0.11)	0.10 (0.10)	5,335	
Child GP fee \leq 28 days	2.20 (15.06)	-8.86 (15.91)	30.06** (15.23)	47.46*** (15.16)	42.63*** (15.26)	41.67** (18.60)	22.39 (15.42)	5,335	
Child GP cont. 1. year	-0.64 (0.62)	-0.03 (0.62)	-0.07 (0.61)	-0.54 (0.59)	-0.51 (0.62)	-0.33 (0.61)	-1.07* (0.62)	5,335	
Child GP cont. 2. year	0.58 (0.59)	0.46 (0.60)	-0.16 (0.57)	-0.03 (0.57)	0.28 (0.60)	0.89 (0.56)	0.53 (0.57)	5,335	
Child GP cont. 3. year	-0.05 (0.39)	0.10 (0.41)	0.19 (0.38)	-0.45 (0.37)	-0.02 (0.39)	-0.36 (0.39)	-0.73* (0.37)	5,335	
Mother GP cont. \leq 28 days	0.41*** (0.16)	0.08 (0.16)	0.36** (0.15)	0.03 (0.16)	0.29* (0.16)	0.41** (0.17)	0.25 (0.16)	5,335	
Mother GP fee \leq 28 days	38.80** (18.67)	11.45 (20.37)	30.65 (19.17)	8.73 (19.83)	14.46 (18.68)	25.65 (20.23)	27.41 (18.35)	5,335	
Mother GP cont. 1. year	1.19* (0.66)	0.40 (0.68)	1.49** (0.62)	0.36 (0.66)	0.73 (0.63)	0.58 (0.69)	0.12 (0.59)	5,335	
Mother GP cont. 2. year	1.50** (0.70)	0.95 (0.65)	0.21 (0.67)	0.58 (0.64)	-0.23 (0.65)	0.48 (0.67)	0.08 (0.64)	5,335	
Mother GP cont. 3. year	0.96 (0.66)	0.27 (0.67)	0.15 (0.62)	-0.14 (0.67)	-0.01 (0.61)	0.42 (0.66)	-0.28 (0.63)	5,335	
Caesarean section	0.01 (0.05)	0.03 (0.04)	0.01 (0.04)	-0.06 (0.04)	0.04 (0.04)	0.04 (0.04)	-0.03 (0.04)	5,335	
Unplanned caesarean section	-0.00 (0.03)	0.04 (0.03)	0.02 (0.03)	0.03 (0.03)	0.05* (0.03)	0.04 (0.03)	0.01 (0.03)	5,335	

Notes: The sample is defined by births of non-first time mothers where the mother is at least 18 years old, at least one parent has completed more than 14 years of schooling, and the parents income is in the top 33 percent. All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -56 and -43 days before strike. We have no good quality parental background characteristics for the CHD and the survey sample and thus we do not present results for *initial home visit* and *child's age at visit* (conditional on having a visit). Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.7: Placebo Test: The effect of strike exposure on care exposure and maternal and child healths. Comparison of 2009 and 2010 (non-strike years)

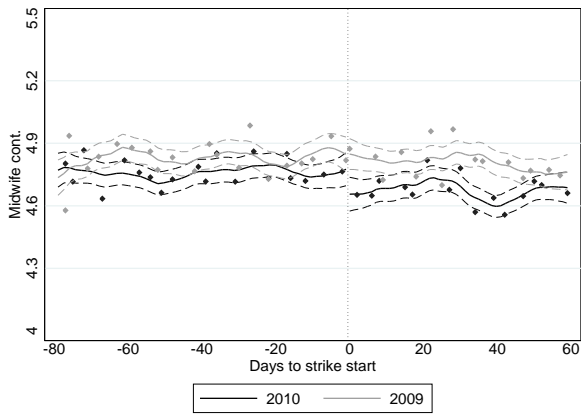
	Distance to strike (days)										No. of obs.
	-42-	-29	-28-	-15	-14-	-1	0-13	14-27	28-41	42-58	
<i>A. First stage</i>											
Midwife cont.	0.03 (0.06)	0.05 (0.06)	0.05 (0.06)	0.05 (0.04)	-0.01 (0.06)	-0.01 (0.06)	-0.05 (0.06)	0.01 (0.06)	-0.09* (0.06)	-0.01 (0.05)	37,738
Discharged on the day of birth	0.02 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	-0.01 (0.02)	-0.00 (0.02)	0.01 (0.02)	0.03* (0.02)	38,816
<i>B. Reduced form</i>											
Child GP cont. \leq 28 days	0.05 (0.04)	0.02 (0.04)	0.02 (0.04)	0.02 (0.04)	0.05 (0.04)	0.06 (0.04)	0.06 (0.04)	0.06 (0.04)	0.02 (0.04)	0.07 (0.04)	38,816
Child GP fee \leq 28 days	-5.41 (6.11)	0.15 (6.10)	0.15 (6.10)	0.15 (5.99)	-8.10 (5.99)	0.90 (5.76)	2.95 (6.02)	0.90 (5.76)	8.54 (5.82)	16.03*** (5.86)	38,816
Child GP cont. 1. year	-0.03 (0.25)	-0.18 (0.25)	-0.18 (0.25)	0.25 (0.26)	0.25 (0.26)	-0.26 (0.25)	0.03 (0.25)	-0.26 (0.25)	-0.17 (0.25)	-0.03 (0.24)	38,816
Child GP cont. 2. year	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	19,659
Child GP cont. 3. year	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	19,659
Mother GP cont. \leq 28 days	0.04 (0.06)	0.10 (0.06)	0.10 (0.06)	0.10 (0.06)	0.19*** (0.06)	0.10 (0.06)	0.04 (0.06)	0.10 (0.06)	0.05 (0.06)	0.25*** (0.06)	38,816
Mother GP fee \leq 28 days	9.79 (8.09)	9.27 (8.33)	9.27 (8.33)	9.27 (8.24)	22.11*** (8.24)	10.17 (8.13)	1.30 (8.05)	10.17 (8.13)	1.25 (8.29)	31.80*** (7.86)	38,816
Mother GP cont. 1. year	-0.07 (0.28)	0.09 (0.29)	0.09 (0.29)	0.09 (0.29)	0.56* (0.29)	0.43 (0.29)	0.14 (0.28)	0.43 (0.29)	-0.05 (0.29)	0.53* (0.28)	38,816
Mother GP cont. 2. year	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	19,659
Mother GP cont. 3. year	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	19,659
Caesarean section	0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.01 (0.02)	-0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	38,816
Unplanned caesarean section	-0.01 (0.01)	-0.02 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.01 (0.01)	-0.03** (0.01)	-0.01 (0.01)	38,816

Notes: All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on national administrative data also include mother and child controls(child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -56 and -43 days before strike. Robust standard errors in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

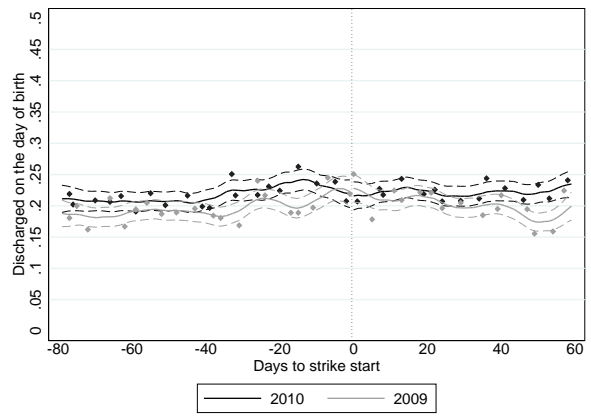
Table A.8: The heterogenous effect of strike exposure on care exposure and maternal and child health. All births, data for the strike and control periods from 2008 and 2009. Point-estimate differences between primi and multiparous births and p-values (in parenthesis) for a test of equality.

	Distance to strike (days)							No. of obs.
	-42- -29	-28- -15	-14- -1	0-13	14-27	28-41	42-58	
<i>A. First stage</i>								
Midwife cont.	0.21* (0.07)	0.03 (0.81)	0.04 (0.76)	0.17 (0.13)	0.20* (0.08)	0.19 (0.12)	0.16 (0.16)	38,112
Discharged on the day of birth	-0.04 (0.12)	-0.01 (0.67)	0.01 (0.70)	-0.01 (0.72)	-0.00 (0.89)	0.00 (0.97)	-0.07*** (0.01)	39,715
Initial home visit	-0.19** (0.02)	-0.05 (0.58)	-0.15 (0.11)	-0.04 (0.66)	-0.26*** (0.00)	-0.20** (0.02)	-0.22*** (0.01)	3,989
Child's age initial visit (weeks)	1.62 (0.13)	1.33 (0.24)	1.31 (0.22)	1.85 (0.10)	1.76 (0.11)	0.99 (0.39)	1.72 (0.17)	2,996
<i>B. Reduced form</i>								
Child GP cont. ≤ 28 days	-0.04 (0.62)	0.05 (0.60)	0.00 (0.96)	0.13 (0.14)	0.08 (0.37)	0.09 (0.31)	-0.02 (0.83)	39,715
Child GP fee ≤ 28 days	0.53 (0.96)	4.04 (0.74)	7.98 (0.51)	22.73* (0.07)	12.96 (0.28)	10.52 (0.41)	-5.05 (0.66)	39,715
Child GP cont. 1. year	-0.69 (0.19)	-0.20 (0.71)	0.09 (0.87)	-0.13 (0.80)	-0.21 (0.70)	-0.71 (0.18)	-0.38 (0.45)	39,715
Child GP cont. 2. year	-0.74 (0.15)	0.10 (0.85)	0.76 (0.14)	0.06 (0.91)	-0.14 (0.80)	-0.04 (0.94)	0.35 (0.48)	39,715
Child GP cont. 3. year	-0.53 (0.12)	-0.33 (0.37)	-0.15 (0.67)	-0.41 (0.25)	-0.58 (0.10)	-0.32 (0.36)	-0.23 (0.51)	39,715
Mother GP cont. ≤ 28 days	-0.11 (0.37)	0.09 (0.50)	-0.02 (0.87)	0.28** (0.04)	0.09 (0.49)	0.16 (0.22)	0.04 (0.77)	39,712
Mother GP fee ≤ 28 days	-16.30 (0.32)	-1.72 (0.92)	-4.78 (0.77)	29.13 (0.10)	6.15 (0.72)	23.00 (0.19)	-1.13 (0.94)	39,712
Mother GP cont. 1. year	-0.75 (0.19)	0.40 (0.50)	-0.69 (0.23)	0.11 (0.85)	-0.33 (0.56)	-0.30 (0.61)	-0.01 (0.99)	39,712
Mother GP cont. 2. year	-0.68 (0.30)	-0.24 (0.70)	-0.37 (0.56)	-0.75 (0.24)	-0.65 (0.32)	0.06 (0.93)	0.40 (0.52)	39,712
Mother GP cont. 3. year	-0.72 (0.24)	0.95 (0.13)	0.22 (0.73)	0.18 (0.77)	-0.19 (0.75)	0.44 (0.47)	0.24 (0.68)	39,712
Caesarean section	-0.01 (0.77)	-0.02 (0.54)	-0.02 (0.54)	0.00 (0.92)	-0.03 (0.30)	-0.07** (0.04)	-0.00 (0.92)	39,715
Unplanned caesarean section	0.00 (0.95)	0.00 (0.95)	-0.02 (0.46)	-0.01 (0.82)	-0.03 (0.24)	-0.05* (0.07)	0.02 (0.41)	39,715

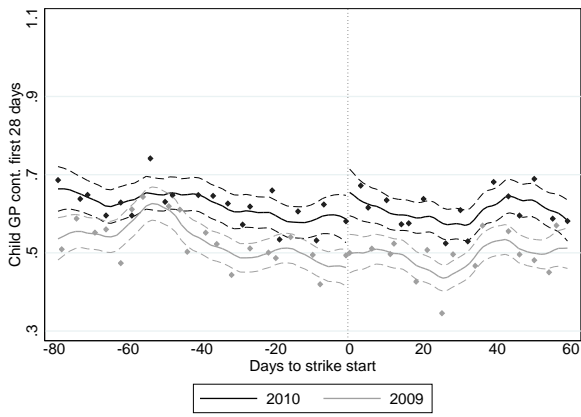
Notes: All models based on administrative data include municipality, hospital and day of the week fixed effects. All models based on administrative data also include mother and child controls (child sex, indicators for mother's and father's education and unemployment status, mother's and father's taxable income, indicators for missing covariates for mother or father). We omit the indicator for children born between -56 and -43 days before strike. The regressions for *initial home visit* and *child's age at visit (conditional on having a visit)* are for the full CHD sample of children. These models include a day of the week indicator and a municipality of residence fixed effect and no controls. P-values in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.



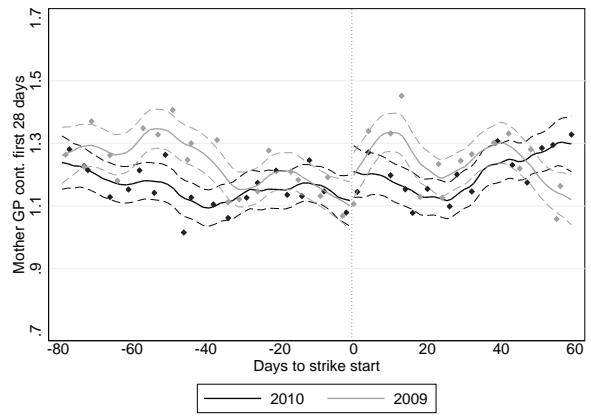
(a) Number of midwife contacts



(b) Percentage discharged on the day of birth



(c) Child GP contactants ≤ 28 days



(d) Mother GP contactants ≤ 28 days

Figure A.10: Placebo test: Midwife contacts, discharge on the day of birth and GP contacts ≤ 28 days; local polynomial and four day bins, comparison 2009/2010