

# My hospital friend

Evaluation of a digital solution made for children in the age of 0 to 4 years, developed to help them cope with hospital procedures related to pain and anxiety.



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Project team:

Charlotte Drejdal Dyekjær Research responsible nurse - Department of Paediatrics and Adolescent  
Aarhus University Hospital

Line Vind Skovholm Nurse Department of Paediatrics and Adolescent  
Aarhus University Hospital

Betinna Smedegaard Hviid Pain nurse - BDepartment of Paediatrics and Adolescent  
Aarhus University Hospital

Fabio Cujino, CEO Doktor Universe

Dan Andersen Developer Doktor Universe

Emilie Louvat, Developer Doktor Universe

More information:

[chardyek@rm.dk](mailto:chardyek@rm.dk)


[fabio@doktor-universe.com](mailto:fabio@doktor-universe.com)



*Aarhus Universitetshospital*







***"I am very positively surprised to see  
how smooth the procedure went"***

**Anesthesiologist**

***"Super good idea, something  
my kid can look forward to next  
time he is coming to the  
hospital"***

**Mother to ambulant child**

***"My hospital friend seems like a  
very good initiative, a good way  
to capture the kids attention"***

**Father to a hospitalized child**

Thank you to all the children and families that participated in the trials of "My hospital friend". We also got 100.000 kr. support from the Health innovation pool Central Region of Denmark.







# Abstract

Children under 4 years of age at the hospital, can be a difficult group to support during procedures related to anxiety and pain. Distraction is one of the most common methods used for this age target group. Three nurses from the Department of Paediatrics and Adolescent Medicine at the Aarhus University Hospital, together with the company Doktor Universe developed "My hospital friend" to support younger children in the best way possible during procedures related to anxiety and pain.

"My hospital friend" in Danish called "Hjulle" is a mobile solution consisting of a rack carrying an Apple iPad with an application containing 2 games targeted children under 4 years old. The games use Augmented Reality and Computer Vision technologies. The children use their hands to play or with the help and her/his parents. The games are played using gestures and without touching the Apple iPad.

"My hospital friend" has been tested on 21 children between 6 months and 5 years old, during five random days in January 2021. The trials took place at the ward, the clinic, the ambulant & blood sampling area, and the operating room. Data was collected based on field observation and pain scoring using the Face, Legs, Activity, Cry, Consolability (FLACC). Surveys and narratives from the health personnel were also collected. A content analysis of the field notes was conducted to find natural knowledge & information, lately condensed to relevant subjects. Trials patterns were created based on the data. Five topics resulted based on the analysis: 1) The role of parents 2) The health professionals 3) Recognisability, 4) Time factor, and 6) Technology.

The research showed that most of the children reacted positively to "My hospital friend" and 76 % of the children that tried "My hospital friend" during hospital procedures, were totally or partially distracted. Those children who did not get distracted showed a slightly higher pain score at the beginning of the procedure.

This can point to the fact that it might be of significance for the success of the distraction if the child is scared or is already in pain.

Both parents and health professionals manifested that "My hospital friend" was easy to use, the technology worked, and "My hospital friend" worked as a distractor. Besides distracting the child, "My hospital friend" was also useful to help shy children relax or give them a sensation of security in an unusual environment, such as an operating room. The health professionals were primarily positive and manifested that "My hospital friend" could fulfill their need for a lack of tools to support younger patients at the hospital.

# References

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2. Nursing RCo. The recognition and assessment of acute pain in children. Update of full guideline. In; 2009
3. McGrath PJ, Stevens BJ, Walker SM, Zempsky WT. Oxford textbook of pediatric Pain. Oxford 2013
4. "Immersive Virtual Reality for Pediatric Procedural Pain: A Randomized Clinical Trial". Hospital Pediatrics July 2019, 9 (7) 501-507; DOI: <https://doi.org/10.1542/hpeds.2018-0249>
5. [www.centerforkliniskeretningslinjer.dk](http://www.centerforkliniskeretningslinjer.dk) "Vurdering af børns smerter 28 dage-18 år"

# Links

Video demonstration:

<https://vimeo.com/538684816>

Apple App Store:

<https://apps.apple.com/us/app/my-hospital-friend/id1536411927>



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