How to successfully onboard patients with HCL:

The on-boarding journey,
the stumbling blocks, nuggets of wisdom and available resources

The story of three very different units ...

Nottingham University Hospitals NHS
NHS Trust

HCL
The Nottingham Approach

Remy Cresswell
Paediatric Diabetes Specialist Nurse

Nottingham Children's Hospital

We are here for you

What we're here for

Our HCL journey – How we got here

HCL selection – Informed decision

HCL Onboarding – Ongoing learning

HCL Results

Where We Started

Research

- 2017 – CLOuD - Newly diagnosed T1 patients, RCT of HCL vs MDI
  - Medtronic & Florence > DANA & CamAPS
- 2019 – DAN05 – Pump users – RCT of standard pump vs HCL
  - DANA & CamAPS
- 2021 – NHSE Closed Loop Project – 45 patients commenced on 3 HCL systems in one month, for the 12month pilot

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Nottingham Caseload

HCL in 2023:

- Total T1D = 381
- Total patients on HCL 208 (54.6%)
- HCL Systems:
  - Tandem Control IQ – 147 (71%)
  - DANA/Ypsomed CamAPS FX – 36 (17%)
  - Medtronic SmartGuard – 19 (9%)
  - DIY – 6 (3%)

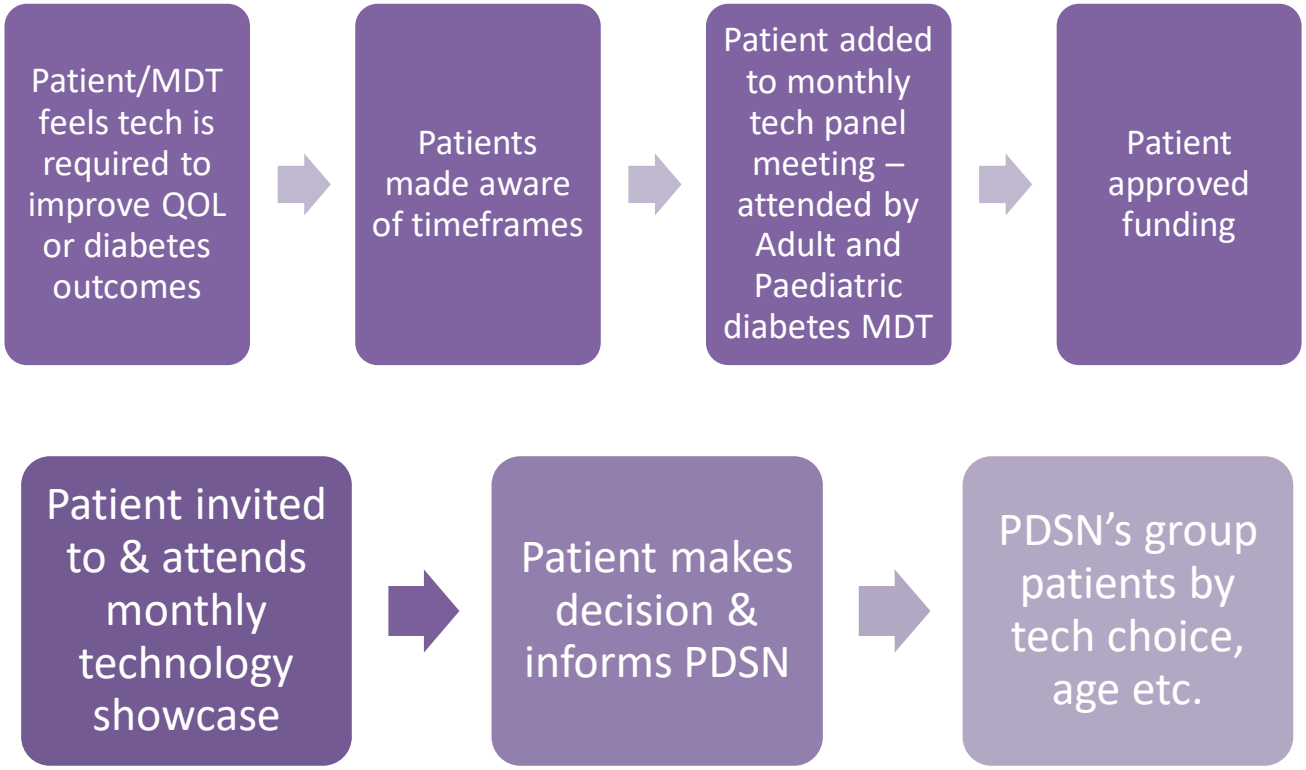
Streamlining

Our learning:

- Initially no clear process, once funding approved PDSN's had patients attend nurse led clinics to look at options and arranged pump starts
- The pandemic led to less cohesive working
- Patients weren't given clear timeframes to align expectations
- PDSN's felt the pressure to start tech ASAP and increasing patients requiring technology meant this wasn't sustainable

Our Process

A whole team approach



Informed Decisions

Why are you here?

- ❑ You/your child has been approved for
  - ❑ An insulin pump or
  - ❑ An insulin pump with continuous glucose monitoring
- ❑ We want to showcase the systems that are currently available at QMC and are suitable to meet your needs to help you make the right choice

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The right choice

We currently offer:

- ❑ 3 insulin pumps
- ❑ 2 continuous glucose monitors
- ❑ 3 hybrid closed loop systems

The Choice

HCL Systems offered:

System:	Control IQ	CamAPS FX	SmartGuard
Patient Age	6 years and over	1 years and over	7years to 80years
Patient Weight	Minimum 25kg	Minimum 10kg Maximum 300kg	NA
Patient Total Daily Insulin Dose (TDD)	Minimum 10units Maximum 100units	Minimum 5units Maximum 350units	Minimum 8units Maximum 250units
Pregnancy	No	Yes	No
Phone Required	No	Yes - Android	No

Technology for All

- One voice – all members of the MDT trained on HCL systems
  - All PDSN's trained to on-board patients
- Proactive with technology rather than reactive, suggesting technology earlier to ease diabetes management burden and prevent burnout
- Offering technology to all, rather than only the families that ask for it

Onboarding

- Group Vs Individual: best for the patient
  - Groups – considering: tech choice, age, personality
  - 1:1 - if needed due to learning difficulties, language barriers, hearing difficulties
- Groups of up to 5 patients with a minimum of two PDSN's
- Two sessions in the same week
  - 1st - Onboard and education
  - 2nd - Infusion set and insulin change with further education
  - Phone call between these sessions & to follow with data reviews

- Supported by manufacturer rep for the first few sessions to ensure PDSN's confident with tech

The numbers speak for themselves

Patients on HCL n=128; 12-month data available for 98 patients

Table: Comparison between HbA1c, TIR, TIHo and TIHi percentage before and after HCL - 2019 - 2022

	3-month prior starting	3-month after starting HCL	6 months after HCL	12 months after HCL
Mean HbA1c (mmol/mol) (SD)	57 (9.7)	52 (7.3)	51.4 (7.1)	51.4 (7.1)
Mean TIR%	56.4	66.3	65.3	67.2
TIHo %	3.6	2.8	2.9	3.1
TIHi %	39.6	30.09	30.8	29.2

Audit by Drs Kamaleldeen, Sachdev, Randell, Nottingham Diabetes Team

Progession

- QI Project to make further improvements on technology inequalities
- Above national averages for patients using flash and pumps, work to be done on rtCGM

Demographic	England and Wales % patients using rtCGM 2021/2022 NPDA data	Nottingham Children's Hospital % patients using rtCGM 2021/2022 NPDA data
Ethnic group		
Ethnic Minority	26%	24.4%
White	30.8%	36.3%
Socioeconomic Group		
Most deprived	23.9%	18.9%
Second most deprived	23.7%	33.9%
Third most deprived	29.8	38%
Second least deprived	32.6%	35.3%
Least deprived	33.7%	43.4%

Thank you

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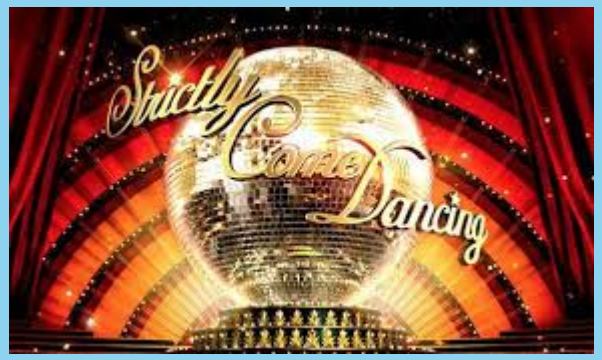

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As they say on Strictly

"It's all about the (AID) journey"

John Pemberton RD
Department of Endocrinology and Diabetes,
Birmingham Children's Hospital,
Birmingham, United Kingdom

In the next 10-15 minutes

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- 2022 NPDA – "How are we doing"
- ISPAD 2022 – HCL is a game changer
- QI project November 2022 onwards
- To discuss
  - Four step process
  - How we did it
  - What we have achieved "so far"
  - What you can learn/have from us

NPDA 2022- How are we doing?
270/290 on CGM – 93%
50/290 on HCL – 17%

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Demographic	England and Wales HbA1c (mmol/mol) 2021/2022 NPDA data	Birmingham Children's Hospital HbA1c (mmol/mol) 2021/2022 NPDA data	Difference in HbA1c (mmol/mol) between England and Wales and Birmingham Children's Hospital
Ethnic group			
Black	70.7	68.5	2.2
Mixed	66.4	63.8	2.6
Other	62.7	60.9	1.8
Asian	65	59.9	5.1
White	63.4	58.7	4.7
Socioeconomic Group			
Most deprived	67.7	63.1	4.6
Second most deprived	66.1	58.5	7.6
Third most deprived	63.3	56.1	7.2
Second least deprived	61.8	58.7	3.1
Least deprived	60.1	58.6	1.5

7.3

9.8

7.6

4.5

First two steps

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- **Step 1:** Making HCL **The Priority** – Nov 2022:
  - ISPAD 2022
  - Current onboarding of 4 per month:
    - **8 years until the need is met – UNACCEPTABLE**

- **Step 2:** Creating capacity – Nov-Dec 2022:
  - High HbA1c Clinics: Thrice to once a week
  - School training – Virtual Program
  - Make capacity to onboard 12 per month
    - **2 years to meet the need**

Step 3: Pathway development

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- **Step 3:** Pathway Development: Jan-Mar 2023:
  - Digital tools – Google Forms, Interactive PDF's
  - Virtual training expertise: CGM Academy & school training package
  - DTN and ATTD Best Practice Guides
  - Robust and independent
  - Consistency
  - Tools and guides – not reliant on memory!
  - "We don't need no reps!"

How we support choice of AID?

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- Age:
  - 7yrs or older = MiniMed 780G
  - 6yrs or older – T Slim X2 with Control-IQ
  - 2yrs or older = Omnipod 5
  - 1yr or older = CamAPS FX

- Mobile phone required?
  - Yes: CamAPS FX, Omnipod 5
  - No: Tandem X2 with Control IQ and MiniMed 780G

- CGM preference:
  - Dexcom G6: Tandem X2 with Control IQ, Omnipod 5, CamAPS FX
  - Libre 3: CamAPS FX
  - Guardian 4: MiniMed 780G

Support choice of AID?

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- Control over the algorithm:
  - Lots of control: Tandem X2 with Control IQ
  - Moderate control: Omnipod 5 & CamAPS FX
  - Little control: MiniMed 780G
- Tubing
  - No: Omnipod 5
- Type 1 Diabetes is a self-management condition, so provide pros and cons and pre-work objectively:
- **Google Form**

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DOI: 10.1111/dme.15078

DIABETIC Medicine

POSITION STATEMENT

UK's Association of British Clinical Diabetologist's Diabetes Technology Network (ABCD-DTN): Best practice guide for hybrid closed-loop therapy

Tomás P. Griffin[1,2,3,4] | Geraldine Gallen[5] | Sara Hartnell[6] | Thomas Crabtree[7,8] | Melissa Holloway[9] | Fraser W. Gibb[10] | Alistair Lumb[11,12] | Emma G. Wilmot[7,8] | Pratik Choudhary[1,2] | Sufyan Hussain[13,14]

Flipped learning – Google Form

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- What is HCL
- Managing lows
- Managing highs
- CGM management
- Infusion set management
- Current insulin doses
- Set up online accounts (Carelink & Glooko)
- Competency 8 out of 10
- Automatic emails on completion – 70% of caseload

Starting calculator

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Pump dose setting calculator					
Name	Joe Bloggs		**NHS number**		
DOB	20/11/980		**AGE**	#VALUE!	years
PUMP or MDI TDD		units/day			
Reduce MDI TDD			**Weight (kg)**		
PUMP TDD	0	units/day	Units per kg	#DIV/0!	
Current Basal		units/day			
Reduction of basal					
Total basal	0.0	units/day			

Basal rates	units/hour
00:00-07.00	**0.00**
07.00-10.00	**0.00**
10.00-15.00	**0.00**
15.00-19.00	**0.00**
19:00-00:00	**0.00**

Basal rate guidance	
Age	**Basal %**
<7 years	30%
7yrs -puberty	40%
Pubertal	
Active	40%
> 4 bolus/day	40%
< 4 bolus/day	50%

ISF 1 unit lowers glucose: **#DIV/0!** **mmol/L**

ICR Breakfast 1 unit will cover **#DIV/0!** **g carbohydrate**
ICR meals 1 unit will cover **#DIV/0!** **g carbohydrate**

Completed	11/08/2023

Countersigned	11/08/2023

References

Hanas R, Adolfsson P. *J Diabetes Sci Technol* . 2017;11(2):247-252.
Sherr et al 2022 ISPAD Guidlines pump therpay Pediatr Diabetes. 2022;1–26.
Phillip et al AID Concensus Statement Endocr Rev. 2023 Mar 4;44(2):254-280

Teaching guides
Survive and Thrive guides

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Omnipod 5

This is my booklet

Happy teaching

Weight in kg 30

T Slim X2 with Control IQ

This is my booklet

Happy teaching

Weight in kg 30

Name: Test Weight (kg): 40

Omnipod 5 - How to Survive

- **Important things:**
  - Carry charging cable, spare Pods, Insulin vial, insulin pens & needles, blood glucose & ketone meter, hypo treatment.
  - Videos and resources for Omnipod 5
- **Low Glucose levels:**
  - hypo guidance chart.
  - Wait 20 minutes before retreating
  - No 10g snack after treated

Glucose mmol/L	Arrow	Treatment Glucose (grams)	Choose only one: Dextrose	Lucozade
4.0 - 6.0	↓↓	12	4	133
	↓	9	3	100
	↘	6	2	67
Less than 4.0	↓↓	15	5	167
	↓	12	4	133
	↘	9	3	100
	→	6	2	67
	↗	3	1	33

Hypoglycaemia management

- **High Glucose Levels:**
  - Follow the high guidance chart
  - If the glucose level stays above 14.0mmol/l for 90 minutes, **even though ketones are less than 0.6 mmol/L,** change the Pod, then give a correction.
  - If ketones are 0.6mmol/L or above, **give correction dose by insulin pen, change the Pod, and Switch to manual mode for 4 hours**:
    - 10% of total daily dose if ketones are 0.6-1.5 mmol/L.
    - 20% of total daily dose if ketones are above 1.5 mmol/L.

Hyperglycaemia management

- **Infusion Site Management:**
  - Minimum fill of 85 units and maximum fill of 200 units. Fill enough to last for three days, if possible.
  - Wear the sensor and POD on the same side of the body
  - Check for the pink square after cannula insertion
  - Pod change every 2-3 days before a meal and rotate sites.
  - Insulin must be less than 28 days out of the fridge and in date
  - Remind yourself of best practice
- **CGM Management:**
  - Take your time and follow the how to set up video
  - If you feel different to the sensor glucose, check blood glucose and calibrate if more than 20% difference between sensor and blood glucose
  - Remind yourself of best practice

Inserting Dexcom

Omnipod 5 - How to Thrive

- **Ordering supplies:**
  - Order Pods upon opening the last box - Insulet/Omnipod - 0800 011 6132
    - If Pods fail early contact for replacement
    - If issues with the Controller
  - Dexcom replacement sensors:
    - If sensors do not last 10 days you must contact for a replacement
    - www.dexcom.com/UKIETechsupport
    - 0800 0315763
- **Food and insulin:**
  - Bolus 15 minutes before eating.
  - Three balanced meals with limited snacking, Mealtime Insulin Guide
  - 5-10 minutes activity (walking, playing, dancing) after eating.
  - For high fat meals (pizza, takeaway, fish and chips, etc)
    - Enter 100% of the carbs as a normal bolus, first time.
      - If go low in the first 3 hours, next time give 75% of carbs eaten, as normal bolus
  - If you forget to bolus before eating:
    - Less than 30 minutes after eating, then bolus for all carbs.
    - 30-60 minutes, then bolus for half the amount of carbs.
    - More than 60 minutes, give a correction for the current glucose but do not enter carbs

Mealtime insulin guide

- **Exercise:**
  - Recap on how to mange with this video.
  - Start Activity Feature before (90 mins before) and for the duration of exercise:
  - Meal before exercise:
    - If eating within 2 hours of exercise, enter only 75% of the carbohydrate to be eaten
    - Carbohydrate x 0.75 = amount to enter e.g. 40g x 0.75 = 30g
  - Carbs during: Glucose every 20-30 minutes following your chart (next page).
    - Do not have a large amount of carbs just before exercise as the high glucose level will make the SmartAdjust deliver extra insulin.
  - Request a Dietitian appointment if you exercise is hard to manage.
- **Maximising Time in Range (4.0-10.0 mmol/L)**
  - 10 minutes of fast walking or playing drops the glucose level by 2 mmol/L when above 10.0mmol/L between meals - watch GAME

Exercise guide

Clinic settings checker

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AID Clinic Calculator

I will only use this calculator after watching training videos (670G/780G, T-Slim, CamAPS, OP5). Yes

1. Total daily insulin dose from last 14 days? 50.0
2. Percentage of TDD to update basal rates? 45
3. APS system: CAMS APS FX
4. Weight in kg: 60.0
5. Sensitivity to insulin (u/kg): 0.83 Medium to low: ICR & ISF suggestions should be close
6. Name: Joe Bloggs

Settings that will change how the AID algorithm works

Personal Glucose Target mmol/L	5.0 = aggressive 5.5 = normal 6.0 = safe 4.4-11.0 = range
ICR suggested from Total Daily Dose 1u:grams	6.0 Breakfast 7.0 Rest of the day

Only consider if time in range is less the 60% or there are consistent lows after eating

Settings that need updating every clinic for manual mode and AID functionality

Basal rate units/hour	00:00 - 24:00	0.94
PUMP: ICR suggested from Total Daily Dose 1u:grams	Enter ICR's from APP into Dana pump (not needed for YpsoPump)	
PUMP: ISF suggested from Total Daily Dose 1u:mmol/L	2.6	
Weight	APP Settings	
Max basal rate	2.3	
Max bolus	25	
Daily maximum	150	
Low Reservoir	30	

Assessment steps:
1. Automode: >90%
2. Time below Range (<3.9 mmol/L): <4%
3: Time in Range (3.9-10.0 mmol/L): >70%
4. Survival advice (hypos, hypers, set changes)
5. Thriving advice (15 min pre-bolus, exercise)

Time in range 4.0 - 10.0mmol/L	HbA1c mmol/mol (%)	Diabetes effect on energy and mood	Diabetes Effect on future health
More than 70%	Less than 48 (6.5%)	☺	☺
60-70%	48 - 64 (6.5-8.0%)	😐	😐
Less than 60%	More than 64 (8.0%)	☹	☹

Fourth Step

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- Step 4: Delivery & Evaluation – April – Nov 2023
  - Safe to Spectacular
  - "What gets measured gets managed"
    - April 2021 - March 2023 = 75 onboarded – 4 per month
    - April - Nov 203 = 100 onboarded – 12 per month = 175/290 = 60%
    - By December 2024 – All those who want one 270/290 = 93%

First 147 on HCL at Birmingham Children's Hospital: 3-month data

Birmingham Women's and Children's NHS Foundation Trust

Dependent variable	N	Baseline mean or median (±SD or IQR)	3 months mean or median (±SD or IQR)	P value
ATTD: Time in glucose range metrics				
TBR2: < 3.0 mmol/L	147	0.2 (0.0-1.0)	0.0 (0.0-1.0)	**0.032**
TBR: < 3.9 mmol/L	147	2.0 (1.0-3.4)	1.0 (1.0-3.0)	0.160
TIR: 3.9-10.0 mmol/L	147	50.0 (38.0-60.0)	67.0 (57.0-74.0)	**<0.001**
TAR: > 10.0 mmol/L	147	48.0 (38.0-60.0)	31.0 (24.0-41.0)	**<0.001**
TAR2: > 13.9 mmol/L	147	19.0 (10.0-30.0)	10.0 (6.0-17.0)	**<0.001**
Co-efficient of Variation (%)	147	39.2 (±5.6)	37.2 (±5.8)	**<0.001**
Glycemia Risk Index (GRI) metrics				
GRI Hypoglycaemia component	147	1.6 (0.8-3.5)	1.6 (0.8-2.6)	0.068
GRI Hyperglycaemia component	147	41.5 (18.0-36.5)	25.0 (18,0-36.5)	**<0.001**
GRI	147	77.0 (43.0-66.0)	46.0 (34.0-66.0)	**<0.001**

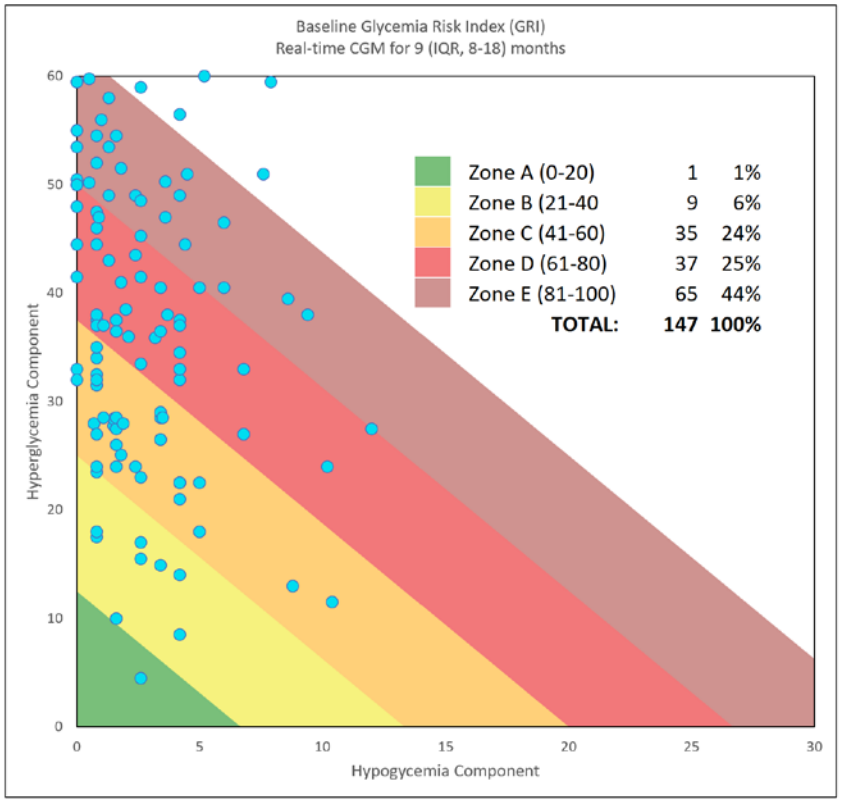
Table 2: Glucose centric outcomes from baseline to 3-month usage of AID

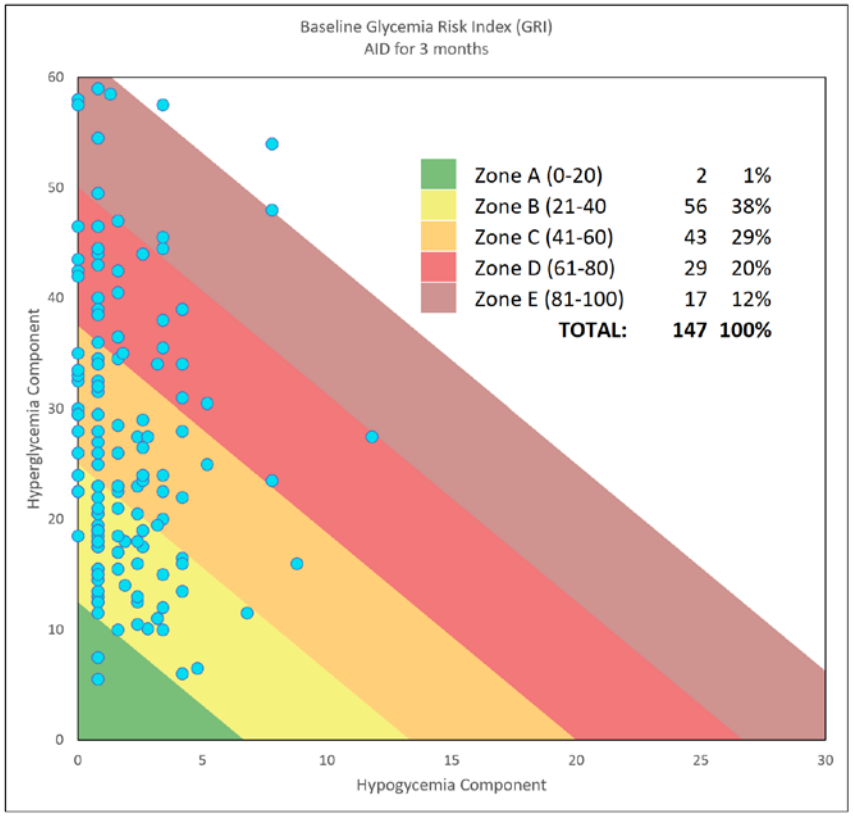
For variables with normally distributed data (mean & SD), p values were calculated using paired T-test. For variables where data was not normally distributed (median & IQR), p values are calculated using Wilcoxon paired test.

Unpublished data under peer review : available upon request

First 147 on HCL at Birmingham Children's Hospital: 3-month data

Birmingham Women's and Children's NHS Foundation Trust





Unpublished data under peer review : available upon request

GRI by SES and Ethnicity

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Categories and groups	N	3-month Glycemia Risk Index (GRI) Median (IQR)	P value
Social Economic Deprivation Quintiles			0.121
Most deprived	73	50.0 (36.0-73.5)	
Second most deprived	27	54.0 (57.0-75.0)	
Third most deprived	30	39.5 (31.5-49.0)	
Second least deprived	12	40.5 (35.0-67.0)	
Least deprived	5	34.0 (26.0-55.0)	
Social Economic Deprivation			0.068
Most deprived	73	50.0 (36.0-73.5)	
All except Most deprived (2nd & 3rd most deprived and 2nd & least deprived)	74	42.0 (33.0-63.0)	
Ethnic Group			0.287
White	66	44.0 (33.8-67.3)	
Asian	53	47.0 (33.0-62.0)	
Black	18	55.0 (45.8-77.8)	
Mixed	5	36.0 (29.5-62.5)	
Other	5	38.0 (28.5-69.5)	
White vs. Non-white Ethnic Groups			0.966
White	66	44.0 (33.8-67.3)	
Non-white (Asian, Black, Mixed, Other)	81	48.0 (33.5-64.0)	

Unpublished data under peer review : available upon request

GRI by Parental education, therapy type and AID System

Birmingham Women's and Children's NHS Foundation Trust

Categories and groups	N	3-month Glycemia Risk Index (GRI) Median (IQR)	P value
Automated Insulin Delivery (AID) System			0.441
MiniMed 780G (780G)	17	46.0 (37.0-58.5)	
CamAPS FX (CAMS)	9	63.0 (34.5-69.5)	
T-Slim x 2 (T-Slim)	72	47.0 (35.3-7.3)	
Omnipod 5 (OP5)	49	46.0 (30.5-58.5)	

Unpublished data under peer review : available upon request

James, 6 years old, Moving from injections to AID

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100% better!!!!

Worth more than any Time in range or GRI improvement!

Resources and how to guide

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https://theglucoseneverlies.com/the-nice-hybrid-close-loop-technology-appraisal-how-to-make-the-nhs-dream-a-reality/

Mersey and West Lancashire Teaching Hospitals NHS Trust

Hybrid Close Loop

Helen Day
Paediatric Diabetes Specialist Nurse

Southport and Ormskirk Paediatric Diabetes Team

The Compact Powerhouse!

Mersey and West Lancashire Teaching Hospitals NHS Trust

- **Our HCL journey – How we got here**
- **HCL selection – Informed decision**
- **HCL Onboarding – Ongoing learning**
- **HCL Results**

Recommendations:

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NHS Trust

Received: 23 September 2022 | Accepted: 24 September 2022
DOI: 10.1111/pedi.13421

ISPAD GUIDELINES

WILEY

ISPAD Clinical Practice Consensus Guidelines 2022: Diabetes technologies: Insulin delivery

Jennifer L. Sherr[1] | Melissa Schoelwer[2] | Tiago Jeronimo Dos Santos[3] | Leenatha Reddy[4] | Torben Biester[5] | Alfonso Galderisi[6] | Jacobus Cornelius van Dyk[7] | Marisa E. Hilliard[8] | Cari Berget[9] | Linda A. DiMeglio[10]

2 | EXECUTIVE SUMMARY AND RECOMMENDATIONS

2.1 | General principles for insulin delivery technology

- It is recommended that youth be offered the most advanced insulin delivery technology that is available, affordable, and appropriate for them. **B**

Diabetes (type 1 and type 2) in children and young people: diagnosis and management

NICE guideline [NG18] Published: 01 August 2015 Last updated: 11 May 2023

Insulin therapy

1.2.17 Discuss the choice of insulin regimen with the child or young person and their family:

- explain the advantages and disadvantages of the different options
- discuss their personal circumstances and preferences
- help them to make an informed decision between the options that are available to them. **[2015]**

How we got here

Mersey and West Lancashire Teaching Hospitals NHS Trust

- Pump service commenced in 2011
- Basal IQ introduced summer 2019
- First HCL patient Autumn 2020
- NHS England HCL trial Sept 2021 – 44 patients recruited:
  - Tandem T:slim CIQ
  - CamAps FX with Dana
  - Medtronic offered

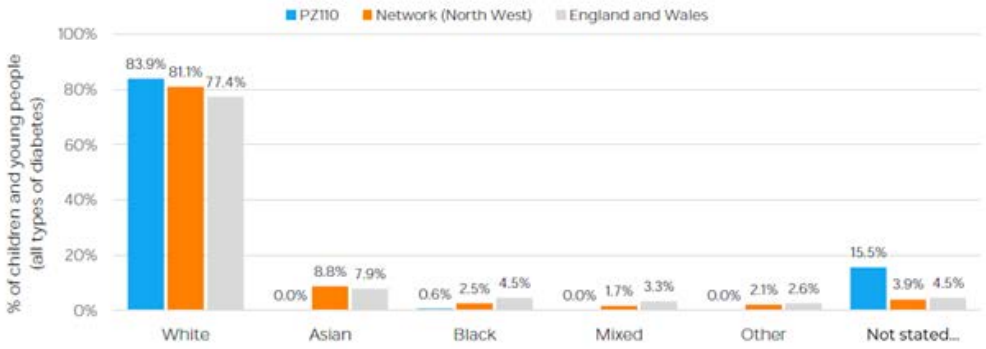
All patients remained on the system at the end of the trial. To date only one patient has returned to pens. Data collection for the study is still ongoing.

Service numbers

Mersey and West Lancashire Teaching Hospitals NHS Trust

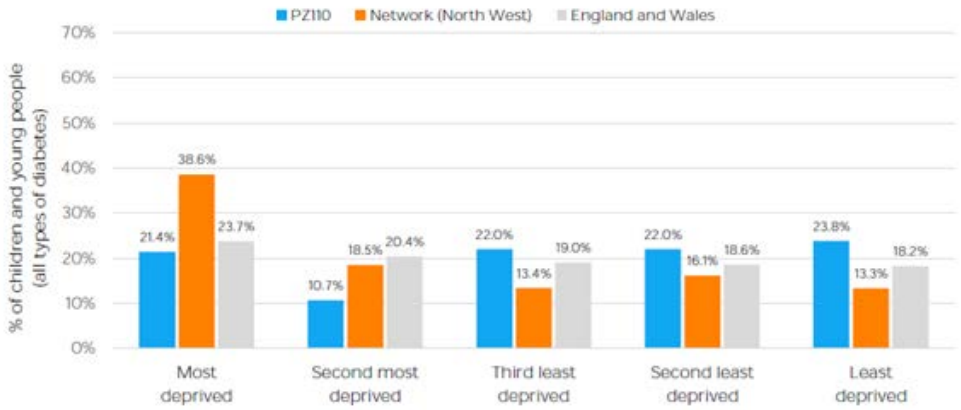
2.2. Ethnicity category by unit, region and overall

Figure 5: Percentage of children and young people within each ethnic category by unit, region and overall



2.3 Patient deprivation profile by unit, region and overall

Figure 6: Percentage of children and young people within each deprivation quintile by unit, region and overall



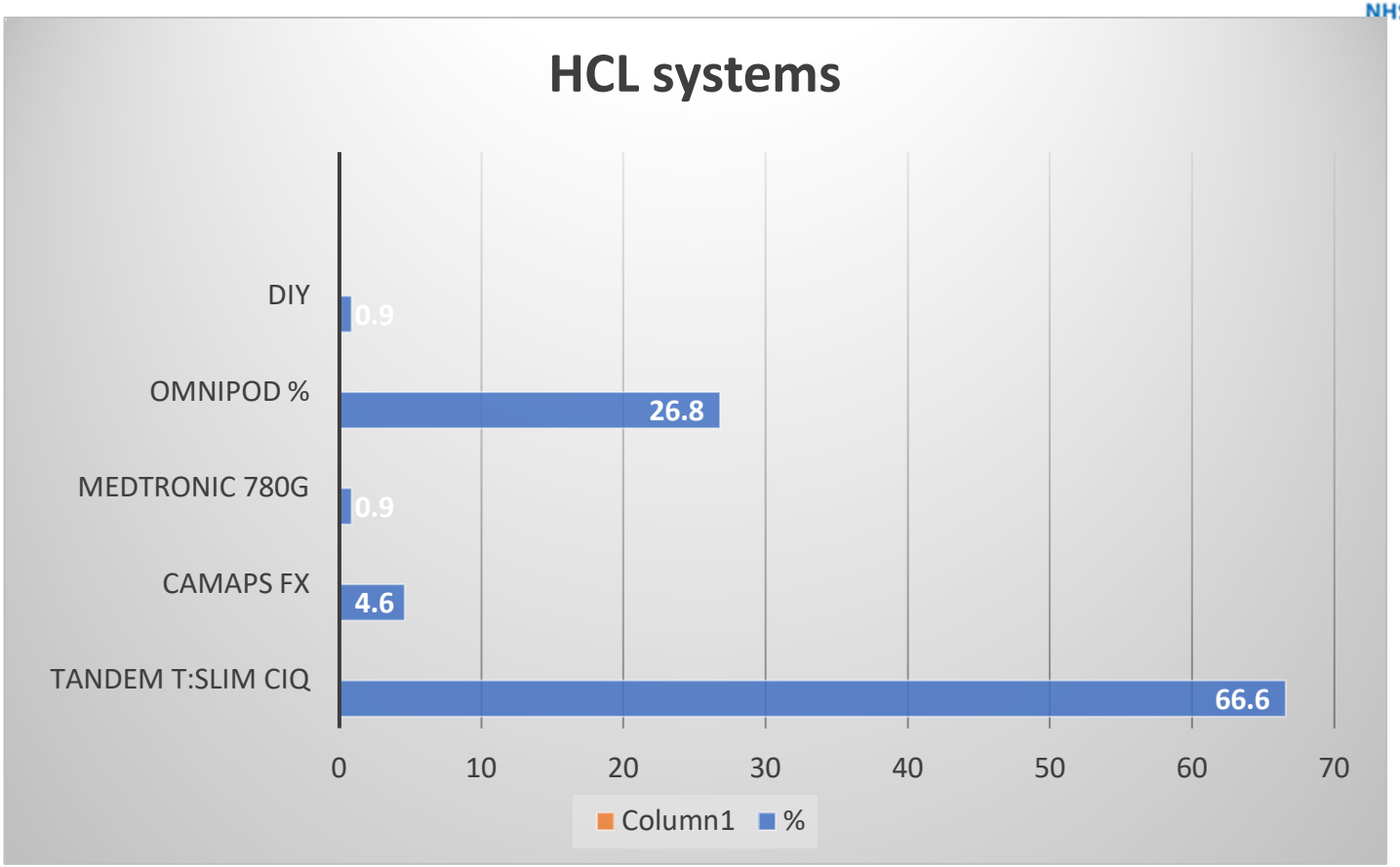
Service numbers

Mersey and West Lancashire Teaching Hospitals NHS Trust

Total case load	149	%
Type 1 diabetes	147	98.6%
Other	2	1.34%
CGM	144	96.6%
Finger pricking	4 + 1 T2D	3.34%
MDI	32 – 3 moving to Omnipod 5	22.1%
Total on pump therapy	116	77.85%
Stand alone pump therapy	8 – 3 moving over to Omipod 5	5.3%
Total on HCL	108	72.5%

Service numbers

NHS
Mersey and West Lancashire Teaching Hospitals NHS Trust



HCL Selection process

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How do patients choose HCL system?

- Pump therapy and HCL offered to all patients with T1D

(CFRD)

- Pump therapy and HCL is part of the newly diagnosed pathway.
- Discussed at first clinic appointment, CYP and parents encouraged to research what is out there!
- Home visit or additional attendance to hospital for further discussion and demonstration of dummy pumps –
- Consider patient limitations to support choice?
- Pump checklist commenced: (from this point to initial pump start is average 6-8 weeks)
  - Psychology review
  - Dietetic review
  - PDSN review

What we offer:

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Patients can choose from:

1yr – CamAPS and Ypsomed pump with Dexcom G6 or (from 4yrs Libre 3)

2yrs – Omnipod 5 with Dexcom G6

6yrs – T Slim X2 Control-IQ with Dexcom G6

7yrs - MiniMed 780G with Guardian 4

Those not wanting to loop continue to have access to a pump of their choice.

Don't forget: Consider if a mobile phone is required?

CamAPS FX require an Android/Dexcom compatible phone and Omnipod 5 require either Android or IOS Dexcom compatible phone.

Onboarding and ongoing learning.

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- Pre-pump education: virtual or F2F PowerPoint presentation:
  - What to expect at the pump start
  - Going from pens to pump
  - Re-look at chosen pump and how it works
  - Comparison of pens and pump therapy (basal/bolus)
  - Insulin - including returning to pens, changing to vials from GP
  - Sick day management
  - DKA
  - Hypo management
  - Travel
- Families to utilise any additional training session provided by the pump companies
- Virtual pump starts – switching from a stand-alone pump to HCL
- F2F – all new pump starts
- Max of 4 per pump start F2F and max of 6 virtual
- All training done by company reps but PDSN present
- For those with barriers such as language or lower level of learning needs - one to one sessions.

Follow up…… This is just the beginning!

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Competency Week 1 follow up	Date	Trainer- Signature	Parents/Young Person- Signature
Cannula Change			
Temporary Basal rate (TBR)			
Potential causes of high sugars/corrections			
Measuring blood ketones			
Management of hypoglycaemia			
Returning to insulin injection temporarily			

Competency Week 2-3 follow up	Date	Trainer- Signature	Parents/Young Person- Signature
Management of sick days on insulin pump			
Exercise and diabetes on insulin pump			
Travel with Insulin pump			
Bolus types			

Follow up begins the next day…….

- Pump checklist used as a guide to continue the education
- Initial daily contact to review data and make any necessary changes
- Progress to ad hoc follow-up between clinics
- Teaching reviewing of downloads
- Support from reps offered via teams or face to face
- Master classes with companies

HCL results

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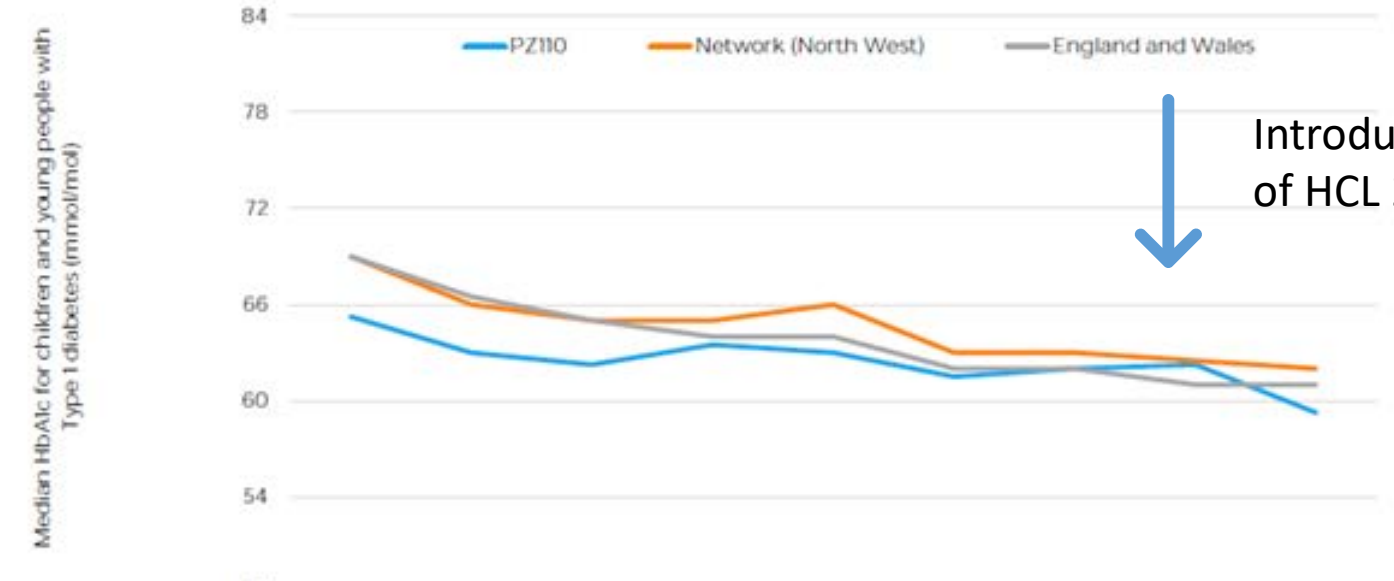
Figure 18: Median HbA1c for children and young people with Type 1 diabetes



	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
PZ110	65.3	63.0	62.3	63.5	63.0	61.5	62.0	62.3	59.3
Network (North West)	69.0	66.0	65.0	65.0	66.0	63.0	63.0	62.5	62.0
England and Wales	69.0	66.5	65.0	64.0	64.0	62.0	62.0	61.0	61.0

Lessons learned:

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Recommendations:

- Information is consistent throughout all team members
- Create good relationships with the company reps – they are your support
- Have a checklist to avoid missing any important steps in the process
- Create an achievable time frame – considering clinic rooms, rep availability, equipment delivery times, follow up sessions, prescribing of insulin
- Understand your procurement system

It doesn't stop here…….

- **Access continuous training for pump technology as it is ever changing and evolving.**

NICE guidelines 1.2.22 When children and young people start on an insulin pump, train them and their families and carers how to use it. A specialist team should provide ongoing support. [2004, amended 2015]

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Thank You

Big or small,
one size does not fit all

Questions?

Thoughts

There has never been a more exciting time to be delivering care for CYP with T1D!

Let’s Go!