Determining Requirements for an Electronic Child Record in Youth Health Care

Het project EKD JGZ

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Introduction

The following issues exist in the present information management in youth health care (YHC) in the Netherlands:

- Obtaining recent data about children's health costs a lot of effort
- Monitoring is not possible because it is hard to access data or because data are lacking
- It is hard to determine what added value the YHC delivers to the health of children and the prevention of the risks for their health
- The national guideline YHC for 0-19 year old children requires support with information and communication technology (ICT): an electronic child record

The project

- A project to develop a electronic health record for children has been started by eight YHC institutions.

- The research question for this phase of the project was: 'What are the requirements of the care providers for the ECR YHC?'

- To determine the requirements of the care providers the Delphi consensus method was applied, using two rounds of questionnaires: round one a traditional questionnaire sent via email and round 2 a consensus meeting with an electronic voting system.

Delphi method applied

- Expert panel: 66 experts in the field of YHC
- Questionnaire 1 was based on the national dataset for YHC, documents from YHC, literature on electronic records, Health Level 7 version 3 patient data specifications, the workflow chart for preventive care for youth, and existing functional specifications
- Questionnaire 2 contained items with no consensus in round 1 and new input / clarifications on the same topics
- Cut off point for consensus: a percentage agreement equal to or higher than 75% and the remarks given by the panel members indicate that the subject was unambiguously understood
- Analysis: first round descriptive statistics, second round electronic voting program with descriptive statistics

Results

- Response of 79% in both rounds (n=52)
- National dataset for YHC: 25 of 53 concepts obtained consensus in round 1 (47,2%). In round 2, the consensus meeting, 57 statements were presented. Voting took place on only 47 statements: 29 of 47 obtain consensus (62%).
- The statements for which no consensus was reached have been discussed in focus groups, resulting in additional concepts
- Flow chart YHC: 82,2% consensus
- Functional specifications: 11 of 13 statements obtain consensus (85%)
- Usability requirements: first round: 25 of 29 statements obtain consensus (86,2%), second round: 100% consensus

Results: (example) data items for YHC, required additions to national set:

Data on growth and development, for example the national Van Wiechenschema

Audio logic screening

Screening of visual impairments

Target height calculation

Calculation of Body Mass index

Calculation of growth charts

Care plan

Mood

Behavior

Concentration

Hygiene

Allergies

Life events

Child abuse

Heart rhythm, tone, murmur

Speech assessment

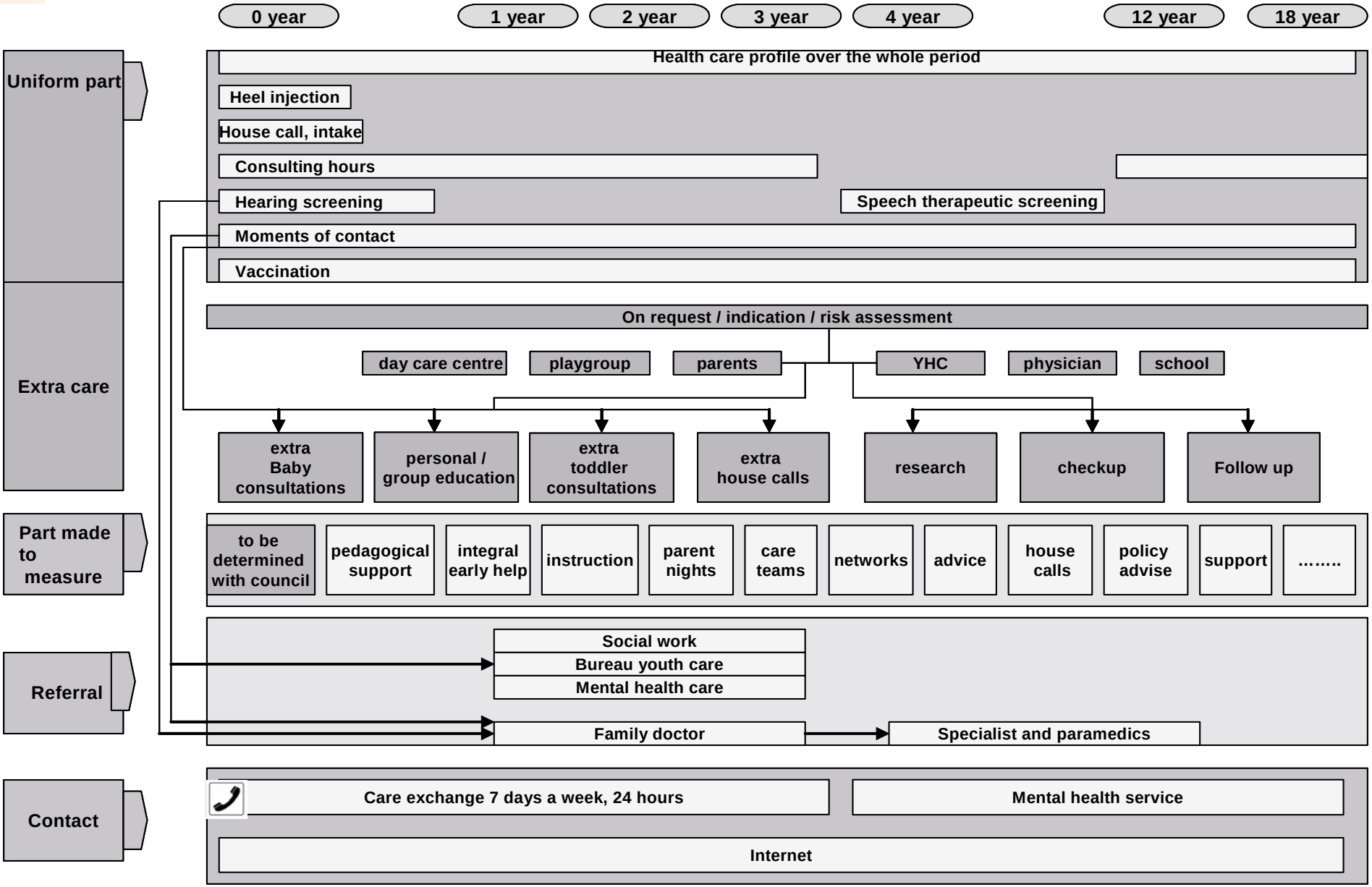
Use of alcohol / drugs / smoking

Example added concept:

‘Congenital heart defect’

Attribute	Value set
Examined	0=Not examined 1= Examined, no special circumstances 2= Examined, special circumstances
Intervention	0=None 1=Education/advice 2=Extra moment of contact 3=Referral
Follow up	Free text
Overall impression researcher	1=Fatigued 2=Passive 3=Undernourished impression, thin 4= Dysmorphism
Overall impression parents	Free text
Effort tolerance	**First year** during feeding of effort (for example crying): 1=Easily fatigued 2=Perspire 3=Rapid breathing 4=Hungry, but can not empty bottle 5=Stops drinking from the mother’s breast 6=Blue or grey skin colour **Toddler age:** 7= Rapid fatigue with effort like walking (stairs), cycling 8= interruption of play by crouch **School going and Adolescent age:** 9= Fainting (*in particular with effort*) 10=Easily fatigued 11=Heart palpitation 12=Pain in the chest

Result: example workflow



Example functional requirements

- For research it is possible to search in all records on the basis of entries
- Add the working area of the employee, for example for which school district one works
- It should be possible to mention the child's school in the record system for YHC
- In one glance it should be visible what risk factors apply to a child
- The system gives a timely alert when certain time limits are about to be exceeded
- It should be possible to register in the system how many times parents/care takers call to consulting hours by telephone and with what questions

Discussion & Conclusion

- The method followed yields a high support among the care professionals for concepts that need to be included in the electronic child record (ECR) in YHC
- Due to time pressure, double statements were presented in round 2, which could have been prevented
- Focus groups needed a lot of time, which might have been prevented by adding a third round
- The results of this project will be used for the national tender of an ECR for YHC

Contact information

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