

Supplementary material

Table S1: Mean difference in HbA1c between referral and Initial Assessment, pairwise combinations of pathways using a Bonferroni post-hoc correction

	Ingeus Inhouse	Ingeus Lloyds	Living Well Taking Control	ICS Health and Wellbeing	Reed In-house
Ingeus Lloyds	-2.05 <0.001				
Living Well Taking Control	-0.67 <0.001	1.38 <0.001			
ICS Health and Wellbeing	0.42 0.003	2.47 <0.001	1.09 <0.001		
Reed Momenta In-house	-0.68 <0.001	1.37 <0.001	-0.01 1.00	-1.10 0.00	
Reed Momenta Lloyds	-0.68 0.10	1.37 <0.001	-0.02 1.00	-1.10 <0.001	0.00 1.00

Table S2: Mean difference in HbA1c between referral and Initial Assessment, pairwise combinations of device using a Bonferroni post-hoc correction

	A1c Now +	Afinion
Afinion	0.19 <0.001	
DCA Vantage	1.26 <0.001	1.07 <0.001

Table S3: Difference between laboratory measured Hba1c at Referral and Point-of-Care re-measurement at Initial Assessment by device (N=61,623), mixed effects linear regression

		Coefficient	95% lower CI	95% upper CI	Standard error	P value
	Referral HbA1c Reading	-0.20	-0.22	-0.18	0.01	<0.001
Pathway	DCA Vantage					
	A1c Now + Afinion	-1.67	-2.00	-1.34	0.17	<0.001
Sex	Male	-0.87	-1.39	-0.34	0.27	<0.001
	Female	0.00	-0.06	0.07	0.03	0.92
	Indeterminate	0.83	-0.36	2.01	0.61	0.17
Age group	<40					
	40-64	0.34	0.16	0.52	0.09	<0.001
	65-74	0.38	0.19	0.56	0.10	<0.001
	75+	0.42	0.22	0.61	0.10	<0.001
Ethnicity	White					
	Asian	0.36	0.25	0.47	0.06	<0.001
	Black	0.93	0.79	1.06	0.07	<0.001
	Mixed	0.63	0.38	0.88	0.13	<0.001
	Other	0.16	-0.16	0.48	0.16	0.33
Deprivation	IMD 1 (most deprived)					
	IMD 2	-0.12	-0.22	-0.01	0.05	0.03
	IMD 3	-0.19	-0.29	-0.08	0.05	<0.001
	IMD 4	-0.28	-0.39	-0.17	0.05	<0.001
	IMD 5 (least deprived)	-0.33	-0.44	-0.22	0.06	<0.001
Number of days between referral and IA HbA1c	<28 days					
	28-55 days	-0.72	-1.06	-0.38	0.17	<0.001
	56-83 days	-0.98	-1.31	-0.65	0.17	<0.001
	84-111 days	-1.51	-1.83	-1.20	0.16	<0.001
	112-139 days	-1.31	-1.63	-0.99	0.16	<0.001
	140-167 days	-1.31	-1.64	-0.99	0.16	<0.001
	168-195 days	-1.18	-1.50	-0.85	0.17	<0.001
	196-223 days	-1.09	-1.42	-0.77	0.17	<0.001
	224-251 days	-1.13	-1.45	-0.80	0.17	<0.001
	252-279 days	-1.06	-1.39	-0.73	0.17	<0.001
	280-307 days	-1.00	-1.33	-0.66	0.17	<0.001
	308-335 days	-0.89	-1.23	-0.55	0.17	<0.001
	336-363 days	-0.68	-1.02	-0.33	0.17	<0.001
	363-739 days	-0.81	-1.13	-0.49	0.16	<0.001
>730 days	-0.83	-1.70	0.05	0.45	<0.001	
	Constant	7.66	6.66	8.67	0.51	0

Random-effects Parameters	Estimate	Std. Err.	95% lower	95% upper
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Local referral area: Identity				
var(_cons)	0.69	0.13	0.47	1.01
var(Residual)	15.69	0.09	15.52	15.86

LR test vs. linear model: $\chi^2(01) = 1684.27$ Prob>= χ^2 =<0.001

Table S4: Difference between laboratory measured HbA1c at Referral and Point-of-Care re-measurement at Initial Assessment by device for the sub set of participants with a weight recorded at referral (N=16,507), mixed effects linear regression

		Coefficient	95% lower CI	95% upper CI	Standard error	P value
	Change in weight	0.06	0.05	0.07	0.01	<0.001
	Referral HbA1C Reading	-0.23	-0.28	-0.19	0.02	<0.001
Device	A1c Now+					
	Afinion	0.86	0.23	1.49	0.32	0.01
	DCA Vantage	0.66	-0.88	2.19	0.78	0.4
Sex	Male					
	Female	0.02	-0.12	0.16	0.07	0.8
	Indeterminate	0.34	-1.48	2.15	0.93	0.72
Age group	<40					
	40-64	0.14	-0.26	0.54	0.20	0.5
	65-74	0.04	-0.38	0.46	0.21	0.85
	75+	0.12	-0.31	0.55	0.22	0.59
Ethnicity	White					
	Asian	0.73	0.47	0.98	0.13	<0.001
	Black	1.64	1.32	1.95	0.16	<0.001
	Mixed	1.03	0.29	1.76	0.38	0.01
	Other	0.46	-0.02	0.93	0.24	0.06
Deprivation	IMD 1 (most deprived)					
	IMD 2	-0.11	-0.33	0.11	0.11	0.32
	IMD 3	-0.29	-0.53	-0.06	0.12	0.01
	IMD 4	-0.50	-0.73	-0.27	0.12	<0.001
	IMD 5 (least deprived)	-0.50	-0.73	-0.26	0.12	<0.001
Number of days between referral and IA HbA1c	<28 days					
	28-55 days	-1.30	-1.94	-0.67	0.32	<0.001
	56-83 days	-1.15	-1.77	-0.53	0.32	<0.001
	84-111 days	-1.36	-1.96	-0.76	0.31	<0.001
	112-139 days	-0.90	-1.50	-0.30	0.31	0.003
	140-167 days	-1.05	-1.65	-0.44	0.31	0.001
	168-195 days	-0.90	-1.51	-0.29	0.31	0.004
	196-223 days	-0.87	-1.49	-0.25	0.31	0.006
	224-251 days	-0.91	-1.53	-0.29	0.32	0.004
	252-279 days	-0.93	-1.56	-0.31	0.32	0.003
	280-307 days	-0.75	-1.38	-0.11	0.32	0.021
	308-335 days	-0.84	-1.49	-0.20	0.33	0.010
	336-363 days	-0.77	-1.42	-0.12	0.33	0.020
	363-739 days	-0.60	-1.21	0.01	0.31	0.053
>730 days	0.91	-1.17	3.00	1.06	0.390	

Number of days between referral and IA weight	<28 days					
	28-55 days	-0.20	-0.43	0.02	0.11	0.076
	56-83 days	0.11	-0.17	0.39	0.14	0.427
	84-111 days	-0.09	-0.39	0.21	0.15	0.570
	112-139 days	-0.15	-0.49	0.19	0.17	0.398
	140-167 days	-0.35	-0.73	0.04	0.20	0.079
	168-195 days	-0.37	-0.81	0.07	0.23	0.101
	196-223 days	-0.44	-0.89	0.01	0.23	0.054
	224-251 days	-0.11	-0.62	0.40	0.26	0.684
	252-279 days	-0.43	-0.97	0.12	0.28	0.124
	280-307 days	0.09	-0.50	0.67	0.30	0.772
	308-335 days	-0.37	-0.99	0.25	0.32	0.245
	336-363 days	-0.38	-1.11	0.36	0.37	0.313
	363-739 days	0.11	-0.26	0.49	0.19	0.558
	>730 days	-0.33	-0.74	0.08	0.21	0.119
Constant	7.96	5.79	10.13	1.11	0.000	

Random-effects Parameters	Estimate	Std. Err.	95% lower	95% upper
Local referral area: Identity				
var(_cons)	0.37	0.14	0.18	0.78
var(Residual)	20.5	0.23	20.1	21.0

LR test vs. linear model: $\chi^2(01) = 201.47$ Prob>= χ^2 =<0.001

Table S5: Difference in HbA1c between laboratory measured HbA1c at Referral and Point-of-care re-measurement at Initial Assessment by pathway using multiple imputation data (N=73,703), mixed effects linear regression

		Coefficient	95% CI lower	95% CI upper	P value
Referral HbA1c Reading		-0.19	-0.21	-0.17	<0.001
Pathway	ICS Health and Wellbeing (DCA Vantage)				
	Ingeus Inhouse (DCA Vantage)	-0.24	-0.79	0.30	0.38
	Ingeus Lloyds (A1c Now+)	-2.54	-3.08	-2.01	<0.001
	Living Well Taking Control (Afinion)	-0.88	-1.39	-0.37	<0.001
	Reed Inhouse (A1c Now+)	-1.06	-1.64	-0.49	<0.001
	Reed Lloyds (A1c Now+)	-1.99	-2.72	-1.26	<0.001
Age group	<40				
	40-64	0.38	0.21	0.55	<0.001
	65-74	0.40	0.23	0.58	<0.001
	75+	0.46	0.28	0.64	<0.001
Sex	Male				
	Female	0.00	-0.07	0.06	0.87
Ethnicity	White				
	Asian	0.44	0.31	0.57	<0.001
	Black	1.04	0.88	1.20	<0.001
	Mixed	0.75	0.46	1.05	<0.001
	Other	0.16	-0.22	0.54	0.41
Deprivation	IMD 1 (most deprived)				
	IMD 2	-0.11	-0.21	-0.01	0.03
	IMD 3	-0.19	-0.29	-0.09	<0.001
	IMD 4	-0.28	-0.38	-0.17	<0.001
	IMD 5 (least deprived)	-0.33	-0.44	-0.23	<0.001
Number of days between referral and IA HbA1c	<28 days				
	28-55 days	-0.61	-0.93	-0.30	<0.001
	56-83 days	-0.87	-1.18	-0.57	<0.001
	84-111 days	-1.37	-1.67	-1.08	<0.001
	112-139 days	-1.24	-1.53	-0.94	<0.001
	140-167 days	-1.13	-1.43	-0.83	<0.001
	168-195 days	-1.07	-1.37	-0.77	<0.001
	196-223 days	-0.93	-1.23	-0.62	<0.001
	224-251 days	-0.95	-1.25	-0.64	<0.001
	252-279 days	-0.89	-1.20	-0.58	<0.001
	280-307 days	-0.82	-1.13	-0.51	<0.001
	308-335 days	-0.74	-1.06	-0.43	<0.001
	336-363 days	-0.59	-0.91	-0.27	<0.001
	363-739 days	-0.72	-1.02	-0.42	<0.001
	>730 days	-0.74	-1.59	0.12	0.09
constant	7.35	6.38	8.32	<0.001	

Random-effects Parameters	Estimate	Std. Err.	95% lower	95% upper
Local referral area: Identity				
sd(_cons)	0.76	0.07	0.63	0.91
sd(Residual)	4.1	0.01	4.13	4.17

Table S6: Difference in Hba1c between laboratory measured HbA1c at Referral and Point-of-care re-measurement at Initial Assessment by device using multiple imputation data (N=73,703), mixed effects linear regression

		Coefficient	95% CI lower	95% CI upper	P value
	Referral HbA1c Reading	-0.19	-0.21	-0.17	<0.001
Pathway	DCA Vantage				
	A1c Now + Afinion	-2.13	-2.41	-1.86	<0.001
Sex	Male	-0.98	-1.52	-0.44	<0.001
	Female	0.00	-0.06	0.06	0.89
Age group	<40				
	40-64	0.38	0.21	0.55	<0.001
	65-74	0.40	0.23	0.58	<0.001
	75+	0.46	0.28	0.65	<0.001
Ethnicity	White				
	Asian	0.44	0.31	0.57	<0.001
	Black	1.03	0.87	1.19	<0.001
	Mixed	0.75	0.46	1.04	<0.001
	Other	0.17	-0.22	0.55	0.40
Deprivation	IMD 1 (most deprived)				
	IMD 2	-0.11	-0.21	-0.02	0.02
	IMD 3	-0.19	-0.29	-0.08	<0.001
	IMD 4	-0.28	-0.38	-0.17	<0.001
	IMD 5 (least deprived)	-0.33	-0.44	-0.22	<0.001
Number of days between referral and IA HbA1c	<28 days				
	28-55 days	-0.61	-0.93	-0.30	<0.001
	56-83 days	-0.88	-1.18	-0.57	<0.001
	84-111 days	-1.38	-1.67	-1.08	<0.001
	112-139 days	-1.24	-1.54	-0.94	<0.001
	140-167 days	-1.14	-1.44	-0.84	<0.001
	168-195 days	-1.08	-1.38	-0.78	<0.001
	196-223 days	-0.93	-1.24	-0.63	<0.001
	224-251 days	-0.95	-1.26	-0.65	<0.001
	252-279 days	-0.90	-1.21	-0.59	<0.001
	280-307 days	-0.83	-1.14	-0.51	<0.001
	308-335 days	-0.75	-1.06	-0.43	<0.001
	336-363 days	-0.59	-0.91	-0.27	<0.001
	363-739 days	-0.72	-1.02	-0.42	<0.001
	>730 days	-0.72	-1.58	0.13	0.10
	Constant	7.46	6.50	8.42	<0.001

Random-effects Parameters	Estimate	Std. Err.	[95% Conf.	Interval]
Local referral area: Identity				
sd(_cons)	0.86	0.08	0.71	1.04
sd(Residual)	4.15	0.01	4.13	4.17

Table S7: Difference between laboratory measured HbA1c at Referral and Point-of-Care re-measurement at Initial Assessment by device using multiple imputation for the sub set of participants with a weight recorded at referral (N=20,576), mixed effects linear regression

		Coefficient	95% CI lower	95% CI upper	P value
	Change in weight	0.06	0.05	0.07	<0.001
	Referral HbA1C Reading	-0.24	-0.28	-0.20	<0.001
Device	A1c Now+				
	Afinion	0.92	0.30	1.53	<0.001
	DCA Vantage	0.59	-0.91	2.09	0.44
Sex	Male				
	Female	-0.03	-0.16	0.10	0.64
Age group	<40				
	40-64	0.13	-0.24	0.50	0.49
	65-74	0.01	-0.37	0.40	0.95
	75+	0.08	-0.32	0.47	0.71
Ethnicity	White				
	Asian	0.71	0.44	0.98	<0.001
	Black	1.53	1.22	1.85	<0.001
	Mixed	1.02	0.24	1.80	0.01
	Other	0.43	-0.03	0.90	0.07
Deprivation	IMD 1 (most deprived)				
	IMD 2	-0.09	-0.29	0.11	0.39
	IMD 3	-0.28	-0.49	-0.06	0.01
	IMD 4	-0.44	-0.65	-0.23	<0.001
	IMD 5 (least deprived)	-0.41	-0.62	-0.19	<0.001
Number of days between referral and IA HbA1c	<28 days				
	28-55 days	-0.91	-1.48	-0.34	<0.001
	56-83 days	-0.86	-1.42	-0.30	<0.001
	84-111 days	-1.06	-1.60	-0.52	<0.001
	112-139 days	-0.73	-1.27	-0.19	0.01
	140-167 days	-0.82	-1.37	-0.27	<0.001
	168-195 days	-0.62	-1.17	-0.07	0.03
	196-223 days	-0.62	-1.17	-0.06	0.03
	224-251 days	-0.68	-1.24	-0.12	0.02
	252-279 days	-0.58	-1.14	-0.01	0.05
	280-307 days	-0.43	-1.00	0.15	0.15
	308-335 days	-0.55	-1.13	0.03	0.07
	336-363 days	-0.52	-1.11	0.07	0.08
	363-739 days	-0.42	-0.97	0.13	0.14
>730 days	0.75	-1.22	2.72	0.45	
Number of days between	<28 days				
	28-55 days	-0.24	-0.44	-0.04	0.02
	56-83 days	-0.03	-0.29	0.22	0.79

referral and IA weight	84-111 days	-0.26	-0.53	0.01	0.06
	112-139 days	-0.31	-0.62	0.00	0.05
	140-167 days	-0.26	-0.61	0.08	0.13
	168-195 days	-0.69	-1.08	-0.29	0.00
	196-223 days	-0.61	-1.02	-0.21	0.00
	224-251 days	-0.20	-0.66	0.26	0.40
	252-279 days	-0.65	-1.15	-0.15	0.01
	280-307 days	-0.12	-0.66	0.42	0.65
	308-335 days	-0.80	-1.38	-0.23	0.01
	336-363 days	-0.79	-1.47	-0.11	0.02
	363-739 days	0.01	-0.33	0.35	0.95
	>730 days	-0.41	-0.80	-0.03	0.04
	Constant	8.04	6.07	10.02	<0.001

Random-effects Parameters	Estimate	Std. Err.	95% CI lower	95% CI upper
Local referral area: Identity				
sd(_cons)	0.61	0.11	0.42	0.87
sd(Residual)	4.61	0.02	4.57	4.66

Table S8: Attendance of at least one Intervention Session in the NHS Diabetes Prevention Programme after Initial Assessment using multiple imputation (N=45,507), mixed effects logistic regression

		Odds ratio	95% lower CI	95% upper CI	P value
Pathway**	ICS Health and Wellbeing (DCA Vantage)				
	Living Well Taking Control (Afinion)	2.15	0.99	4.67	0.054
	Reed Inhouse (A1c Now+)	1.54	0.67	3.53	0.311
	Reed Lloyds (A1c Now+)	1.21	0.51	2.87	0.66
Sex	Male				
	Female	1.11	1.06	1.15	<0.001
Age	<40				
	40-64	1.62	1.45	1.80	<0.001
	65-74	2.37	2.11	2.66	<0.001
	75+	1.87	1.66	2.11	<0.001
Ethnicity	White				
	Asian	1.05	0.98	1.13	0.188
	black	1.20	1.10	1.31	<0.001
	mixed	1.10	0.92	1.30	0.296
	other	1.09	0.88	1.35	0.447
Deprivation	IMD 1 (most deprived)				
	IMD 2	1.11	1.04	1.18	0.001
	IMD 3	1.28	1.20	1.37	<0.001
	IMD 4	1.30	1.21	1.39	<0.001
	IMD 5 (least deprived)	1.44	1.34	1.54	<0.001
BMI	Underweight/healthy				
	Overweight	1.13	1.06	1.20	<0.001
	Obese	1.22	1.15	1.30	<0.001
HbA1c measurement at IA	NDH (≥ 42 to < 48 mmol/mol)				
	Normoglycaemic (<42 mmol/mol)	0.71	0.68	0.74	<0.001
	Diabetes (>47 mmol/mol)*	0.35	0.32	0.38	<0.001

*Participants with a HbA1c > 51 mmol/mol are taken off the Programme and put on to Type 2 diabetes treatment pathways **For Ingeus, the Initial Assessment is spread across the first intervention session and not comparable to other providers, therefore was not included in the regression analysis