

Appendix Table 1: Comparison of characteristics of mothers enrolled in FNP, not enrolled in FNP but living in local authority with active FNP site at the time of pregnancy, and living in local authority where FNP never commissioned – England, births between April 2010–March 2017

	Mothers enrolled in FNP		Mothers not enrolled in FNP, living in LA with active FNP site (Controls)		Mothers in LAs where FNP never commissioned	
	N	%	N	%	N	%
<b>Total</b>	31,260	100.0	99,150	100.0	100,455	100.0
<b>Maternal age (years)</b>						
13-15	1,450	4.6	1,235	1.2	2,160	2.2
16-17	10,370	33.2	15,690	15.8	20,040	19.9
18-19	15,805	50.6	56,660	57.1	56,310	56.1
20-21	3,635	11.6	25,565	25.8	21,945	21.8
<b>Ethnicity</b>						
White	26,330	84.2	83,485	84.2	88,895	88.5
South Asian	670	2.1	3,030	3.1	2,325	2.3
Black	1,470	4.7	3,180	3.2	2,705	2.7
Mixed/other	1,685	5.4	5,155	5.2	3,905	3.9
Unknown	1,110	3.5	4,300	4.3	2,620	2.6
<b>Area-level deprivation</b>						
Least deprived	1,445	4.6	5,360	5.4	8,460	8.4
2	2,305	7.4	8,105	8.2	12,825	12.8
3	4,115	13.2	13,735	13.9	18,065	18.0
4	7,890	25.2	24,660	24.9	25,630	25.5
Most deprived	15,340	49.1	47,290	47.7	34,890	34.7
<b>History of admissions with diagnoses within 2 years prior to 20 weeks gestation</b>						
Mental health (any)	2,690	8.6	3,860	3.9	3,910	3.9
Chronic condition (any, exc. mental health)	4,125	13.2	7,805	7.9	8,105	8.1
A&E visits	21,985	70.3	60,335	60.8	61,255	61.0
<b>Gestational age at antenatal booking appointment</b>						
Before 10 weeks	8,390	26.8	26,890	27.1	25,840	25.7
10-20 weeks	11,530	36.9	36,455	36.8	36,325	36.2
20 weeks or more	1,925	6.2	5,395	5.4	10,180	10.1
Unknown	9,420	30.1	30,415	30.7	28,105	28.0
<b>Exclusions and absences</b>						
Ever excluded, in pupil referral unit or alternative provision	10,560	33.8	22,390	22.6	24,485	24.4
Ever recorded as persistently absent in a term	15,090	48.3	25,510	25.7	32,275	32.1
<b>Social care characteristics before 20 weeks of pregnancy</b>						
Ever in care	3,235	10.3	3,720	3.8	4,690	4.7
Ever had recorded child protection plan	1,990	6.4	1,895	1.9	14,970	14.9
<b>Education variables</b>						
<b>Total</b>	31,260	100.0	99,150	100.0	100,455	100.0
Ever recorded as having special educational needs	17,150	54.9	39,325	39.7	36,645	36.5
Ever recorded as having free school meals	18,525	59.3	42,795	43.2	36,820	36.7
Ever in bottom IDACI decile	11,565	37.0	27,525	27.8	19,280	19.2

\*in those who were 20 weeks of gestation before Y11. FNP – Family Nurse Partnership; LA – local authority.

Appendix Table 2: Comparison of characteristics of mothers enrolled in FNP, controls (mothers pregnant at a time when FNP not enrolling mothers), and mothers offered FNP but declined or not offered FNP – Scotland, mothers-to-be eligible for FNP between 1 January 2009 and 31 March 2016

	Mothers enrolled in FNP		Mothers not enrolled in FNP, living in HB with outside period of recruitment (Controls)		Mothers offered but not enrolled in FNP, or not offered FNP within period of enrolment	
	N	%	N	%	N	%
<b>Total</b>	<b>3,205</b>	<b>100.0</b>	<b>5,016</b>	<b>100.0</b>	<b>2,214</b>	<b>100.0</b>
<b>Maternal age at last menstrual period (years)</b>						
Mean (SD)	18.30	1.41	18.22	1.23	18.4	2.20
<b>Ethnicity</b>						
White	2,724	87.6	3,573	78.7	1,733	82.8
Other	384	12.4	969	21.3	360	17.2
<b>Scottish Index of Multiple Deprivation Quintile</b>						
Most deprived	1,532	47.9	2,478	49.4	992	44.9
2	821	25.7	1,221	24.3	588	26.6
3	441	13.8	643	12.8	316	14.3
4	264	8.3	459	9.2	214	9.7
Least deprived	140	4.4	215	4.3	101	4.6
<b>Body mass index (BMI) (kg/m<sup>2</sup>) at antenatal booking</b>						
Mean (SD)	23.94	5.0	24.3	5.1	24.4	5.1
<b>Smoking history at antenatal booking</b>						
Never smoked	1,254	39.9	2,212	46.4	1,048	49.2
Former smoker	602	19.2	788	16.5	341	16.0
Current smoker	1,285	40.9	1,767	37.1	739	34.7
<b>Drug misuse at any time during current pregnancy</b>						
No	2,788	94.7	3,768	96.8	1,866	96.9
Yes	156	5.3	123	3.2	59	3.1
<b>Previous pregnancy</b>						
No	2,350	74.0	3,716	74.1	1,656	74.9
Yes	827	26.0	1,296	25.9	555	25.1

FNP – Family Nurse Partnership.



Appendix Table 3: Characteristics of mothers enrolled in FNP who did and did not link to HES in England

	Total FNP mothers		Linked mothers		Unlinked mothers	
	N	%	N	%	N	%
N (row %)	32,040	100.0	31,560	98.5	480	1.5
Year of birth of child						
2010	2,085	6.5	2,055	6.5	25	5.6
2011	1,925	6.0	1,870	5.9	55	11.0
2012	2,925	9.1	2,870	9.1	60	12.1
2013	4,130	12.9	4,075	12.9	50	10.8
2014	3,640	11.4	3,600	11.4	40	8.5
2015	5,180	16.2	5,115	16.2	65	13.5
2016	5,360	16.7	5,275	16.7	85	17.7
2017	3,275	10.2	3,225	10.2	50	10.8
2018	2,815	8.8	2,785	8.8	30	6.7
2019	710	2.2	695	2.2	15	3.1
Maternal age at birth						
13-15	265	0.8	260	0.8	<8	<1.7
16-17	11,705	36.5	11,525	36.5	180	37.1
18-19	15,960	49.8	15,735	49.9	225	46.9
20 and above	3,990	12.4	3,925	12.4	65	13.5
Missing	120	0.4	115	0.4	<8	<1.7
Ethnicity						
White	26,490	82.7	26,190	83.0	300	62.9
Asian	755	2.4	730	2.3	25	4.8
Black	1,640	5.1	1,585	5.0	55	11.7
Mixed/other	2,195	6.9	2,145	6.8	50	10.4
Missing	960	3.0	910	2.9	50	10.2
Region						
East Midlands	2,880	9.0	2,825	9.0	55	11.0
East of England	2,595	8.1	2,575	8.2	20	4.4
London	5,030	15.7	4,870	15.4	160	32.9
North East	2,185	6.8	2,170	6.9	15	3.3
North West	5,130	16.0	5,060	16.0	70	15.0
South East	4,605	14.4	4,550	14.4	55	11.0
South West	1,860	5.8	1,840	5.8	20	4.4
West Midlands	3,960	12.4	3,915	12.4	50	10.0
Yorkshire and The Humber	3,800	11.9	3,760	11.9	40	7.9
Relationship status (enrolment)						
In a relationship with biological father	22,710	70.9	22,400	71.0	310	64.2
In a relationship with other partner	1,005	3.1	990	3.1	10	2.5
Single	7,370	23.0	7,255	23.0	110	23.1
Missing	960	3.0	910	2.9	50	10.2
Living arrangements (enrolment)						
Mother (with or without partner)	16,995	53.0	16,790	53.2	205	42.3
Partner (with or without others, not mother)	6,175	19.3	6,065	19.2	105	22.3
Relatives/other adults	3,130	9.8	3,095	9.8	35	7.7
Alone	1,860	5.8	1,830	5.8	30	6.5
Foster carers/group home/other	2,920	9.1	2,865	9.1	55	11.0
Missing	960	3.0	910	2.9	50	10.2
Has any GCSEs (enrolment)						
No	10,270	32.1	10,120	32.1	150	31.5
Yes	20,795	64.9	20,515	65.0	280	58.1
Missing	975	3.0	925	2.9	50	10.4
Care leaver (during pregnancy)						
No	30,140	94.1	29,720	94.2	420	87.3
Yes	1,185	3.7	1,170	3.7	15	2.9
Missing	715	2.2	670	2.1	45	9.8

Continued.

Appendix Table 3: Continued

	Total FNP mothers		Linked mothers		Unlinked mothers	
	N	%	N	%	N	%
CIN, CPP, or CLA (during pregnancy)						
No	26,510	82.7	26,145	82.8	365	76.0
Yes	4,815	15.0	4,745	15.0	70	14.2
Missing	715	2.2	670	2.1	45	9.8
Drug and alcohol use during pregnancy (14 days before enrolment)						
No	29,165	91.0	28,770	91.2	395	82.3
Yes	1,535	4.8	1,510	4.8	25	4.8
Missing	1,345	4.2	1,280	4.1	60	12.9
Timing of first antenatal appointment						
Before 10 weeks	19,255	60.1	19,000	60.2	250	52.3
10-20 weeks	10,955	34.2	10,770	34.1	180	37.9
20 weeks or more	1,045	3.3	1,030	3.3	15	2.7
Missing	790	2.5	755	2.4	35	7.1
Foetal death						
No	31,900	99.6	31,455	99.7	445	92.9
Yes	120	0.4	90	0.3	35	7.1
Infant death						
No	31,885	99.6	31,410	99.6	475	99.6
Yes	135	0.4	130	0.4	<8	<1.7
Mean number of FNP visits		34.9		35.0		25.8

CIN – Child in Need status; CLA – Child Looked After; CPP – Child Protection Plan; FNP – Family Nurse Partnership.

Appendix Table 4: Timeline for linked FNP data access in England

October 2017	Application submitted to DfE for NPD data
December 2017	Application submitted to NHS Digital for linkage between FNP, HES and NPD
January 2018	Application submitted to Confidentiality Advisory Group (CAG) / National Research Ethics
February 2018	Ethics approval confirmed
	CAG provisional approval
	Delays due to security assurances for DfE not being in place: NHS Digital could not release identifiers for linkage
November 2018	Amendment submitted to NHS Digital removing request for DfE data (due to delays in security assurances being confirmed).
	Amendment submitted to CAG to remove DfE data
January 2019	CAG amendment approved
	New DARS application submitted
June 2019	DfE assurances now in place
	Amendment submitted to CAG to allow linkage with education data (as per original CAG application)
July 2019	CAG approval for second amendment received
	We were advised by NHS Digital to wait until the first application (without education data) had been approved before we submitted an amendment (for the education data)
<b>September 2019</b>	<b>Grant started</b>
November 2019	NHS Digital approval for linkage of HES and FNP data
July 2020	Linked HES – FNP data received from NHS Digital
August 2020	Amendment submitted to allow linkage with education data
March 2021	NHS Digital approval of linkage with education data
September 2021	Linkage with education data completed
October 2021	Linked education and social care data available on the ONS SRS
December 2021	HES and FNP data imported into the ONS SRS

Appendix Table 5: Timeline for linked FNP data access in Scotland

June 2016	Project start
October 2016	Application submitted to Education Analytical Services (EAS)
November 2016	Application submitted to the Public Benefit and Privacy Panel (PBPP) EAS application approved
December 2016	PBPP application approved with conditions (to set up additional data sharing/processing agreements and memoranda of understanding for each of the 10 Health Boards, and to create a new leaflet on data usage for new FNP clients)
February 2017	Set up of data sharing/processing agreements and memoranda of understanding commenced
May 2017	All data sharing/processing agreements and memoranda of understanding in place
June 2017	PBPP approval (conditions met)
September 2017	FNP data sent from FNP Scottish Information System (SIS) to the Electronic Data Research and Innovation Service (eDRIS)
December 2017	Amended data available in safe haven
January 2018	Data query regarding cases flagging and SMR02 flow
February 2018	Amendments submitted to EAS and PBPP regarding fields required
May 2018	PBPP and EAS amendments approved
August 2018	Outcomes list finalised
December 2018	Final controls identified, ready for outcomes to be linked
January 2019- February 2020	Delays in data provision
March 2020	Partial outcome data made available
September 2020	Partial outcome data made available
March 2021	Final datasets received

