Uptake of fetal aneuploidy screening after the introduction of the non-invasive prenatal test: A national population-based register study

Karuna van der Meij[1], M. de Groot-van Mooren[2], C. Kooij[1], E. Carbo[3], M. Pieters[4,5], W. Rodenburg[3], M. Bekker[6], R. Galjaard[7], E. Sistermans[1], M. Cornel[1], L. Henneman[1] and the Dutch NIPT Consortium

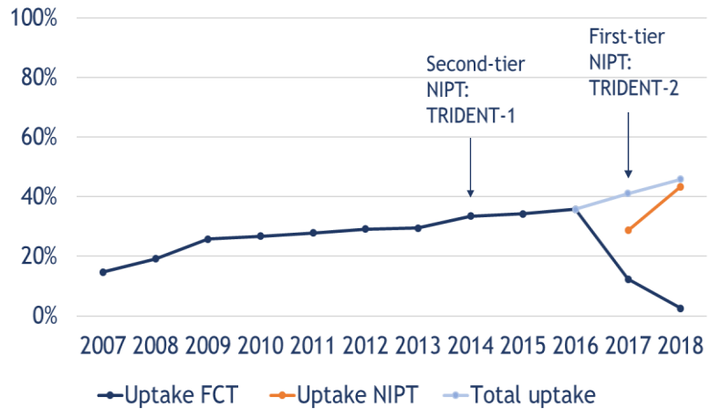
[1] Dept. of Clinical Genetics and Amsterdam Reproduction & Development research institute, Amsterdam UMC, Vrije Universiteit Amsterdam, The Netherlands. [2] Dept. of Pediatrics, Amsterdam UMC, Vrije Universiteit Amsterdam, The Netherlands. [3] Centre for Health Protection, National Institute for Public Health and the Environment, Bilthoven, The Netherlands. [4] Dept. of Obstetrics and Gynecology, GROW school of Oncology and Developmental Biology, Maastricht University Medical Centre, Maastricht, The Netherlands. [5] Foundation Prenatal Screening Southeast region of the Netherlands, Maastricht, The Netherlands, on behalf of the Regional Centers for Prenatal Screening, The Netherlands. [6] Dept. of Obstetrics and Gynecology, Utrecht University Medical Center, Utrecht, The Netherlands. [7] Dept. of Clinical Genetics, Erasmus Medical Center, Rotterdam, The Netherlands.

Background

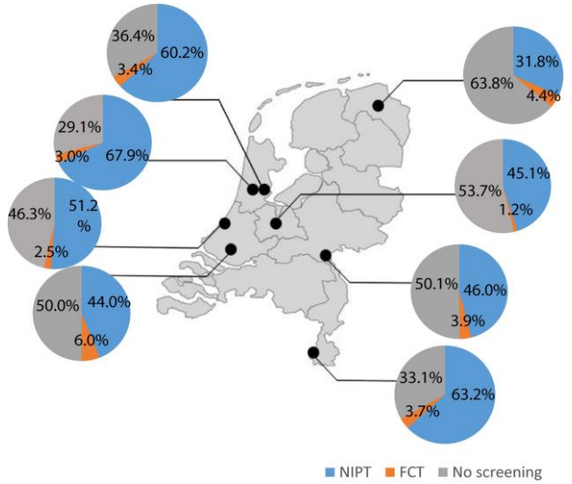
The introduction of NIPT has changed the prenatal screening landscape. Countries are exploring ways to integrate the NIPT in their prenatal screening programs.

This study **aimed** to describe how the **uptake of fetal aneuploidy screening** changed **after the introduction of first-tier NIPT (TRIDENT-2)** within the national prenatal screening program for chromosomal abnormalities in the Netherlands.

Results



Between **2007-2013** FCT uptake increased from **14.8% to 29.5%.** After introduction **second-tier NIPT** in 2014 (TRIDENT-1), FCT uptake increased from **29.5% to 34.2%.** After introduction of **first-tier NIPT** (TRIDENT-2), FCT uptake declined to **2.6%** and NIPT uptake increased to **43.2%.**



Regionally, NIPT uptake ranged from **31.8% to 67.9%.** Furthermore, NIPT uptake in **socio-economically disadvantaged neighbourhoods was 20.3%** whereas NIPT uptake in all other neighbourhoods was **47.6%**

Methods

A population-based **register study.**

Pregnant women choosing to have first-trimester combined testing (FCT) or NIPT.

Uptake assessed between January 2007 and March 2019.

Postal codes were used to compare NIPT uptake in **socio-economically disadvantaged neighbourhoods** and all other neighbourhoods .

Conclusion

An **increase** in total fetal aneuploidy screening uptake from 14.8% in 2007 up to 46% in 2018 was observed. The **existing trend continued** after the introduction of first-tier NIPT. Uptake appears to have **stabilized** within a year after introduction of first-tier NIPT. Despite a **centralized approach** with **uniform counselling,** differences in regional uptake and disadvantaged neighborhoods were seen. More research is needed to explain these differences. **Ongoing evaluation** and **monitoring** remains essential.

k.vandermeij@amsterdamumc.nl

van der Meij, KRM, de Groot-van Mooren, M, Carbo, EWS, et al. Uptake of fetal aneuploidy screening after the introduction of the non-invasive prenatal test: A national population-based register study. *Acta Obstet Gynecol Scand.* 2021; 00: 1-8.