The Mothers of Rotterdam program focuses on highly vulnerable pregnant women. The objective of the program is to increase the chances of a healthy pregnancy and a healthy and safe postpartum period that can give the child a good start in life.

The Mothers of Rotterdam program aims to provide pregnant women in the most vulnerable groups with support and care program to sustainably improve their vulnerable situation. The ambition of this program is twofold; to develop a demonstrably effective intervention for tangible support to these vulnerable pregnant women; the implementation of this intervention in the existing procedures of urban care institutions and community welfare teams. The organization responsible for implementing the program is Bureau Frontlijn. The research is performed by the Department of Obstetrics and Gynaecology, Division of Obstetrics and Prenatal Medicine of Erasmus University Medical Centre. Both the program and the associated scientific research are funded by De Verre Bergen Foundation.

INCREASED RISK OF PERMANENT DAMAGE TO THE CHILD’S HEALTH

Scientific studies show that highly vulnerable pregnant women have a greater risk of adverse perinatal outcomes, health problems in the mother, and problems with the child’s growth and development. On top of that, these mothers commonly experience numerous problems in raising and caring for their child. The problems with raising and caring for have a particularly important impact in the period immediately after birth and leads to problems in infant-mother attachment and more health related problems in the infant. Problematic infant-mother attachment, in the first three years of the child’s life, increases the risk of permanently impaired intellectual- and motor development in the child. The health issues in the infant are particularly problematic due to inability of the mother to reverse the negative spiral they are in due to a lack of resources and limited self-care and self-direction. Ultimately, this can lead to recurring problems within these families, which often result in an intervention by the Child Protective Services.

Also, when these children grow up, they are at an increased risk of cognitive impairment, psychological problems, and medical problems like obesity, diabetes and cardiovascular diseases. All these issues are prone to pass on the vulnerability to the future generations.

BASIC STRUCTURE OF THE PROGRAM ‘15-’21

A total of 600 pregnant women who have been recognized as highly vulnerable, will be offered an intensive support program. In this context, ‘highly vulnerable’ refers to a situation where a combination of medical and non-medical risks factors exist, without any distinction with respect to age, number of children already given birth to, background of the mother.

KEY FIGURES FOR THE MOTHERS OF ROTTERDAM PROGRAM

8000 Children born in Rotterdam (per year)

3600 Children born in a disadvantaged situation (per year)

1200 Total number of women participating in the study

Term of participation by the pregnant woman

3 YEARS

Total duration of the program

6,5 YEARS

Number of women participating in the program (total) years

600

600 Control group

600 Treatment group
These factors exacerbate each other’s impact, and likely will impede effective care and self-direction. Over the first four years, the program aims to include 150 pregnant women per year into the program. Each included mother will be provided with guidance and support up to the 3rd birthday of the child. Within each individual program, the mother will receive (non-medical) support in addition to standard medical care for an average of 525 hours.

TARGET GROUP
Currently, there are no absolute figures available for the number of highly vulnerable pregnant women in Rotterdam. The main reason for this is that the vulnerability, or factors suggestive for, is not regularly recorded during pregnancy. The only data that are available on this group of vulnerable pregnant women comes from research initiatives. One study, using a validated instrument (Mind2Care), estimated that approximately 45% of pregnant women living in disadvantaged neighborhoods in Rotterdam can be categorized as vulnerable. Based on the number of women referred to the pilot of Mothers of Rotterdam program in 2014, we expect at least 300 highly vulnerable women per year.

IMPLEMENTATION
The participant starts in the Mothers of Rotterdam (MoR) program during her pregnancy. The program simultaneously addresses medical and non-medical issues. With respect to the medical issues, Bureau Frontlijn directs the mothers towards the correct care services (existing care pathways) and keeps track of changes in these issues. The non-medical support is provided by Bureau Frontlijn teams, consisting of work coaches, case workers and students. Each team supports 30 to 35 pregnant women and new mothers according to the following schedule.

SUPPORT PROGRAM
Phase 1
-7 months - birth
- 2 house visits per week
Phase 2
birth - 1st birthday
- 1 house visit per week
Phase 3
1st birthday - 2nd birthday
- 1 house visit per 2 weeks
Phase 4
2nd birthday - 3rd birthday
- Follow-up care – contact via telephone

DATA FROM THE PILOT PROJECT ’14-'15
In February 2014, the Municipality of Rotterdam’s Social Development Directorate launched a pilot version of the Mothers of Rotterdam program in the neighborhood of Carnisse. Initially, the program focused on offering guidance and support to 100 vulnerable mothers from this neighborhood. Soon after the start of the pilot, it became clear that the demand in the city of Rotterdam by far exceeded this number. Late July 2015, Bureau Frontlijn already provided guidance and support to 300 mothers, from all neighborhoods of Rotterdam. The demographic characteristics of the 225 mothers referred to the MoR pilot project (February 2014-January 2015) are listed below:

MOTHER’S AGE
Number
<18  19-23  24-30  31-35  >36
9  56  92  45  23

SINGLE MOTHER
Number
153
72

NUMBER OF CHILDREN
Number
1st child  2nd-3rd child  ≥ 4th child
101  106  18

RESIDING IN
Number
Disadvantaged neighborhood  Not a Roofless disadvantaged neighborhood
157  57  11
EXECUTION

The pregnant women are referred by their obstetric professionals or independently register themselves to the program. A validated multidisciplinary instrument is used to determine whether the pregnant woman is vulnerable, highly vulnerable, or not vulnerable. Only in the case of extreme vulnerability, the referral results in an interview for intake at the woman’s home, arranged by Mothers of Rotterdam. If this woman is included into the program, she starts in Phase 1.

In Phase 1, a work coach will draft, in consultation with the responsible team, an individual Plan of Action for the woman. This individual Plan of Action is initially directed toward resolving the acute crisis situation. In addition, it describes which further objectives will be pursued; when they become active, and by which means.

Examples include mediation in the case of a threatening eviction, arranging health insurance for the expecting woman, or creating a safe environment for the baby that includes a crib and a changing table. The obstetric professionals, Mothers of Rotterdam and Erasmus Medical Centre (or another hospital, in case the pregnant woman is treated elsewhere) will work closely together to ensure that the medical and non-medical care are coordinated as effectively as possible. To ensure this coordination, weekly case-based consultations can be arranged.

Phase 2 focuses on the circumstances that contribute to a safe infant-mother attachment. In this phase, the team will closely collaborate, and coordinates its activities, with the child health clinic of the Youth and Family Center (CJG).

In Phase 3, the team works to further develop the mother’s skills. The main focus is in the areas of parenting and educational support. This phase also pays attention to the child’s development; including language skills, locomotion, and social and emotional development. In addition, the mother is supported in her efforts to enter a study program or find a job in order to become more self-sufficient.

While the program stops at the end of the third year, the Bureau Frontlijn team members will continue to stay in touch with the mother by telephone. This follow-up program is necessary to ensure that women are effectively supported should they experience a relapse in their situation.

PREVALENCE OF THE NUMBER OF PREGNANT WOMEN REFERRED TO THE MoR PROGRAM

In 2014 per Rotterdam neighborhood/number of deliveries in that neighborhood

MoR % per delivery

- <1
- 1-2
- 2-3
- 3-4
- 4-5
- >5

The chart above is the referral form to be filled out by the obstetric (professional) for referral to the MoR program. The professional indicates which of these assistance requirements are identified as primary reasons for the woman’s referral.
**THEORY OF CHANGE FOR THE PROGRAM**

In order to evaluate the effects of the program, it is hypothesized that the program leads to changes at different levels, which combined will result in the effectiveness of the program. These changes are chained together as a ‘theory of change’, and describes the relationship between selection of eligible pregnant women, implementation of the Mothers of Rotterdam program, and ultimately, the effects on the women and their child(ren). Below, the chart provides an overview of the expected effects of the program on the levels of the individual mother, the child, and the city.

**RESEARCH QUESTIONS**

The study aims to answer the following research questions:

1) Does systematic attention via a step-wise screening model for vulnerable and highly vulnerable pregnant women result in the efficient induction of highly vulnerable women in the Mothers of Rotterdam program?

2) Does the adopted approach to guidance and support result in a) greater/sufficient confidence in the care system; b) direction that is effective and supports the woman’s autonomy; and c) a stronger sense of empowerment (immediate process objectives)?

3) Does the adopted approach result in fewer cases of care avoidance and closer compliance with medical and non-medical agreements/rules?

4) Does the adopted approach contribute to the effectiveness of the initiated medical and non-medical care pathways?

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**FROM PROGRAM TO IMPACT ON THE TARGET GROUP**

- **600 highly vulnerable pregnant women**
- **Mothers of Rotterdam**
  - Intensive guidance and support over a period of 3 years
- **Target group**
- **Program**
- **Results**
- **Effects**
- **Long-term effects**
- **Institutional effects**

- **More mothers who have confidence in the care system**
- **Improved self-care and self-direction in mother**
- **Mothers have a stronger sense of empowerment**
- **Mother is able to provide for herself**
- **Fewer avoiders of care within target group**
- **Mother has a healthier lifestyle**
- **Fewer adverse perinatal outcomes**
- **Child (aged 3 and up) develops well in cognitive, social-emotional and medical terms**
- **Increased self-sufficiency in the mother**
- **Child has better school career and prospects on the employment market**
- **Increased effectiveness of adopted medical and non-medical care pathways**
- **Methodology has been incorporated within the urban care system**
- **Increased effectiveness of adopted medical and non-medical care pathways**

**RESEARCH: VULNERABLE PREGNANT WOMEN**

The study of the Mothers of Rotterdam program will be supervised by Erasmus University Medical Centre. This large-scale study focuses on the effectiveness of the program, the development of the associated methods and the broader support offered to highly vulnerable women in Rotterdam.
MEASUREMENT OF RESULTS

Two groups will be created for the purpose of the study. Both groups consist of highly vulnerable pregnant women who will receive guidance and support. In Group 1, the guidance and support will be provided within the Mothers of Rotterdam program, while Group 2 receives care from the community welfare team. All women, from both Group 1 and 2, who are referred to MoR by (obstetric) professionals, will be screened on vulnerability with an intake interview by one of the MoR team members.

SCHEMATIC OVERVIEW OF THE EFFECTIVENESS STUDY

The total research population will comprise 1200 pregnant women, of whom 600 are cared for by MoR, and 600 by community welfare teams. The following diagram offers a schematic overview of the effectiveness study:

SCHEDULE AND PRODUCTS

The study has a term of five years and is intended to yield the following four products:

1. A description of Best Practices identified within the program, directed toward a) the competences of the care professionals; b) the collaborative relationships between the medical and social partners in the care system; and c) active elements (core elements, care pathways).

2. A description of the results of the program compared to the care provided by the community welfare teams; detection numbers, sense of empowerment in the participants, confidence in the care system, experience of self-direction, compliance, perinatal outcomes and crisis interventions.

3. A cost-effectiveness analysis: the assumption is that the program will lead to an overall reduction of costs for the care system and society.

4. A transfer dossier for implementation within the community welfare teams.

Based on the data recorded in The Netherlands Perinatal Registry, Erasmus University Medical Centre estimates a perinatal mortality rate in the Netherlands of approximately 8.5 per 1,000 infants. The perinatal mortality rate in Rotterdam is expected to be on average at least 15% higher, and even double in some neighborhoods. Rotterdam also has a higher incidence of the main adverse perinatal outcomes (premature birth, excessively low birth weight for gestational age) – in some neighborhoods, over 25% where 15% is to be expected.

The disadvantaged neighborhoods in this study are the neighborhoods designated as ‘power neighborhoods’ by the Dutch government in 2007. The arguments for selecting these specific neighborhoods were set out in the letters to the Dutch House of Representatives of 22 March, 24 April and 21 May 2007 (TK 2006-2007, 30995, nos. 1, 2 and 3). See also article: Graaf de JP, Ravelli ACJ, Wildschut HU, Denktas S, Voorham AJJ, Bonsel GJ, Steegers EAP. Living in deprived urban districts increases perinatal health inequalities. J Matern Fetal Neonatal Med 2013;26:473-481.