SUPPLEMENTARY MATERIALS

Potential cost savings in the United States from a reduction in sensor-detected severe hypoglycemia among users of the InPen smart insulin pen system

Albert Chien, MA, MPH; Sneha Thanasekaran, MS; Angela Gaetano, MS; Glen Im, MS; Kael Wherry, PhD; Janice MacLeod, MA, RD, CDCES, FADCES; Robert A Vigersky, MD

Supplementary Table 1. Description of Sensor-detected Severe Hypoglycemic Events

Metrics	Pre-SIP (N = 1,681)	Post-SIP (N = 1,681)
Maximum number of sensor-detected severe hypoglycemic events in a day	6	6
Maximum number of sensor-detected severe hypoglycemic events per user	36	28
Average number of sensor-detected severe hypoglycemic events per day	0.10 ± 0.38	0.08 ± 0.34
Average number of sensor-detected severe hypoglycemic events per user	1.34 ± 3.00	1.16 ± 2.54

Supplementary Table 2. Distribution of Sensor-detected Severe Hypoglycemic Events per Day

Count of sensor-detected severe hypoglycemic events per day	Pre-SIP (N = 1,681)	Post-SIP (N = 1,681)
0	21,785	21,968
1	1,384	1,259
2	279	241
3	50	53
4	25	10
5	8	2
6	3	1

Supplementary Table 3. Pre-SIP to Post-SIP Classification of the LBGI-derived Risk of Severe Hypoglycemia

SH risk categories*:	Count (N = 1,681)
High to High	4
High to Moderate	4
Low to Low	1,558
Low to Moderate	38
Moderate to High	2
Moderate to Low	38
Moderate to Moderate	38

*Low-risk (LBGI <2.5), moderate-risk (LBGI between 2.5 and 5), high-risk (LBGI >5) from Pre-SIP to Post-SIP period.

Supplementary Table 4. Cost Calculation Inputs and Results

Parameter	Pre-SIP (N = 1,681)		Post-SIP (N = 1,681)		Difference
	Calculation	Result	Calculation	Result	
Number of severe hypoglycemic events per week*	(2,250 x 25%)/2	281	(1956 x 25%)/2	245	-13%
Expected number of severe hypoglycemia-related hospitalization per week	281 x 6.7%	19	245 x 6.7%	16	-3
Expected number of severe hypoglycemia-related emergency room visit per week	281 x 14.5%	41	245 x 14.5%	36	-5
Expected number of severe hypoglycemia-related ambulance transportation per week	281 x 29.3%	82	245 x 29.3%	72	-10
Proportion of users with a severe hypoglycemia event	661/1,681	39.3%	626/1,681	37.2%	-2.1%
Hospitalization cost per month for severe hypoglycemic events	19 x (52/12) x $16,160 x 39.3%	$518,128	16 x (52/12) x $16,160 x 39.3%	$451,749	-$66,379
Emergency room visit cost per month for severe hypoglycemic events	41 x (52/12) x $2,100 x 39.3%	$138,847	36 x (52/12) x $2,100 x 39.3%	$121,059	-$17,788
Ambulance cost per month for severe hypoglycemic events	82 x (52/12) x $821 x 39.3%	$115,115	72 x (52/12) x $821 x 39.3%	$100,367	-$14,748
Total intervention cost per month	$518,128 + $138,847 + $115,115	$772,090	$451,749 + $121,059 + $100,367	$673,174	-$98,915
Cost per SIP user per month	$772,090/1,681	$459	$673,174/1,681	$400	-$59

*Assuming 25% of sensor detected severe hypoglycemic events result in a clinical event.