

# *A pathway to improved maternity research in Northern Ireland?*

## *Novel linkage of Northern Ireland Longitudinal Study and Northern Ireland Maternity Services System*



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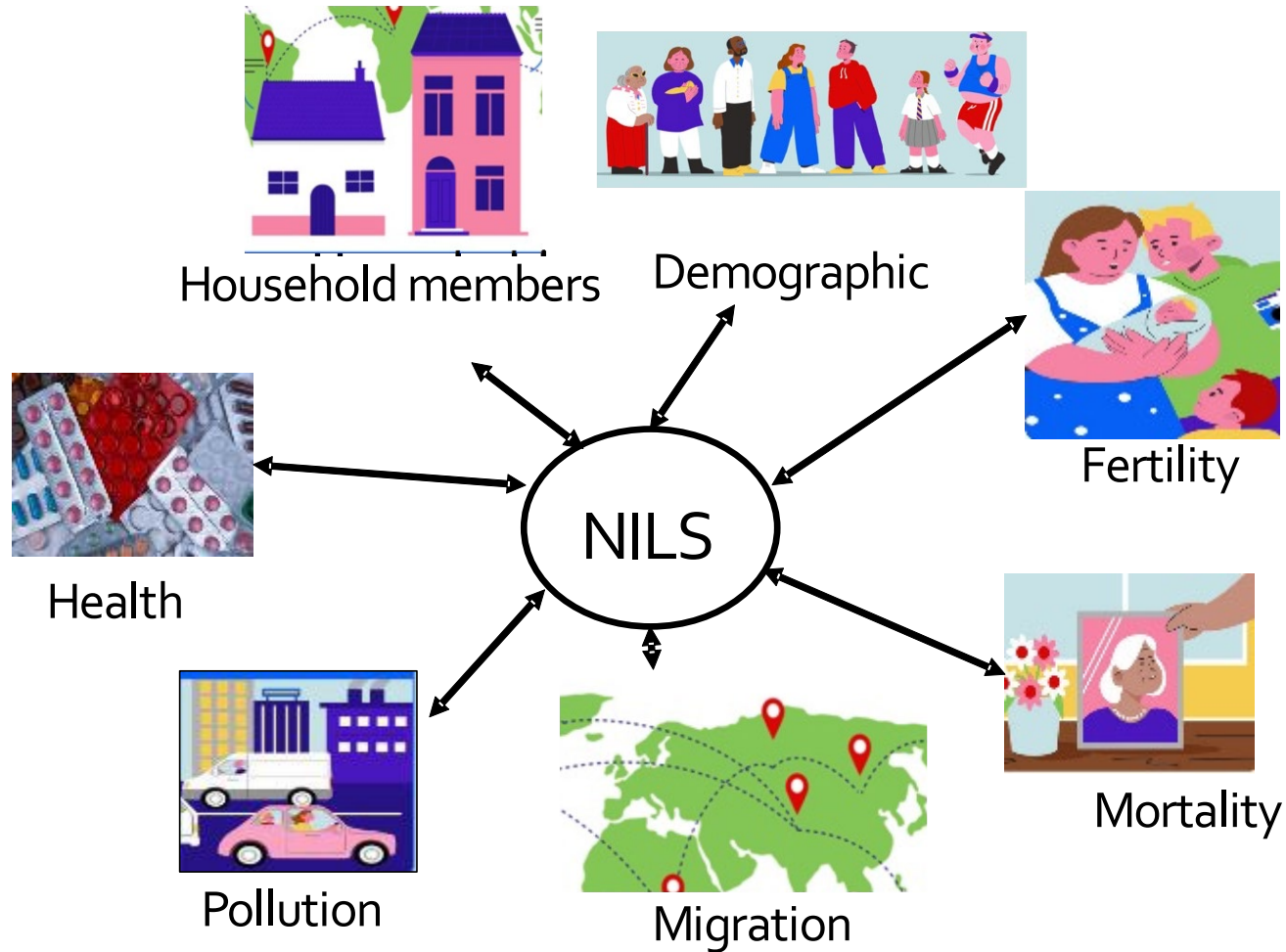
# Background

- Despite a decrease in number of births in N.I, the demographic profile of women giving birth is changing and this is important to consider in the level of demand on maternity and health services.
- Latest published figures in N.I 2021/22 show **over half of women entering pregnancy are now overweight or obese (58.4%)**
- Increased BMI during pregnancy is linked to a number of short- and long-term complications to both mother and offspring.
- It also places significant burden on an already stretched health system

# Objectives

- The linkage of two data sources – the Northern Ireland Longitudinal Study (NILS) and Northern Ireland Maternity System (NIMATS) provide the ideal and unique combination of socioeconomic and clinical data to allow exploration of the socio-economic determinants of maternal obesity
- This pilot study aims to explore the demographic, social and economic determinants of maternal obesity through the following objectives:
  - To explore demographic, social and economic determinants of maternal overweight or obesity.
  - Identify a sub-population of women with more than one pregnancy and categorize according to whether they have lost weight, gained weight or remained the same between pregnancies.
  - To identify whether the determinants of interpregnancy weight change are different from those who have maintained a normal weight.

# What data do we need?



Maternity notes

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# Study design

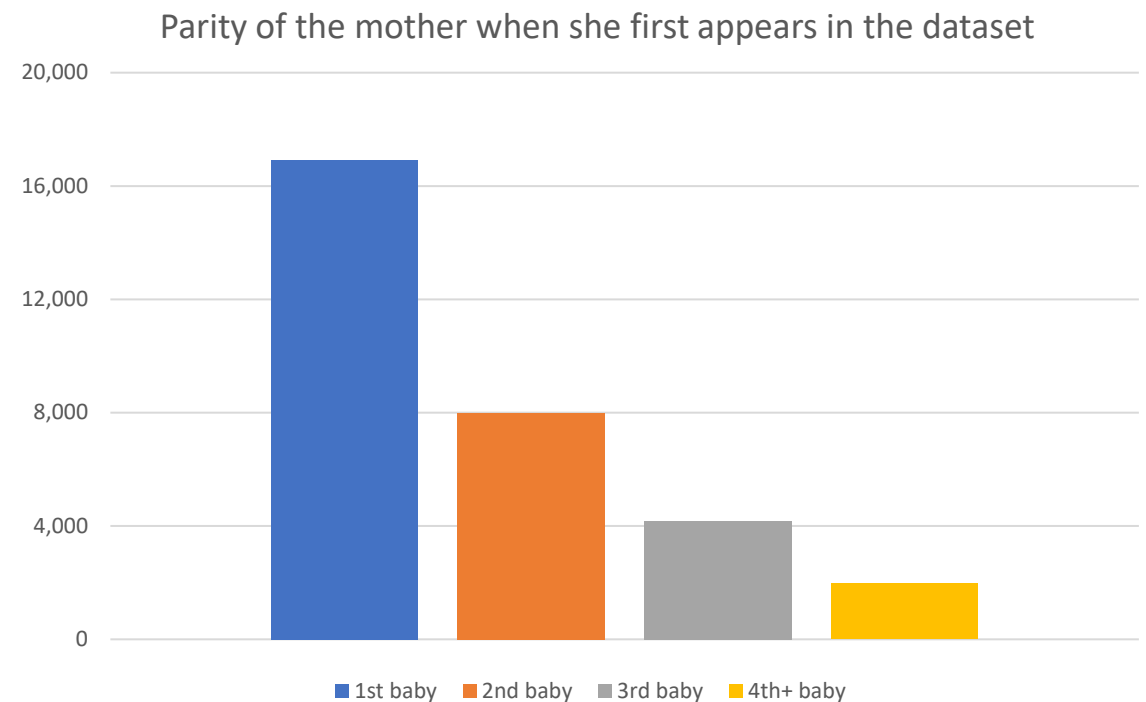
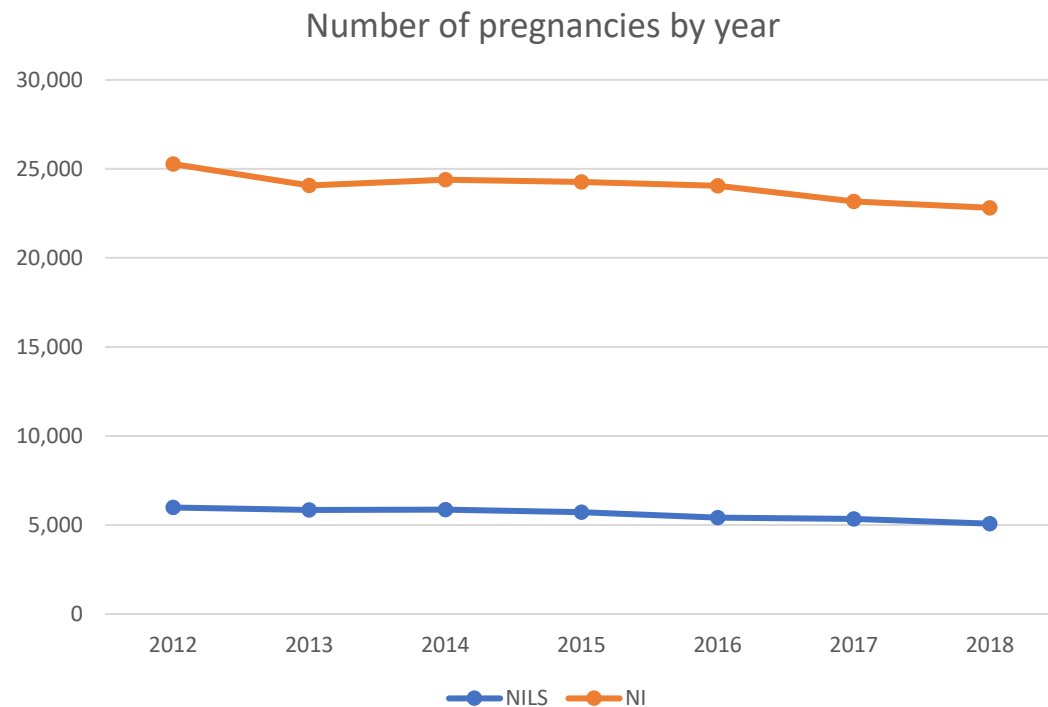


- Demographic
- SES
- Household
- Area

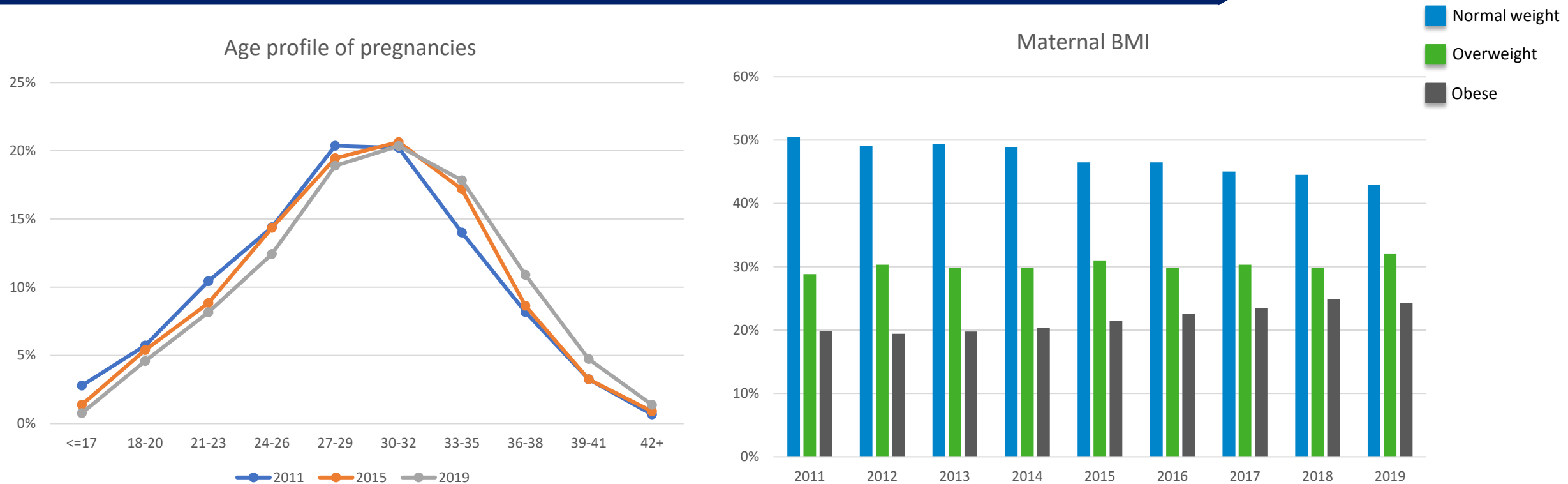
- Number and timing of births
- Pregnancy complications
- Gestational age
- Birthweight
- Maternal BMI

# What can we track using this dataset?

Data is available for 44,627 pregnancies and 31,186 mothers spanning an 8-year period (2011-2019).



# Risk profile of pregnancies



- There is a shift in the age profile of mothers with mean age changing from **28.7 to 30.1** years. This is representative of NI, and UK trends.
- Mean overall BMI is **26.1** which falls within the overweight category. In 2019, only 43% of pregnancies were to women classed as normal weight
- The proportion of pregnant women with diabetes has increased from 2.3% in 11/12 to 15% in 20/21.

# Interpregnancy period characteristics

	Pregnancy 1	Pregnancy 2	Pregnancy 3	Pregnancy 4	Pregnancy 5+
	IPP 1	IPP 2	IPP 3	IPP 4+	
No. of pregnancies	7,857	3,943	1,464	784	
Mean duration (SD) months	32.0 (14.6)	33.5 (15.9)	32.4 (15.7)	29.3 (16.2)	
Mean change in weight kg (SD)	+2.8 (6.2)	+2.0 (6.3)	+1.7 (6.4)	+1.8 (6.1)	
Mean change in BMI (SD)	+1.0 (2.4)	+0.7 (2.4)	+0.6 (2.5)	+0.7 (2.3)	

- Those with the greatest mean increases in weight/BMI were those already classified as overweight +1.0(2.3) or obese +2.2(3.1) compared with normal weight +0.2(1.6)

# Next Steps

- To identify whether the social and demographic determinants of interpregnancy weight change are different from those who have maintained a normal weight.
- To use this data linkage pathway for further research which may inform the new NI maternity strategy

# Acknowledgements

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**NILS**  
Northern Ireland  
Longitudinal Study



# Thank you!

