Induction of labor versus expectant management in women with obesity:
Assessing the risk of cesarean delivery and other maternal and neonatal outcomes

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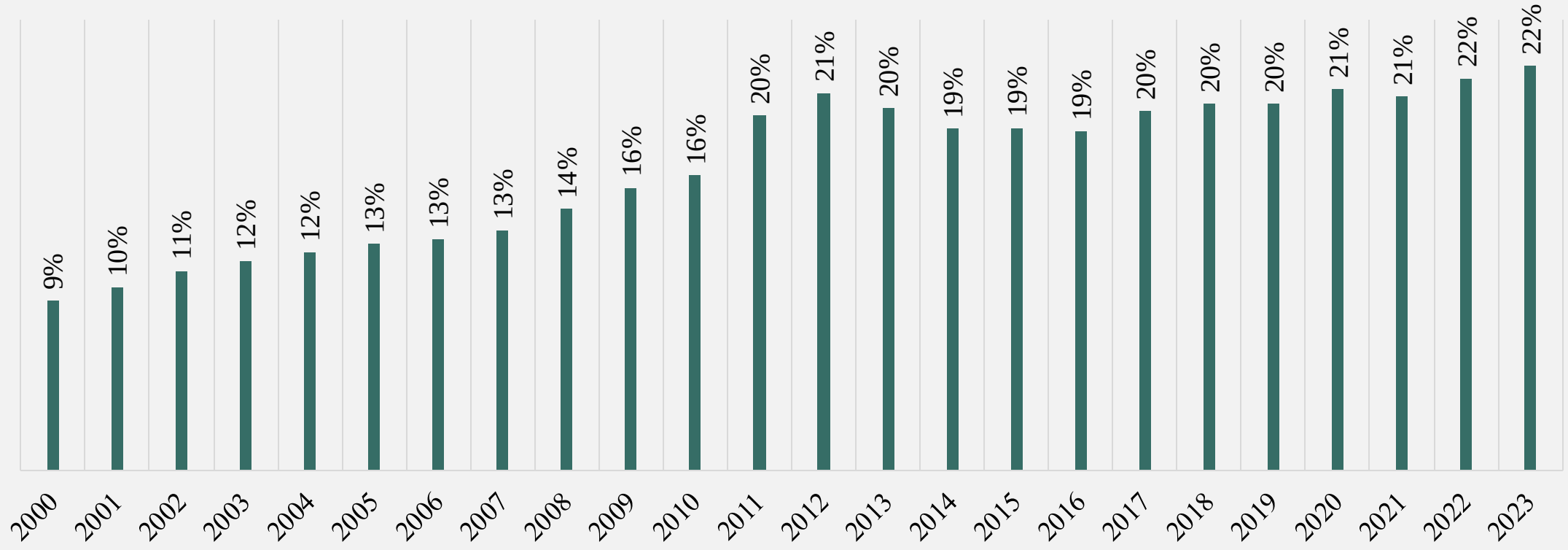
Background

Overall proportions of labor inductions in Denmark from 2000 to 2023



Source: Figure 2 in the Dissertation, page 5. Data from the Danish Health Data Authority (esundhed.dk)

Body mass index (BMI) [1]

- Underweight: < 18.5 kg/m^2
- Normal weight: 18.5 to 24 kg/m^2
- Overweight: 25 to 29 kg/m^2
- Obesity class I: 30 to 34 kg/m^2
- Obesity class II: 35 to 39 kg/m^2
- Obesity class III: ≥ 40 kg/m^2

[1]*World Health Organizations (WHO). A healthy lifestyle - WHO recommendations. 2010*

Obesity during pregnancy and birth

- 13% of women in the childbearing age[1,2]
- Associated with various complications during pregnancy and labor[3,4]
- 19%-22% of cesarean sections are performed in women with obesity[5]

Note

Women with obesity face a higher risk of pregnancy and labor complications compared to women of normal weight.

Examples of increased risk:

- Hypertensive disorders in pregnancy
- Gestational diabetes mellitus
- Large-for-gestational-age festuses
- Cesarean section
- Stillbirth

[1]*Obesity and pregnancy. Danish Society of Obstetrics and Gynecology. 2017*

[2]*Data from the Danish Health Data Authority (esundhed.dk). 2018*

[3]*Ovesen P, Rasmussen S, Kesmodel U. Effect of prepregnancy maternal overweight and obesity on pregnancy outcome. Obstetrics and Gynecology. 2011 Aug;118(2 Pt 1):305-12*

[4]*Vats H, Saxena R, Sachdeva MP, Walia GK, Gupta V. Impact of maternal pre-pregnancy body mass index on maternal, fetal and neonatal adverse outcomes in the worldwide populations: A systematic review and meta-analysis. Obes Res Clin Pract. 2021 Nov-Dec;15(6):536-45*

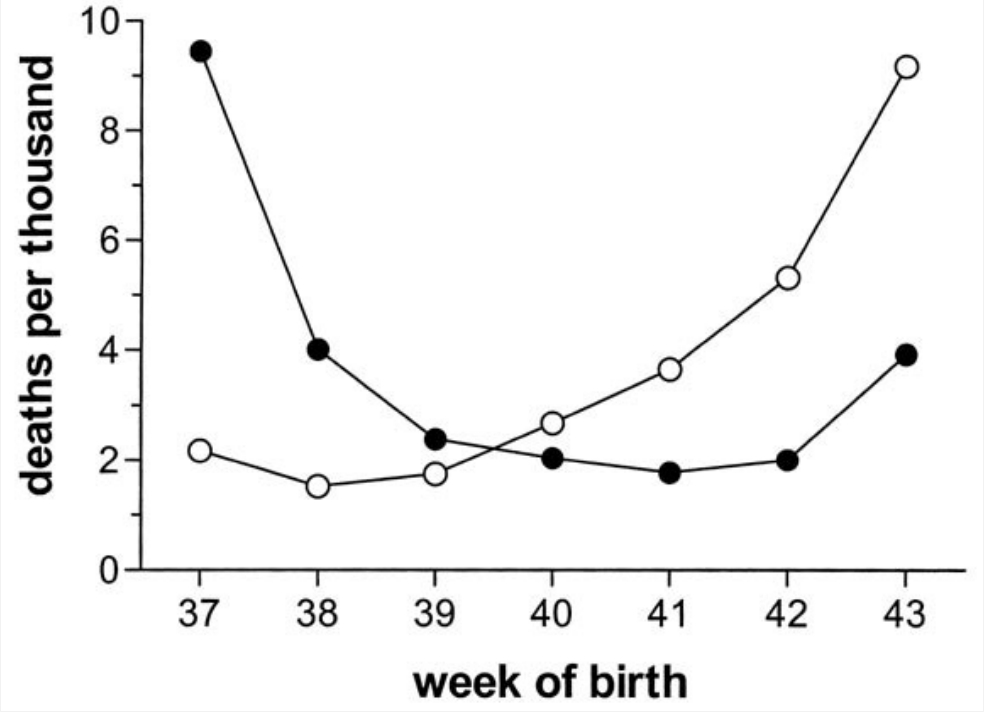
[5]*Data from the Danish Health Data Authority (esundhed.dk). 2020-2023*

Timing of delivery

- Can timing of delivery with labor induction reduce cesarean sections among women with obesity?

- Ending pregnancy through induction of labor
- Ongoing pregnancy

Timing of delivery? Perinatal risk



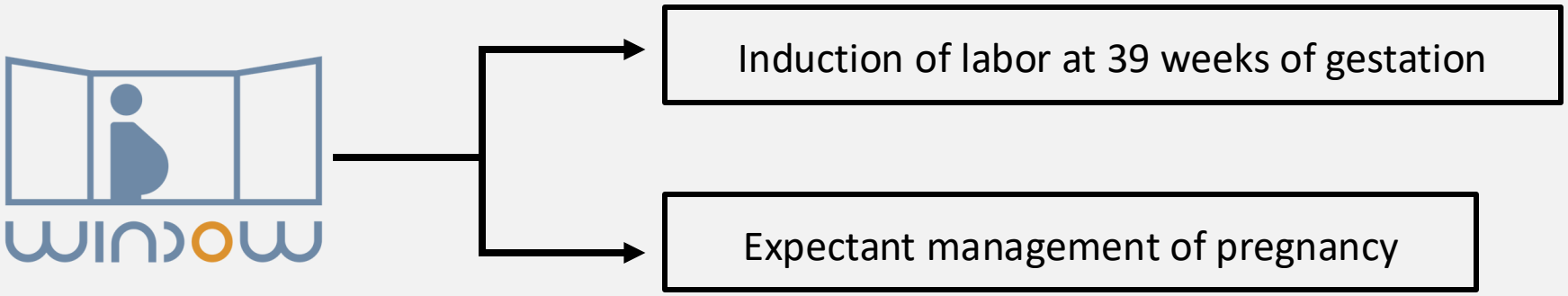
Smith, G.C., & Smith, G.C.S. (2001, February). Life-table analysis of the risk of perinatal death at term and post term in singleton pregnancies. American Journal of Obstetrics and Gynecology, 184(3), 489-496.


window

Aim

- To assess the cesarean section rate in women with obesity undergoing induction of labor at 39 weeks of gestation compared to that in women undergoing expectant management

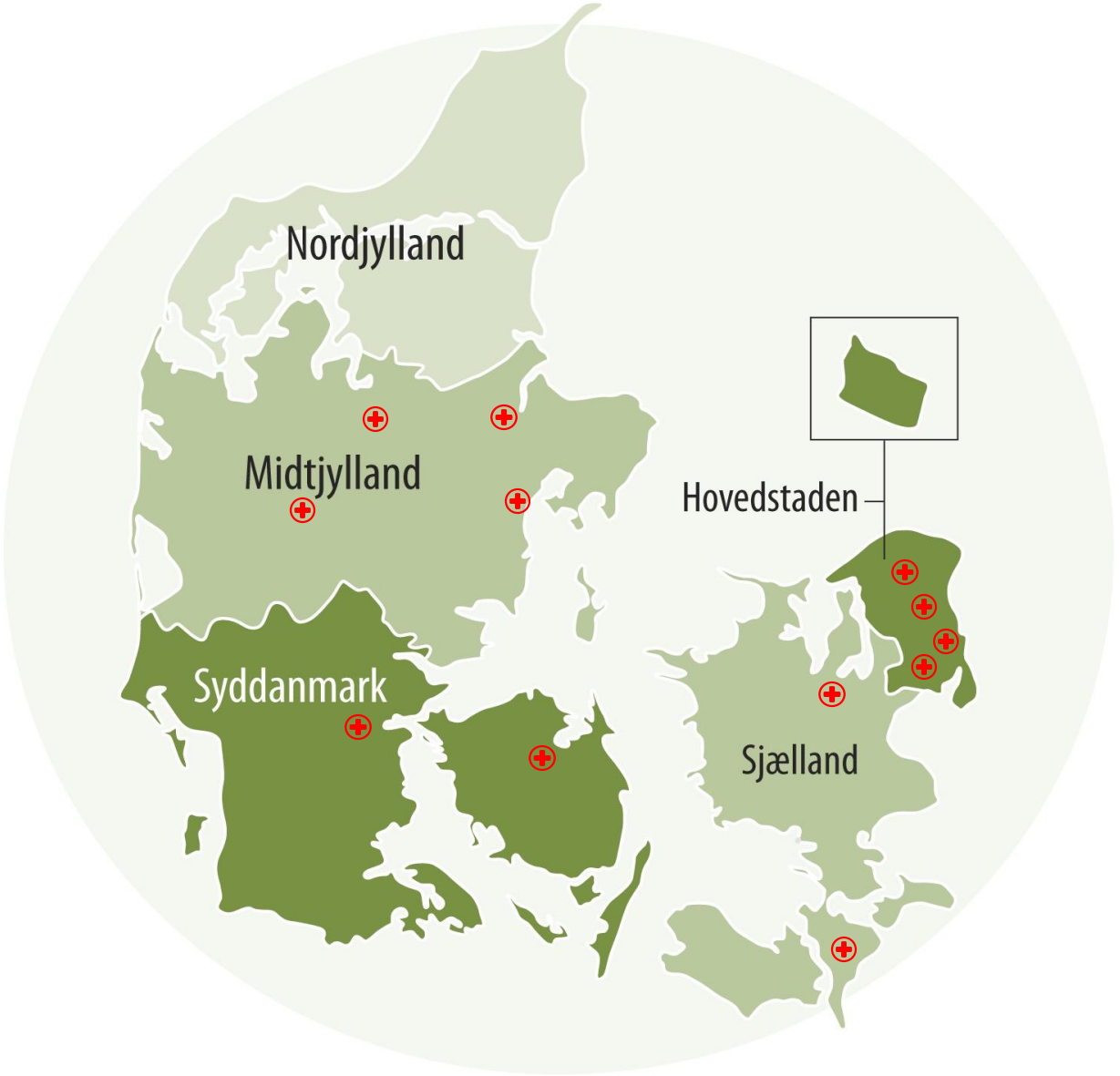
Study design



- Randomized controlled trial
- 1:1 ratio
- Open label

Study design

- 12 Danish delivery departments
- In-house neonatal intensive care unit
- October 2020 to June 2023



Study population

- Inclusion
  - Women with pre-pregnancy obesity
  - Low-risk pregnancy
  - Singleton pregnancy
  - Cephalic presentation
  - Understanding and reading Danish
  - Aged ≥18 years
  - Accurate measurement of gestational lenght

Primary outcome

- Cesarean section

Secondary outcomes

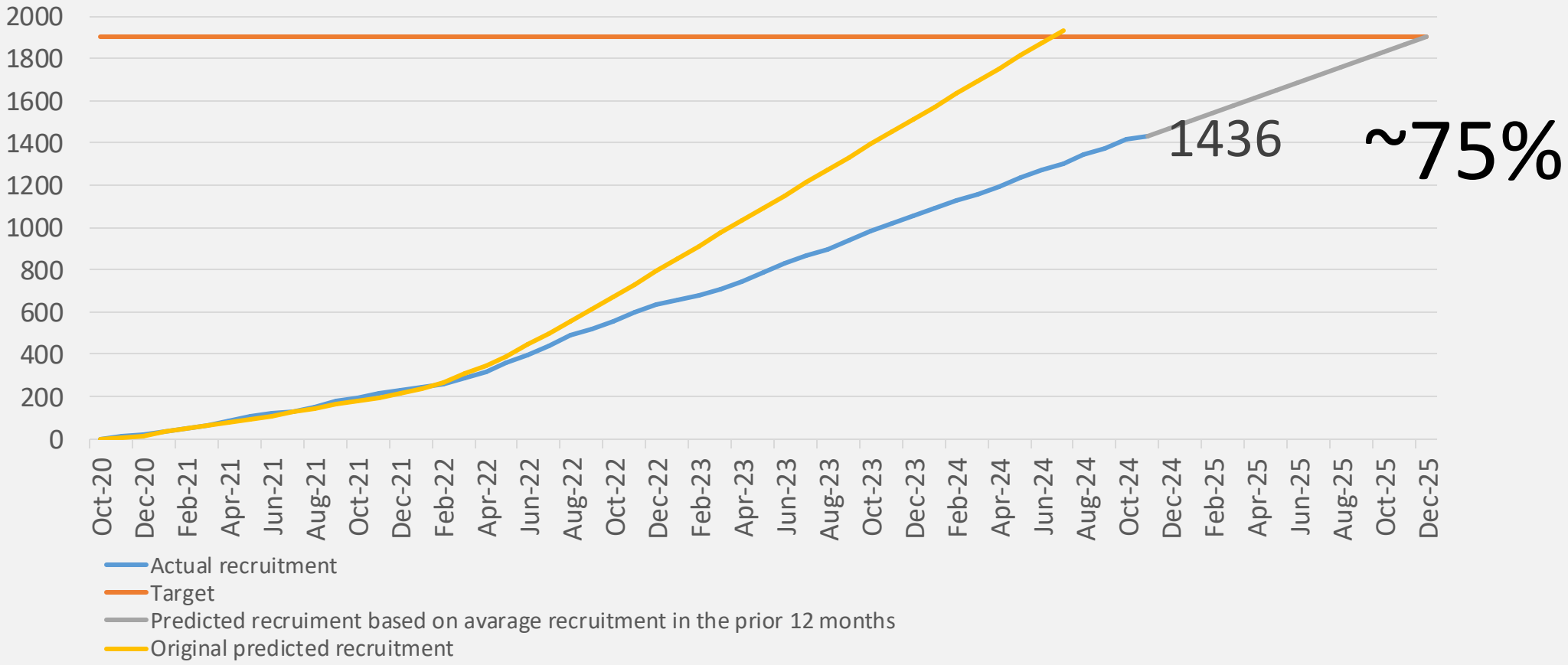
- Maternal and neonatal outcomes

  Perinatal death | Need for respiratory support | Apgar scores below 4 at 5 minutes | Hypoxic ischemic encephalopathy | Seizures | Meconium aspiration syndrome | Infection | Birth trauma | Intracranial hemorrhage | Hypotension
- Childbirth experience
- Postnatal depression

- Motivations and experiences around labor induction[1]

[1]*Hansen J, Krogh LQ, Fuglsang J, Boie S, Henriksen TB, Taastrøm KA, et al. Motivations for and experience with labor induction at 39 weeks in women with obesity-A qualitative study. Acta Obstet Gynecol Scand. 2024 Oct 31.*

Recruitment status



Source: Figure 8 in the Dissertation, page 50

Perspectives

Possible scenarios

- Labor induction could be superior to expectant management
- Labor induction could be inferior to expectant management
- Labor induction could show no difference compared to expectant management

Thank you

- Women participating
- Research midwives
- Site-responsible investigators
- Collaborating sites
- DMEC and TSC members
- WINDOW study group

- Financial support:

  Novo Nordic Foundation · Health Research Foundation of Central Region Denmark · Department of Clinical Medicine, Aarhus University · The Augustinus Foundation · Faculty of Health, Aarhus University · Dagmar Marshall's Foundation

DO-IT – What have you done?

- Founding
- Facilitation