



INTERPRET-DIA

Intensive Tele-monitoring of Pediatric patients with Real Time – Continuous Glucose Monitoring use in Type 1 Diabetes



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Patient at home



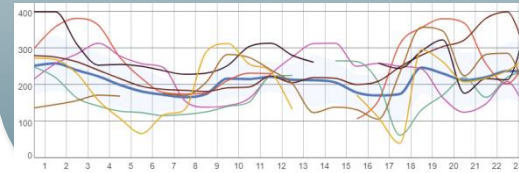
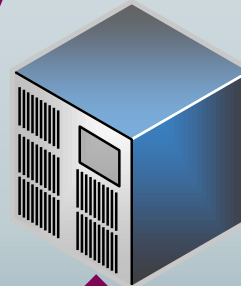
Secure, privacy-conserving tele-monitoring

Guardian Connect



Diabetes team in hospital

Patient Health record



Multi-disciplinary diabetes experts



Medical: 1st line, 2nd line, 3rd line

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Interpretation blood glucose data
every 2 weeks (\leftrightarrow every 3 months)

- *HbA1C*
- *Number hospitalisations*
- *QoL*
- *Number therapy adjustments*

Over 6 months time



Results: Patient inclusions

	Maand 1	Maand 2	Maand 3	Maand 4	Maand 5	Maand 6
Aantal patiënten in het project	45	51	51	48	47	47
Aantal nieuwe patiënten	45	15	2	1	0	0
Aantal patiënten in project die als “non-compliant” wordt beschouwd	5	7	7	7	8	8
Aantal patiënten zoals voorzien uit project gestapt	0	0	0	0	0	0
Aantal patiënten onvoorzien uit project gestapt	0	9	2	4	1	0

Results: Follow-up of patients

- 585 tele-consultations
 - Accessibility patients; double call patient + ado
 - No wifi connection (e.g. holidays): no data
- 352 therapy adjustments: 7,5 adjustments/ pt/6mnts

Results: metabolic control

	Before		Sig.	N		Before		Sig.	N
HbA1C (%) M3	8,3±0,6	8±0,7	0,024	25	HbA1C (%) M3	8,1±0,5	7,6±0,4	0,029	8
HbA1C (%) M6		8,1±1	0,176		HbA1C (%) M6		7,3±0,3	0,001	
AUC in range (%)	35±10	38±7	0,074	19	AUC in range (%)	38±13	44±5	0,062	8
AUC in hypo (%)	8±7	5±3	0,037	19	AUC in hypo (%)	6±6	4±3	0,348	8
AUC in hyper (%)	57±11	56±7	0,801	19	AUC in hyper (%)	57±11	52±6	0,070	8



Patients > 7,5%

Compliant patients > 7,5%

HbA1C improvement for patients above target HbA1C (7,5%).
For compliant patients, this is a decrease of avg. 0,8.
Improvement of time in hypo for all patients.

All patients

Patients HbA1C < 7,5%

	Before		Sig.	N		Before		Sig.	N
HbA1C (%)	7,7±1	7,8±1	0,441	44	HbA1C (%)	6,9±0,7	7,3±0,8	0,001	19
AUC in range (%)	41±15	42±11	0,575	32	AUC in range (%)	50±17	48±14	0,541	13
AUC in hypo (%)	8±6	5±3	0,005	32	AUC in hypo (%)	7±5	5±2	0,054	13
AUC in hyper (%)	51±16	52±12	0,480	32	AUC in hyper (%)	42±19	47±15	0,245	13

Results: Adverse events

	Project – 6 to – 12 mnts	Project – 6 mnts	In project
Serious hypo	4	9	1
Ceto-acidosis	0	1	0
Hospitalisations	4	9	3

Results: QoL (PDQOL/DQOLY)

	Start project (\pm SD)	End project (\pm SD)	Significance (p- value)
QOL parents	12.74 \pm 6.4	11.8 \pm 5.6	0.273
QOL adolescents	66 \pm 29	60 \pm 26	0.193

Results: satisfaction questionnaire

- Patients:

- 70%: tele-consultations were very useful
- 76%: feeling of better diabetes control
- 78%: feeling of improvement of self-control
- 82%: would opt for future tele-consultations
- 35%: agreed on replacement of standard consultation by tele-consultation

- Caregivers:

- Better patient contact
- Less time spent on 'non-medical' issues

Conclusion INTERPRET-DIA

- **Results: positive health economic outcome**
 - HbA1C improvement for patients above target (>7,5%)
 - For compliant patients, this is a decrease of avg. 0,8
 - Improvement of time in hypo for all patients
 - Less adverse events and hospitalisations
 - Increased feeling of self control in > 75% of participants
- **Feasibility:**
 - Fluent integration of CGM data in Patient Health Record (validated for Guardian Connect and Freestyle Libre)
 - Feasible for medical team – closer contact patients
 - Smaller adjustments possible because bi-weekly contact
 - Appreciated by patients
 - 2 Factor Authentication for remote access is possible
 - Validated privacy and security