

How to identify infants and families in need of an extraordinary effort?

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**“How to identify” is
a complex issue**

How to identify infants and families in need of an extraordinary effort?

“How to identify” is a complex issue

Even more complex because it covers infants AND families

How to identify infants and families in need of an extraordinary effort?

Sometimes, this question reflects the conception of a vulnerable minority in need of extra help

The question: How to identify infants and families in need of an extraordinary effort?

The answer:

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The answer:

- 1) Focus on vulnerable infants (i.e. infants with a serious risk factor profile)**
- 2) Apply specific screening programs**
- 3) Apply universal health promotion programs such as a universal home visit programme**

A health visitor in Denmark

... is a nurse

... with an additional one year formal education in child health

... employed by the local primary health care system

Health visitor program

Most Danish municipalities comply with the guidelines from the National Board of Health and offer:

4-5 home visits by a health visitor during the first year of life

- First week of life
- At 2-3 months
- At 4-6 months
- At 8-10 months

+ need based extra home visits

Health examination at school entry

Health examination at the end of compulsory schooling

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Health examination at

Health examination at the end of compulsory schooling

High coverage, approx. 95%
The health visitors keep records

The Child Health Data-base (CHD)

In the late 1990s a group of devoted health visitors decided to store standardized information from these records in a data-base in order to increase knowledge about service provision and child health

Established 2000, first year's cohort defined as a research cohort, the Copenhagen Child Cohort 2000 (CCC2000)

The CHD includes information about health and development on 100,000 children born 2001 onwards, followed from birth onwards

Also objective information about pregnancy, birth, and socio-demographic variables.

The Child Health Data-base (CHD)

Since 2011 formalized collaboration with the National Institute of Public Health, continuous production of research reports, e.g.

Breast-feeding

Weight status/overweight

Post partum depression/reaction

Sleep problems

Eating and feeding problems

Excessive crying

Motor development

Language and communication

Allergy

Well-being

Family situation

Concerns during first year

Need based home visits

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Language and communication

Allergy

Meal and feeding problems

Walking

**These reports help us answer the question:
"How to identify infants and families in need
of an extraordinary effort?"**

Health visitors' observation of health and development during the first year of life

Objective: To describe developmental and health problems in the first of life in a birth cohort of children, and to analyse potential risk factors for health problems and developmental delay

Data: Records from 23,000 home visits to 6,567 children born 2013 in 15 municipalities (cover approx. 95% of children born in these 15 municipalities).

Source: *Pant SW, Johansen A, Holstein BE. Sundhedsplejerskens indsatser for 0-årige børn. Copenhagen: National Institute of Public Health 2015*

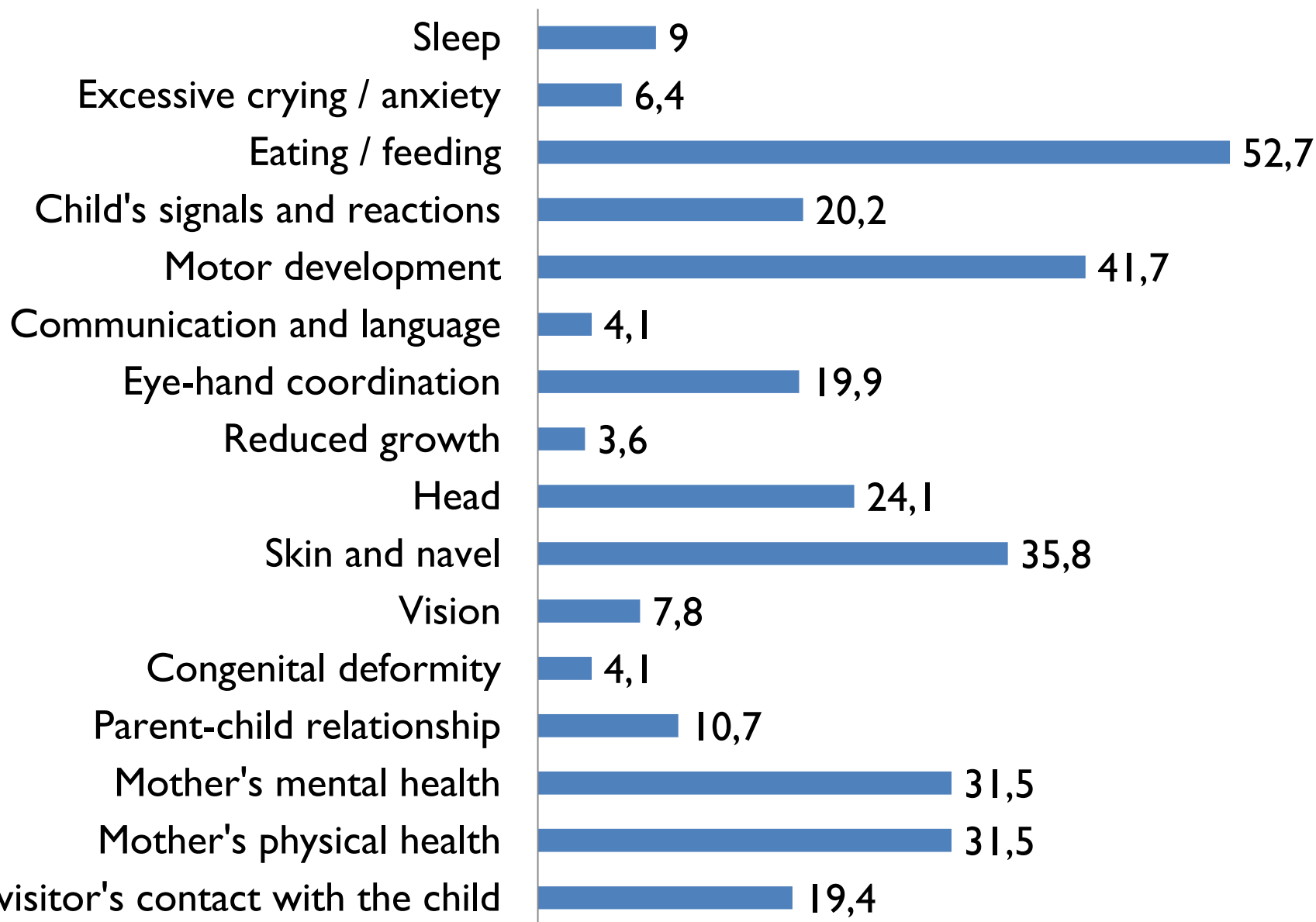
”Concerns”

- Health visitors do not diagnose illness, i.e. there are no *findings* in the records.
- The health visitors focus on resources and processes which stimulate the child’s healthy development.
- Health visitors record ”concerns”. A concern signals a problem, a developmental delay, or something which needs follow-up.
- Some of these concerns are trivial or short time issues, others may be serious threats. A special focus on children with 3+ concerns.

Surprisingly many concerns during the first year of life

Number of concerns during the first year of life	Pct. of infants (N=6567)
0	9,6 %
1	16,6 %
2	18,4 %
3+	55,4 %

% children with specific concerns during first year of life



Statistically significant risk factors for specific concerns (examples)

Risk factors for concerns about parent-child relationship

- Birth weight <2500 g.
- Mothers age <25
- Birth complications
- Exposure to tobacco smoke
- Mother chronically ill
- First child
- Mother with short education
- Mother is an immigrant
- Mother without employment

Risk factors for concerns about communication / language

- Birth weight <2500 g.
- Born before week 37
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On risk factors

Each of the 16 categories of concerns have their own risk factor profile

These profiles are very different

There are no universal risk factors

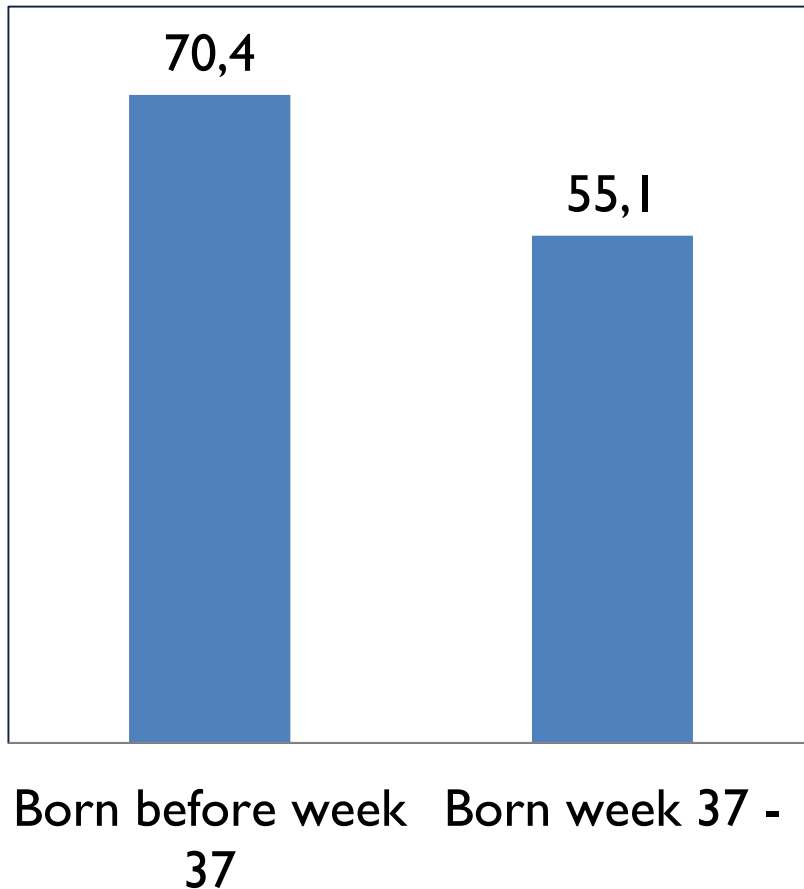
Difficult to use of a risk factor profile for identification of vulnerable children

Risk groups

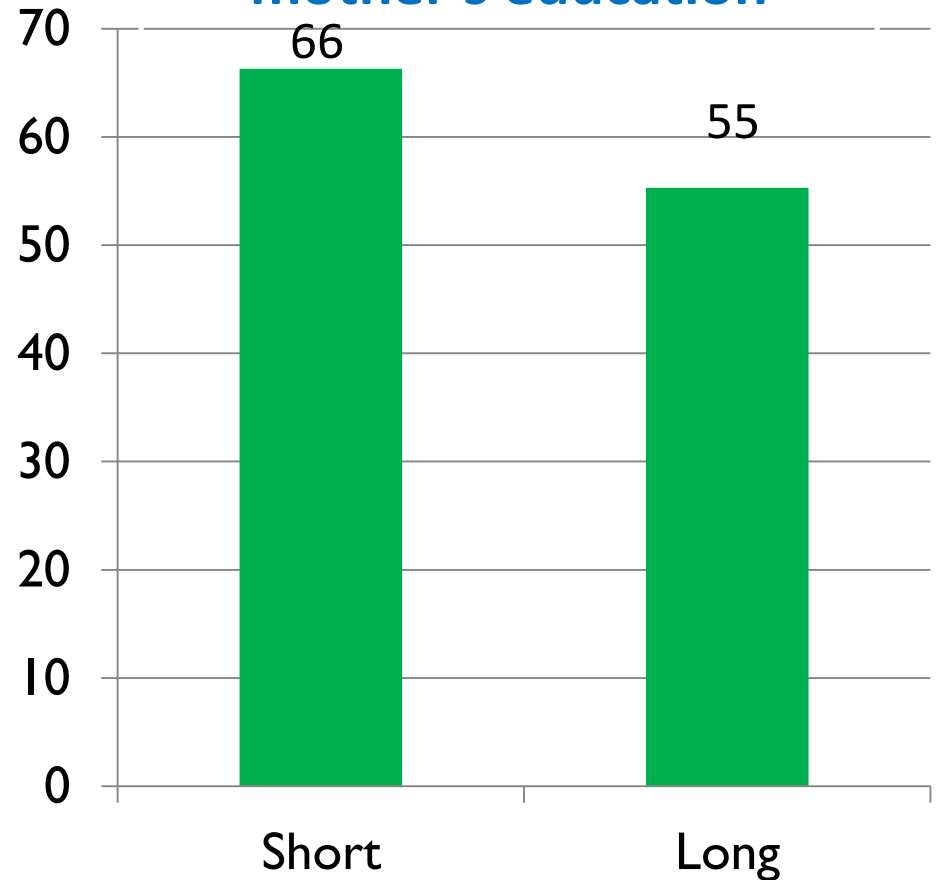
- 55,4% of all children have records with 3+ concerns
- Any particular risk groups?

Risk groups ?

Pct. with 3+ concerns by gestational age



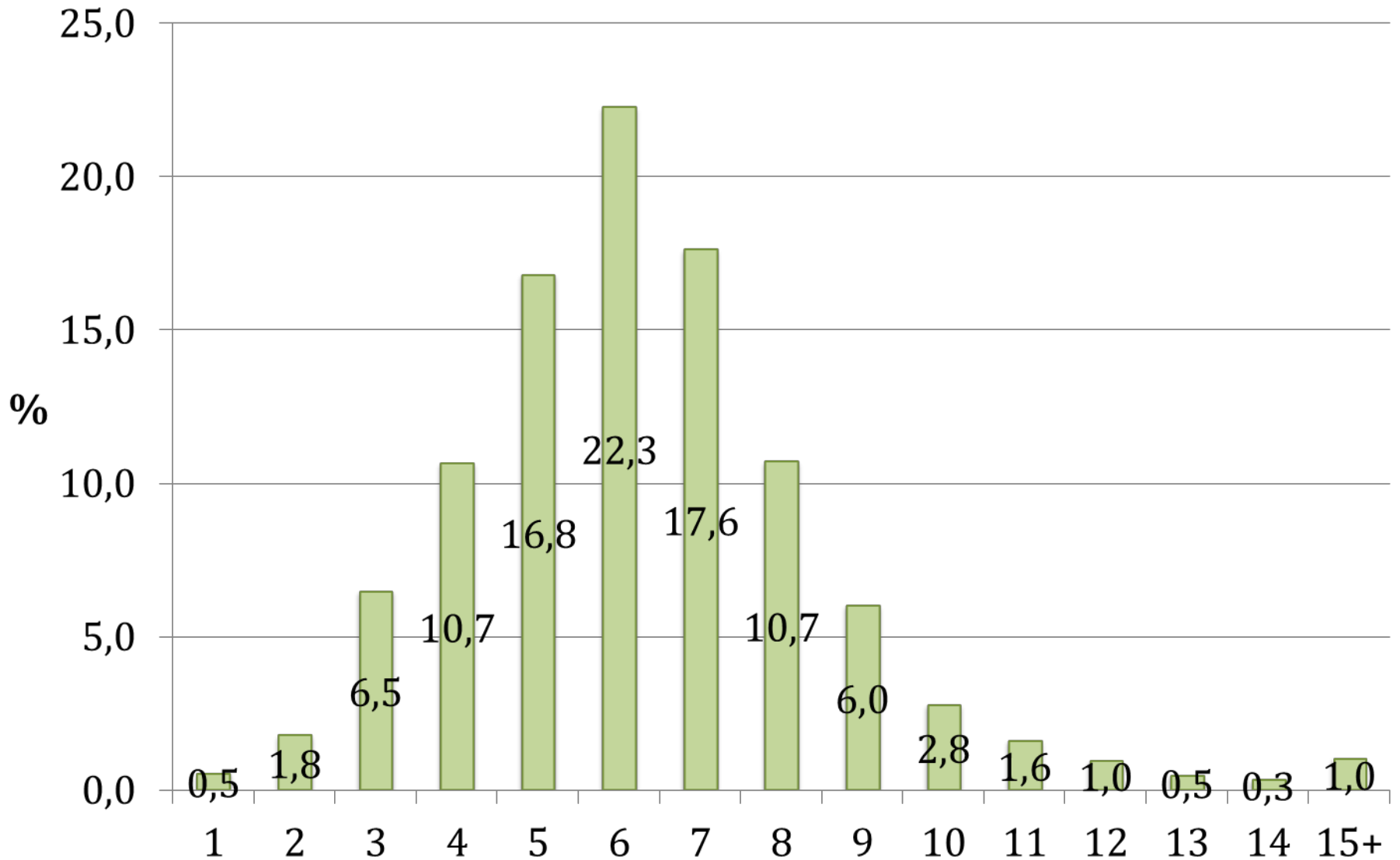
Pct. With 3+ concerns by mother's education



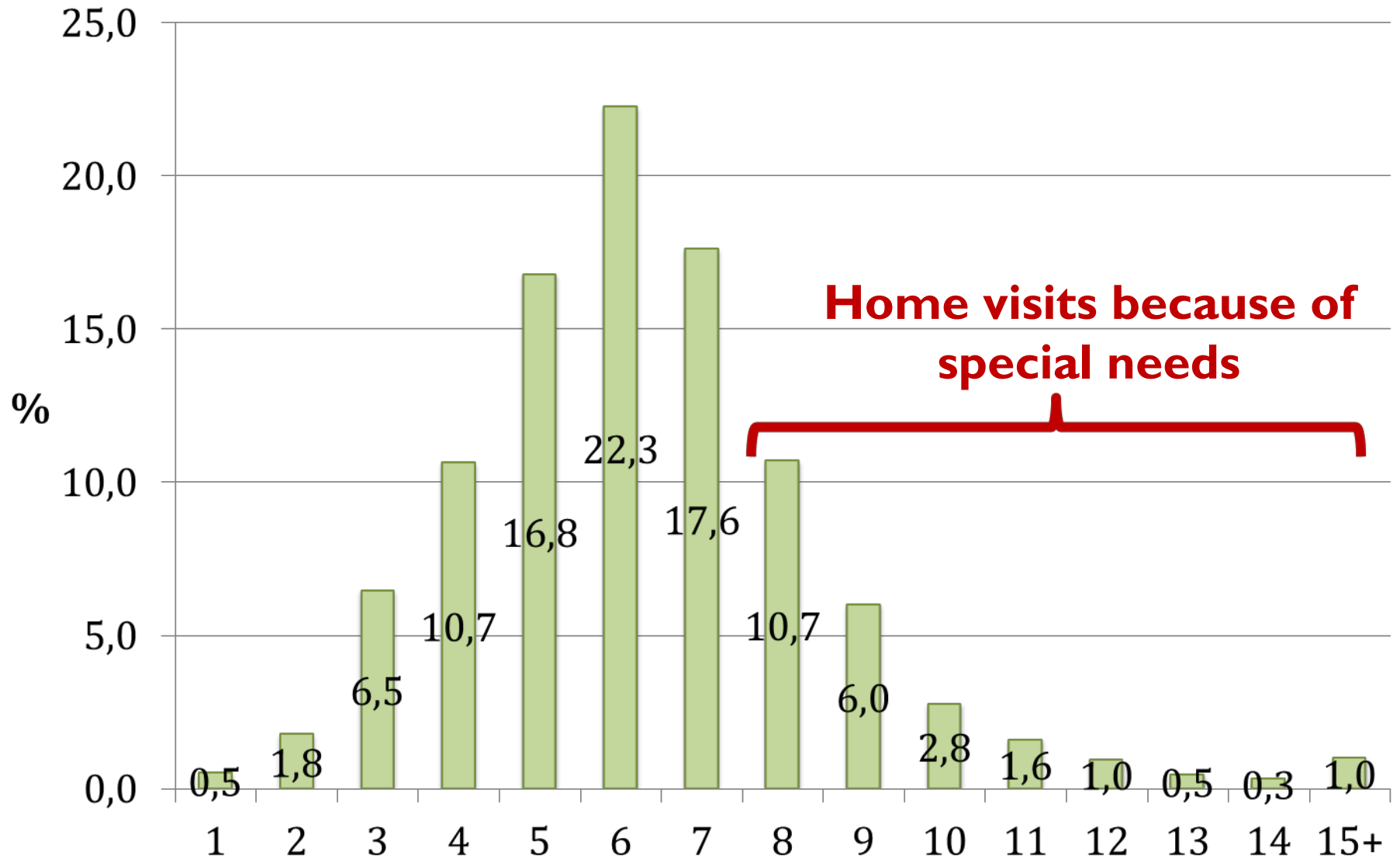
Risk groups

- 55,4% of all children have records with 3+ concerns
- Any particular risk groups?
- Yes but the term "risk group" may be less appropriate when the majority are at risk

Number of home visits during the first year of life



Number of home visits during the first year of life



Home visits because of special needs

Provision of home visits because of special needs: 24% of all children

Risk factors for such visits:

- Mother's first child
- Low birth weight
- Low gestational age
- Multipari
- Mother's age < 25
- Mother is chronically ill

Fairly weak risk factors, all Odds Ratios < 1.5

I.e. provision of these home visits are fairly common in all segments of the population

Home visits because of special needs

It is probably necessary to visit all families in order to provide such special needs visits in a sensible way

The question: How to identify infants and families in need of an extraordinary effort?

The answer:

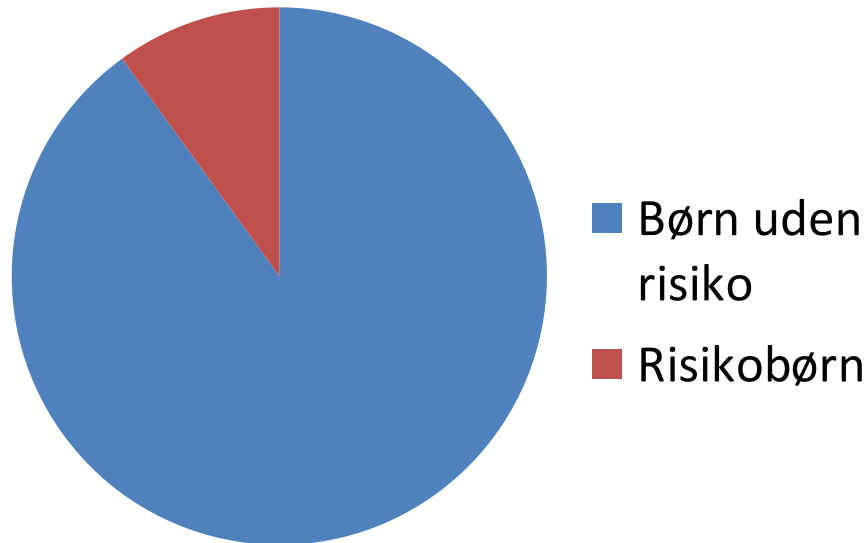
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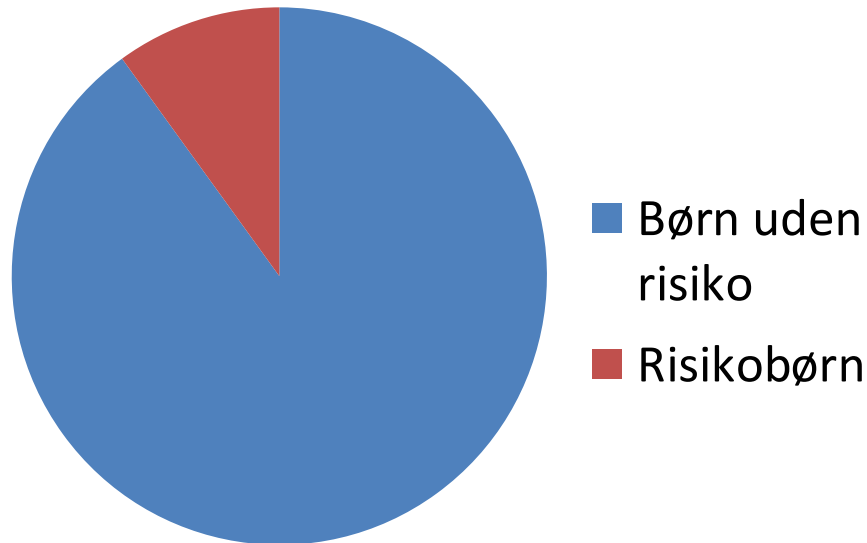
Is it appropriate to focus on vulnerable infants (i.e. infants with a serious risk factor profile)?

Assumption: We can identify a small group (10%) with very high risk (50%) of health problems



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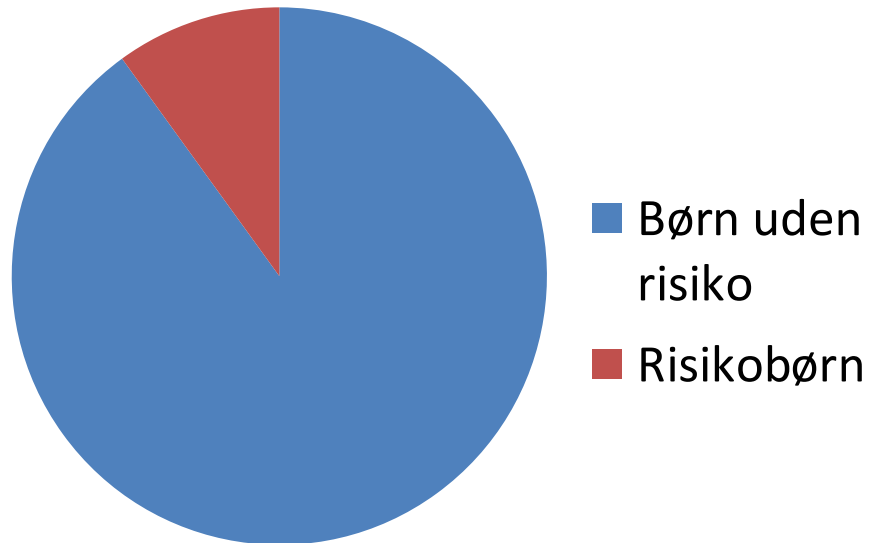
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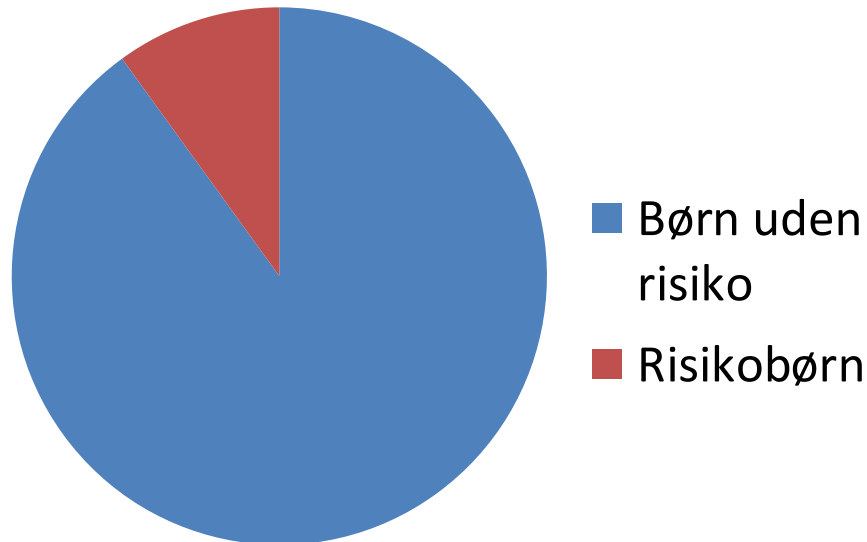


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Third assumption: The study population is 1,000 children

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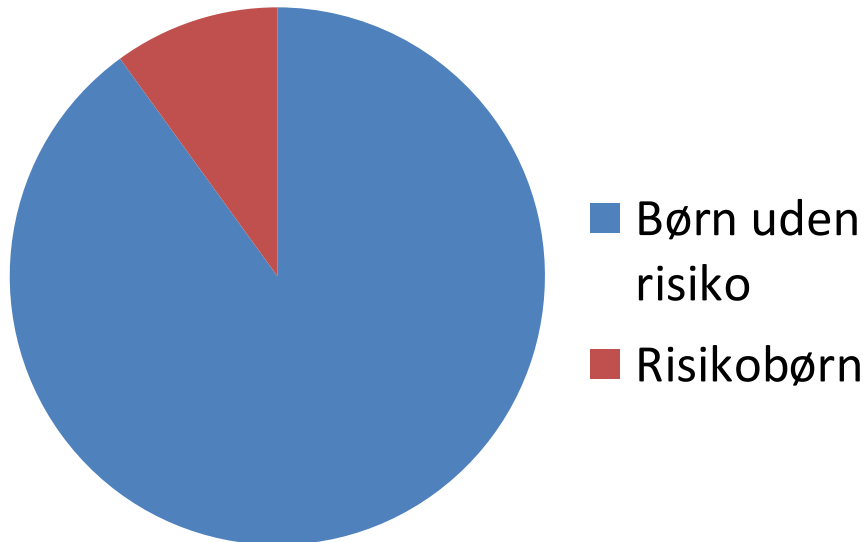
Second assumption: The risk of health problems in the non-problematic majority is only 10%

Third assumption: The study population is 1,000 children

In this case, the high risk population will produce 50 cases and the non-problematic majority will produce 90 cases

Is it appropriate to focus on infants/families with a serious risk factor profile

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Second assumption: The risk of health problems in the non-problematic majority is only 10%

Third assumption: The study population is 1,000 children

In this case, the high risk population will produce 50 cases and the non-problematic majority will produce 90 cases

Most cases appear in the non-problematic majority

Focusing on vulnerable children (i.e. children with a serious risk profile) is not the ideal way to identify infants in need of an extraordinary effort

The question: How to identify infants and families in need of an extraordinary effort?

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Screening

- The primary purpose of screening tests is to detect early disease or risk factors for disease in large numbers of apparently healthy individuals. Should be followed-up by a diagnostic test in case of screen-positive result.

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- Should only be applied for **important health problems** with a **latent stage**, health problems that are **treatable**, where **treatment facilities are available**, where the screening test is **acceptable** to the population, where the **natural history** of the disease should be adequately understood, where there is an **agreed policy on whom to treat**, where the total cost of finding a case should be **economically reasonable**, and where there is an intention to provide screening as a **continuous process**

Screening

- The primary purpose of screening tests is to detect early disease or risk factors for disease in apparently healthy individuals. A diagnostic test in case of screening should be **simple**, **specific**, **accurate**, **reliable**, **safe**, **acceptable**, **feasible**, **cost-effective**, **ethical**, **equitable**, **transparent**, **acceptable**, **feasible**, **cost-effective**, **ethical**, **equitable**, **transparent**.
- Should only be applied for **important** health problems, **latent stage**, health problems where **treatment facilities are available**, **acceptable** to the population, the disease should be adequately **prevalent**, there should be an **agreed policy on whom to screen**, finding a case should be **economically justified**, there is an intention to provide **prevention** or **treatment** and a **process** for **evaluation**.

How many health problems, and which health problems, comply with all these criteria?

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How many health problems, and which health problems, comply with all these criteria?

Not too many

Probably appropriate for a few selected problems such as excessive weight gain, some mental health problems, and delayed language development

Screening is not the ideal way to identify infants in need of an extraordinary effort but may be appropriate for selected health problems

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Universal home visit programs

- Potentially highly acceptable within the target population
- Potentially high coverage
- The home setting is a natural setting for observation of the infant and the parents
- The health visitors have a broad repertoire and capacity to identify health problems and delayed development
- Easy to provide additional need based home visits
- Easy to tailor intervention and guidance of parents
- Good opportunity to provide early intervention
- Less intrusive than later treatment
- Relatively low cost compared to institutionalized service provision

So the answer is:

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- 1) Do NOT focus on vulnerable infants (i.e. infants with a serious risk factor profile) – you will miss most cases!**
- 2) Apply specific screening programs for a few selected health conditions and developmental problems**
- 3) Apply universal home visits with the opportunity to provide extra needs based visits**

The beauty of universal efforts

Most children on roller blades will not experience a serious head injury – so why should they all use a helmet?



Thank you for your attention



