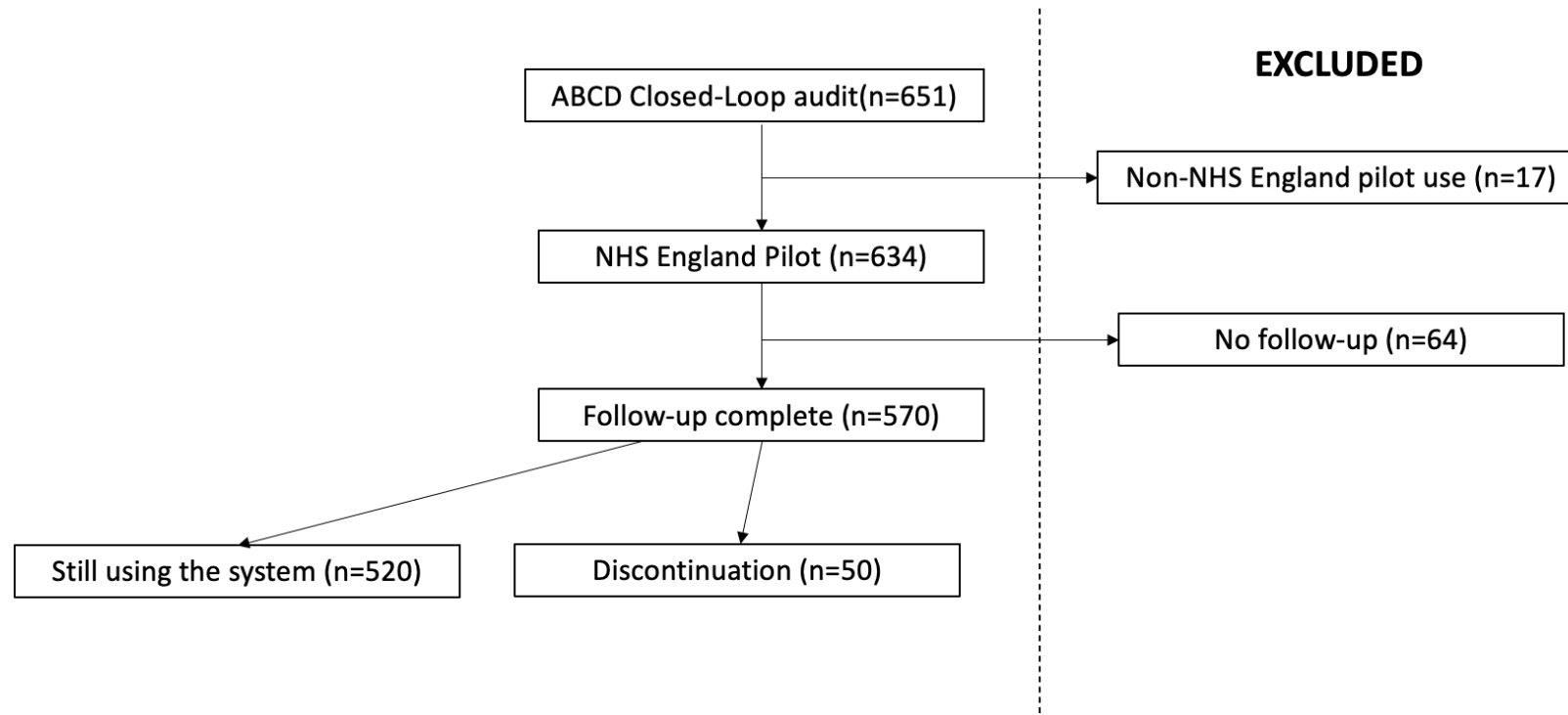


Supplement 1. Consort flow diagram for inclusion in this study



Supplement 2. Baseline characteristics including sensitivity analysis

Baseline Characteristics	All n=634	Follow-up Complete n=520	Discontinued/ Missing n=114	P-Value
Age, Years [†]	40 (29-50)	40 (29-51)	38 (26-47)	0.27
Diabetes Duration, Years [†]	21 (14-30)	21 (15-30)	21 (14-32)	0.95
Pump Duration, Year [†]	8 (5-11)	8 (5-11)	7 (4-10)	0.49
Weight, kg*	81±18	82±18	79±15	0.21
Body Mass Index, kg/m ² *	29±6	29±6	28±5	0.26
Median index of multiple deprivation decile [†]	6(3-8)	6 (3-8)	5 (3-8)	0.10
Most deprived quintile of deprivation [‡]	65 (10)	50 (10)	15 (13)	0.26
Gender[‡]				0.90
Female	425 (67)	348 (67)	77 (68)	
Male	209 (33)	172 (33)	37 (32)	
Ethnicity[‡]				0.70
White - British	537 (85)	433 (83)	104 (91)	
White - Other	14 (2)	11 (2)	3 (3)	
Mixed	10 (2)	10 (2)	0 (0)	
Asian	16 (3)	14 (3)	2 (2)	
Black	7 (1)	6 (1)	1 (1)	
Other	5 (1)	4 (1)	1 (1)	
Unknown	45 (7)	42 (8)	3 (3)	
HbA1c/CGM Metrics*				
Mean HbA1c, %	9.4±0.9	9.4±0.9	9.3±0.9	0.25
Mean HbA1c, mmol/mol	79±10	79±10	78±10	0.25
Total Daily Insulin Dose, units	50±30	51±31	46±18	0.14

Glucose Management Indicator, mmol/mol	72±11	72±11	74±13	0.13
Time above 14mmol/L, %	39±20	38±19	43±23	0.03
Time above range (10.1-13.9mmol/L), %	26±11	27±11	23±12	0.01
Time in range (3.9-10mmol/L), %	34±15	34±15	33±17	0.41
Time below range, Level 1 (3-3.8mmol/L), %	2±2	2±2	2±2	0.85
Time below range, Level 2 (<3mmol/L), %	0±1	0±1	0±1	0.74
Number of scans per day at baseline	7±6	7±6	8±7	0.28
Coefficient of variation	38±7	38±7	38±6	0.66
Insulin Pump/Closed-Loop System[‡]				0.001
Medtronic 780G	303 (48)	241 (46)	62 (54)	
Tandem Control IQ	217 (34)	193 (37)	24 (21)	
CAMAPS FX	31 (5)	27 (5)	4 (4)	
Medtrum	31 (5)	19 (4)	12 (11)	
Medtronic 670G	8 (1)	8 (2)	0 (0)	
Not recorded	44 (7)	32 (6)	12 (11)	

*Data reported as mean±standard deviation; P-Value comparing those with and without follow-up derived from unpaired T-Test

[†]Data report as median (Interquartile range); P-Value comparing those with and without follow-up derived from Mann Whitney U (Wilcoxon Rank Sum) tests

[‡]Data reported as number (percentage); P-Value comparing those with and without follow-up derived from Chi-2 testing

Supplement 3. Table showing baseline & follow-up time spent in glucose ranges where complete sensor data was available (n=380)

	Baseline	Follow-up
Time <54mg/dL, %	0.3	0.3
Time 54-69mg/dL %	1.8	1.2
Time 70-180mg/dL, %	34.2	61.7
Time 181-250mg/dL %	26.8	22.3
Time >250mg/dL, %	36.9	14.5

Supplement 4. Hospital admission, paramedic call-out and severe hypoglycemia event rates at baseline and follow-up

		Events per 10 person-years		
		Baseline	Follow-up	P-Value†
Admission	Hyperglycemia/Ketoacidosis	0.7	1.1	0.458
	Severe Hypoglycemia	0.2	0.1	0.483
	Other (Diabetes related)‡	0.1	0.2	0.209
	Other (Any)	1.0	0.7	0.08
Paramedic call-out*	Hyperglycemia/Ketoacidosis	0.2	0.0	0.005
	Severe Hypoglycemia	0.3	0.7	0.581
	Other (Diabetes related)‡	0.1	0.0	0.564
	Other (Any)	0.3	0.1	0.020
Severe hypoglycemia§		3.4	2.1	0.380

*Call-outs not resulting in hospital admission

†P-Value derived from Mann Whitney U (Wilcoxon Rank Sum) tests due to skew

‡For example, admission due to foot disease, gastroparesis, insulin overdose

§Using the standard definition of requiring third-party assistance to treat

Supplement 5. Number of participants at each center included in analysis (n=520)

Centre	Number of HCL users
Aintree University Hospital, Liverpool	6
Addenbrookes Hospital, Cambridge	23
Churchill Hospital, Oxford	22
Darlington Memorial Hospital	4
University Hospitals of Derby and Burton	52
Guy's and St Thomas', London	16
Harrogate District Hospital	17
Ipswich Hospital	9
King's College Hospital (Denmark Hill), London	26
Leicester General Hospital	44
Manchester Royal Infirmary	20
Musgrove Park Hospital	8
Sheffield Teaching Hospitals	27
Nottingham City Hospital	6
Princess Royal Hospital, Telford	6
Queen Alexandra Hospital, Portsmouth	21
Queen Elizabeth Hospital Birmingham	70
Queens Medical Centre, Nottingham	11
Royal Bournemouth Hospital	18
Royal Liverpool University Hospital	10
Royal Surrey County Hospital	7
Royal Sussex County Hospital	8
Southmead Hospital	12
St Helens Hospital	26
The Royal Victoria Infirmary, Newcastle	10
The Whittington Hospital	2
University of Hospital North Durham	12
Warrington Hospital	8
Watford General Hospital	3
Worthing Hospital	9
Yeovil District Hospital	7