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Paediatric Nursing Associations of Europe

# Paediatric Nursing Associations of Europe

## 43<sup>rd</sup> meeting

15th May 2024 online  
hosted by Iceland

**Pediatric nursing in Iceland**  
very short overview 😊

**Karítas Gunnarsdóttir**  
Clinical nurse specialist in pediatric nursing  
Pediatric Emergency Care  
Children's hospital in Reykjavík  
Iceland



## Pediatric nursing in Iceland

### Children's hospital Reykjavík

- NICU - 22 beds
- Day ward - 8 beds
- Inpatient ward - 21 beds
- ER – 15.300 visits/year
- Outpatient ward – 17.000 visits/year
- Psychiatric ward – outpatient 5800 visits/year  
– inpatient 17 beds
- Rehabilitation and nursing ward – 5 beds

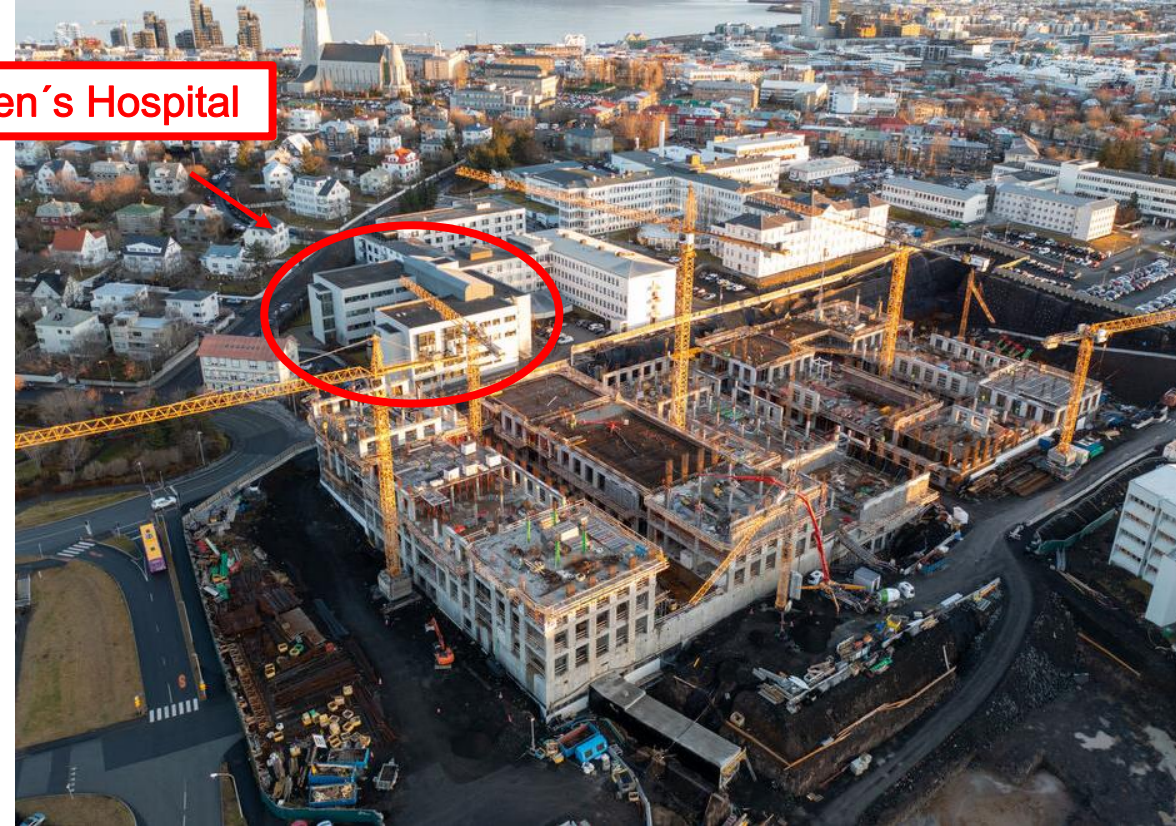
### Children's ward Akureyri

- 6 inpatients beds, 2 NICU beds, day ward and outpatient clinic



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Children's Hospital





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### **Home phototherapy for neonatal jaundice**

**Fanný B. Miller Jóhannsdóttir**  
Clinical nurse specialist (in training)  
NICU  
Children's hospital Reykjavík  
Iceland



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## A little about myself

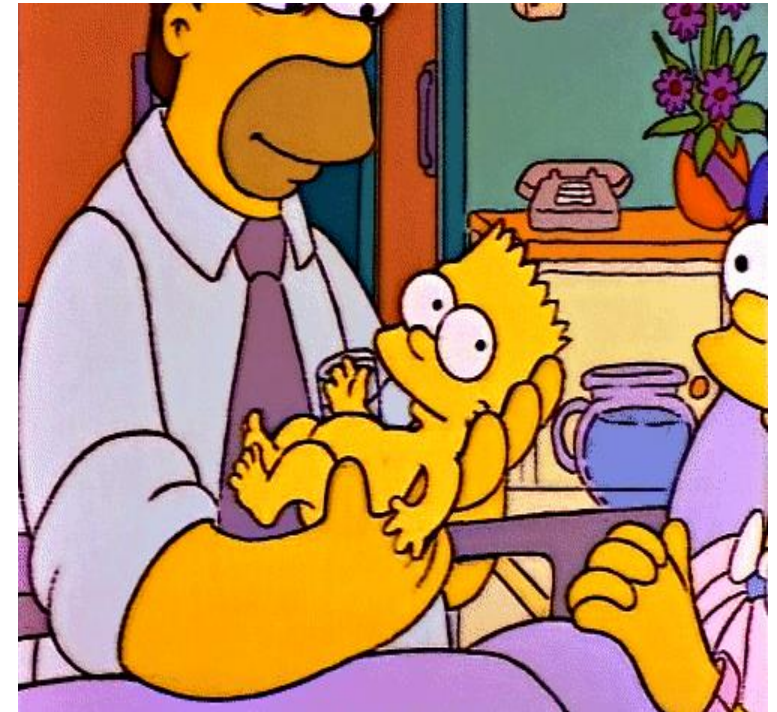
- 2009 Graduated from the University of Iceland, BS
- Working in the NICU since then
- 2021 MSc in Intensive Care Nursing with emphasis on neonatal nursing
- 2024 Finished 2 year long programme in Clinical Nurse Specialist within the University Hospital in Iceland and await for the license from the Directorate of Health



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## Home phototherapy worldwide

- Home phototherapy is practiced in many countries around the world, e.g. Australia, Britain, Denmark, Sweden, Indonesia and Italy
- It is safe, effective, financially viable and promotes the togetherness of child and family





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## Home phototherapy in capital area, Iceland

- Started in March 2023
- 60 neonates received home phototherapy from March 2023 to March 2024
- Parents receive education in the department and instruction on phototherapy device from NICU nurses



Home phototherapy in Reykjavik, October 2023.



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## Home phototherapy in capital area, Iceland

- Midwives take blood samples in the home and assist parents in the home regarding the therapy
- Parents can contact the department 24/7 while receiving therapy
- Neonatologist makes a decision on when to stop treatment and if further monitoring is needed



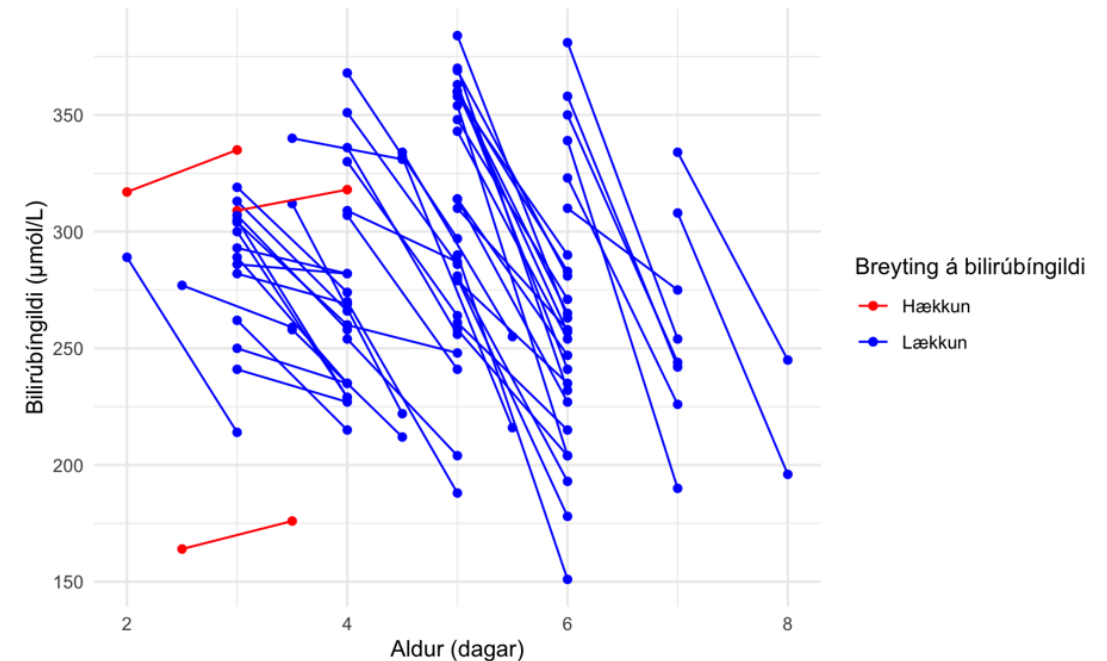
Front page of brochure parents take home with them



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## Home phototherapy in Iceland

- 60 neonates in the first year
- Bilirubin decreased in 95% of cases after starting treatment
- None of the children got severe jaundice



Robertsdottir, B. et al, 2024.





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## Cost effective therapy

- The average cost for an admission to the NICU in Iceland for phototherapy is ca €790/day but the estimated cost for a newborn receiving phototherapy at home is ca €227/day
- Based on that, it can be estimated that the annual savings is around € 43.750 for the health system





## Conclusion



- It seems that home phototherapy is a feasible and safe method to treat neonatal jaundice
- Home phototherapy seems to be more cost effective for the health system than phototherapy in the hospital
- Home phototherapy brings the family together and strengthens the bonding between the neonate and the family



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## Thank you for listening



- Bjarni Hörpuson Þrastarson, o.fl.. (2021). Ljósameðferð við nýburagulu, hversu mikill sparnaður felst í meðhöndlun í heimahúsi? BS ritgerð. Skemman.is <http://hdl.handle.net/1946/38389>
- Bryndís Róbertsdóttir, o.fl. (2023). Nýburagula. Árangur ljósameðferðar í heimahúsi. Greining, áhætta- og vernandi þættir alvarlegrar gulu. BS ritgerð. Not published.
- Pettersson, M., Ryen, L., Eriksson, M., & Ohlin, A. (2023). The cost-effectiveness of home phototherapy for hyperbilirubinemia in neonates: results from a randomized controlled trial. Scientific reports, 13(1), 10727. <https://doi.org/10.1038/s41598-023-37684-y>
- Pettersson, M., Eriksson, M., Albinsson, E., & Ohlin, A. (2021). Home phototherapy for hyperbilirubinemia in term neonates-an unblinded multicentre randomized controlled trial. European journal of pediatrics, 180(5), 1603–1610. <https://doi.org/10.1007/s00431-021-03932-4>



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### **Challenges and results**

### **Nursing children with diabetes and their families**

**Elísabet Konráðsdóttir**  
Clinical nurse specialist in pediatric and family nursing  
Children's hospital in Reykjavík  
Iceland



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## **TYPE 1 DIABETES IS ONE OF THE MOST COMMON CHRONIC DISEASES IN CHILDHOOD**

Number of newly diagnosed children and adolescents is rising

Type 1 diabetes is a difficult disease and requires continuous medical care

Insulin delivery is very complex, with various sensors, pumps and insulin pens

Serious complications, reduced quality of life and survival, greater than previously known

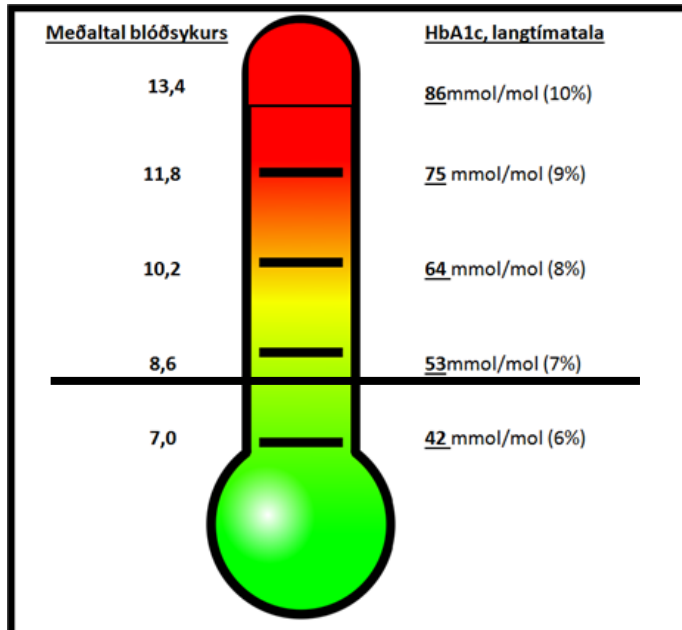
(Rawshani et al, 2018)

Complications from diabetes are relatively rare in children, but the development of serious diseases can begin in childhood if blood sugar is not kept under control.



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## TREATMENT GOALS IN GLYCEMIC CONTROL IN PEDIATRIC OUTPATIENTS WITH DIABETES



A 1% reduction in HbA1c reduces kidney damage and macular bleeding by 37%

(Stratton et al., 2000; Nordwall et al., 2015)



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## THE UNIQUENESS OF CHILDHOOD DIABETES

- Type 1 diabetes requires a lot of knowledge about the nature and complex treatment of the disease
- Is **stressful** and **communication problems within the family may increase** (Weissberg-Benchell et al. 2011, Rybak, et al. 2017, Savin et al. 2018)
- Families are different (different resources, single parents, families of foreign origin, other challenges as ADHD, autism)
- Blood glucose control becomes more difficult during adolescence
- Increased frequency of anxiety, depression, eating disorders associated with diabetes treatment (Buchberger et al. 2016, Troncone et al. 2020)
- The children are in the care of others who have little knowledge of the disease and complex treatment most of the day
- **Anxiety** about complications and the future (Buchberger et al. 2016, Troncone et al. 2020)
- **Transitioning** from children's services to adult services is a challenge



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## INSULIN PUMP THERAPY IS COMPLEX AND DEMANDING

Requires a lot of endurance and discipline  
Allergic reactions to the patch are common  
Fear of injections  
Body image problem  
Technical problem







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## CARE LINK SOFTWARE

Provides the option of remote monitoring  
Closer follow-up





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## **NURSING INTERVENTIONS AND RESOURCES TO MEET THE SPECIFICITY AND NEEDS OF THE CHILDREN AND THEIR FAMILIES**

First meeting in the inpatient ward: A therapeutic relationship is established

Active listening, family situation, strength and support needs is assessed

Emotional support to meet parents reactions and thoughts of the trauma

Education, teaching, counselling

- On nature of diabetes and insulintreatment
- Insulin pump and sensor installation and how it works
- Consultation and advice on the family adaptation to their new position/reality



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# NURSING INTERVENTIONS AND RESOURCES TO MEET THE SPECIFICITY AND NEEDS OF THE CHILDREN AND THEIR FAMILIES

Follow up at the outpatient clinic, advice and support in;

- outpatient interviews
- phone calls
- remote monitoring with care link software
- remote service on teams

**Education for school staff** /kindergarden (online course) and to other relatives (grandparents...)

**Peer education** in summercamps

**Advocate** within the system (due to lack of support, child services and more)

Prepared and **organized transition** from childservice to adultservice



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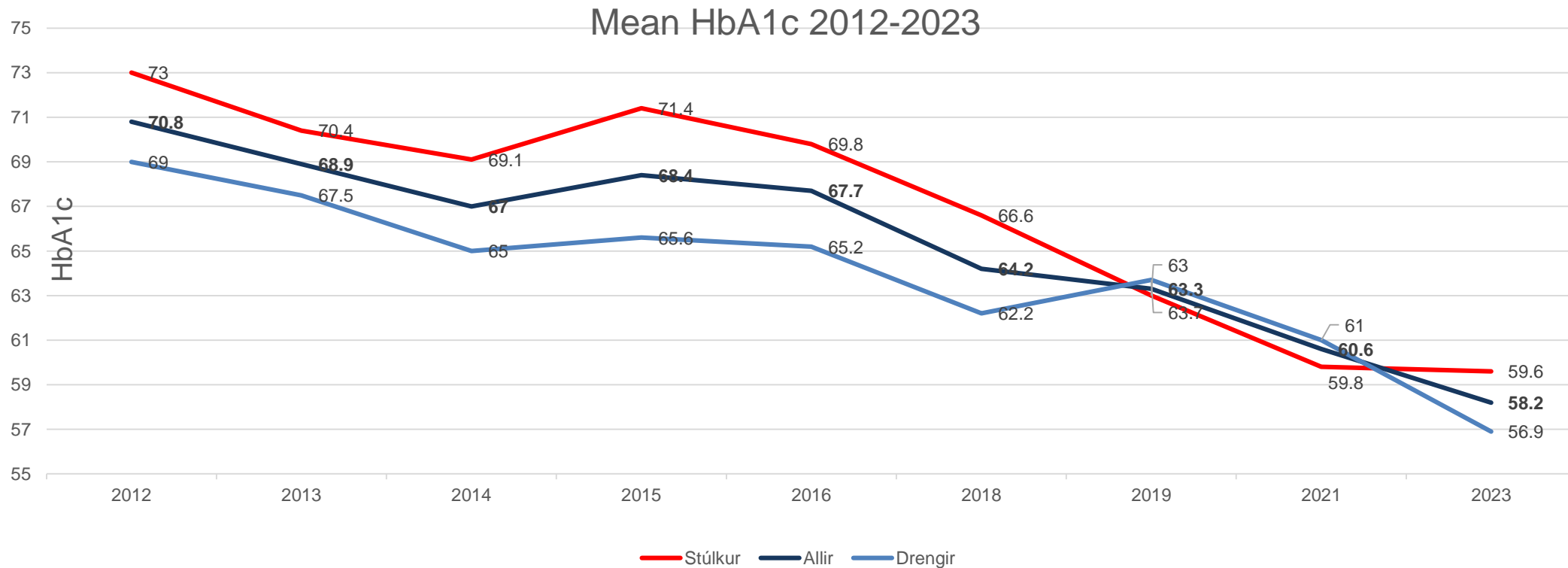
## SUCCESS IN BLOOD GLUCOSE MANAGEMENT IN ICELANDIC CHILDREN LAST DECADE

	2012	2023
Proportion of children with HbA1c > 70 mmol/mol	44%	10,3%
Proportion of children on insulinpumps	45%	97%
Mean HbA1c	70,8 mmol/mol	58,2 mmol/mol



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## ICELANDIC CHILDREN'S BLOOD GLUCOSE CONTROL HAS NEVER BEEN BETTER!





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## Conclusions

There were significant positive changes in the blood glucose management of Icelandic children last decade

The contribution of nursing, in multidisciplinary teamwork, to the improvement of blood glucose control in children is indisputable

Research has shown significant results of nurses' treatments in nursing individuals with diabetes (Dailah, 2024), but it would be interesting to examine the cost benefit

Nurses have an important role to play in outpatient clinics caring for chronically ill patients and their families