

Supporting Diabetes Self-Care Through a Wireless Program

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Aim

To provide a communication system for people with diabetes to support self-management and care, enhance compliance, and achieve better control of glycemic levels.

Method

- Received approval from CVH Ethics Review Board
- 25 patients enrolled in pilot project, and participated 3 or more months
- Ages ranged from 18 years to 75 years
- A1C done pre and post pilot project
- INET program downloaded to patient's cell phone
- Patient asked to enter glucose reading in cell phone each time they did their reading
- Satisfaction questionnaire done 3 months post pilot project

Initial Set-up

1. Your ID # is This is the ID your physician provided you. Please keep this confidential between you and your physician.
2. Make sure your cell phone browser is working and connected to the Internet. To minimize the carrier cost you may need to be on a data plan. Here is a guideline based on 6KB data or 2 pages per reading.

Reading/Month	Carrier Data Plan Guideline
Less than 35 readings per month i.e. non-insulin dependent	For 70 pages/month or 210 KB/month the data plan costs range between \$5 to \$7 per month
Less than 120 readings per month i.e. insulin dependent	For 240 pages/month or 720 KB/month the data plan costs range between \$7 to \$15 per

3. Set-up a bookmark with a title "Glucose Entry" using the link: www.glycemicare.com/login.aspx. If you are having problems visit your local cellphone centre to set-up the bookmark for you. If they are having technical problems please have them contact INET at 905-889-2704.

4. Enter your 6 digit ID number and click log-in, as shown in screen 1. After your first log-in, the system remembers the ID and will skip the log-in screen in the future. The data entry screen will be shown after you click on the bookmark a second time, see screen 2.

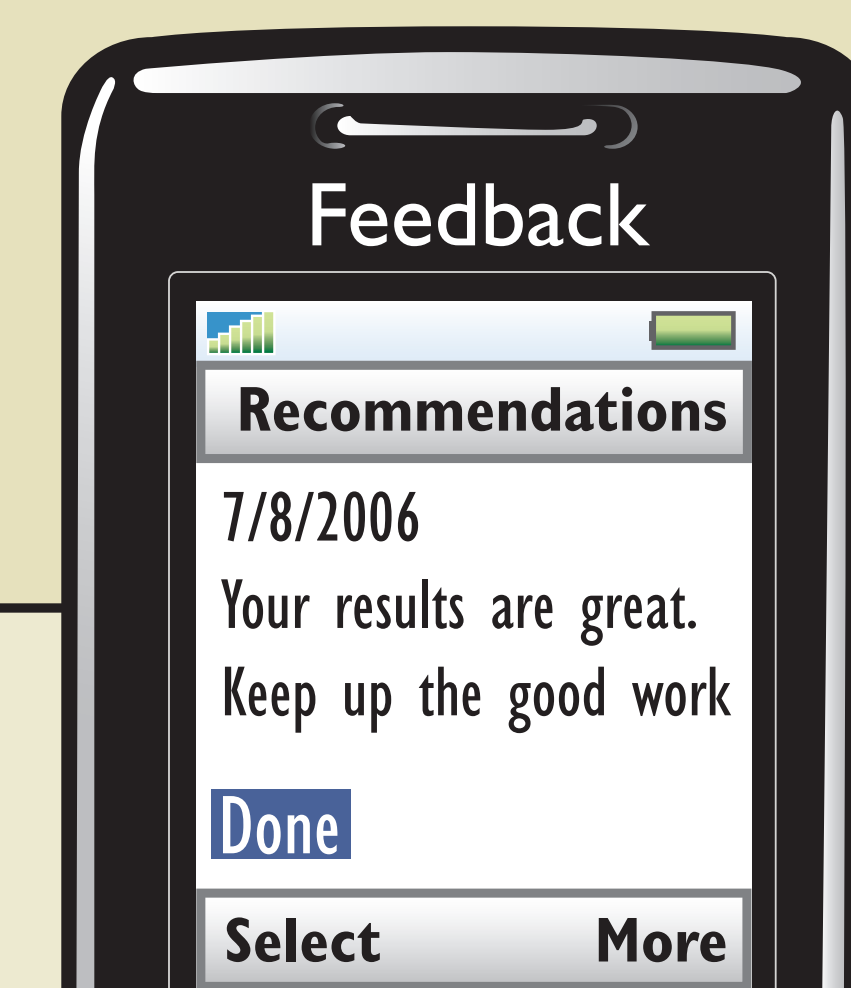
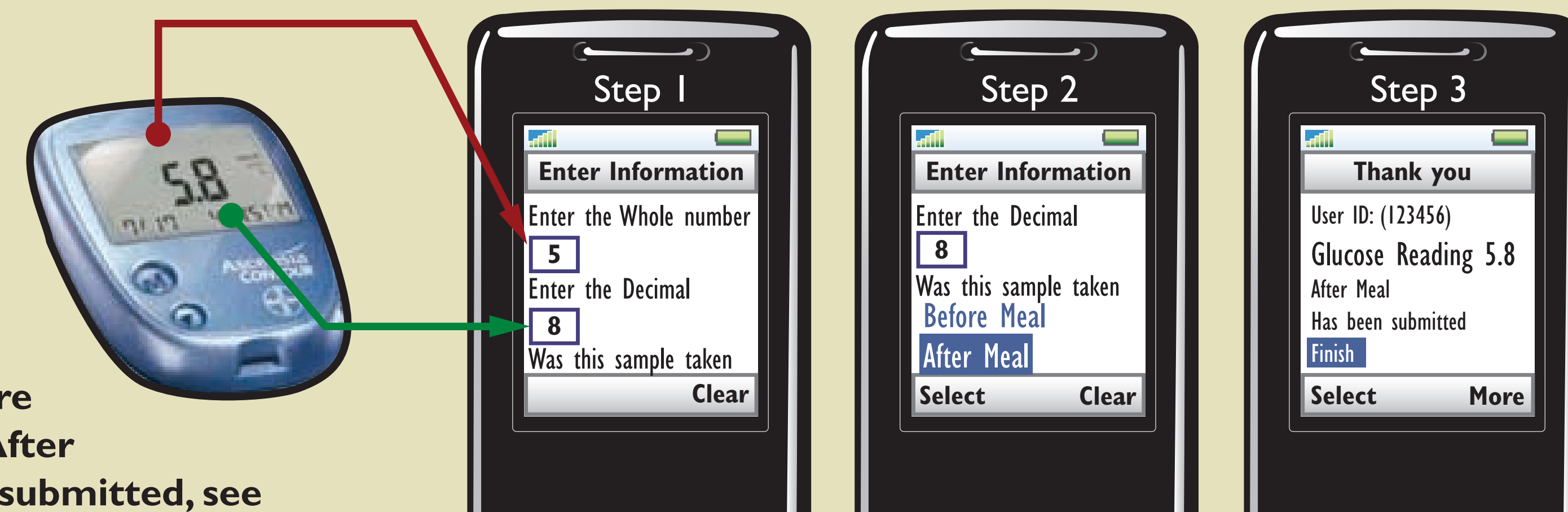
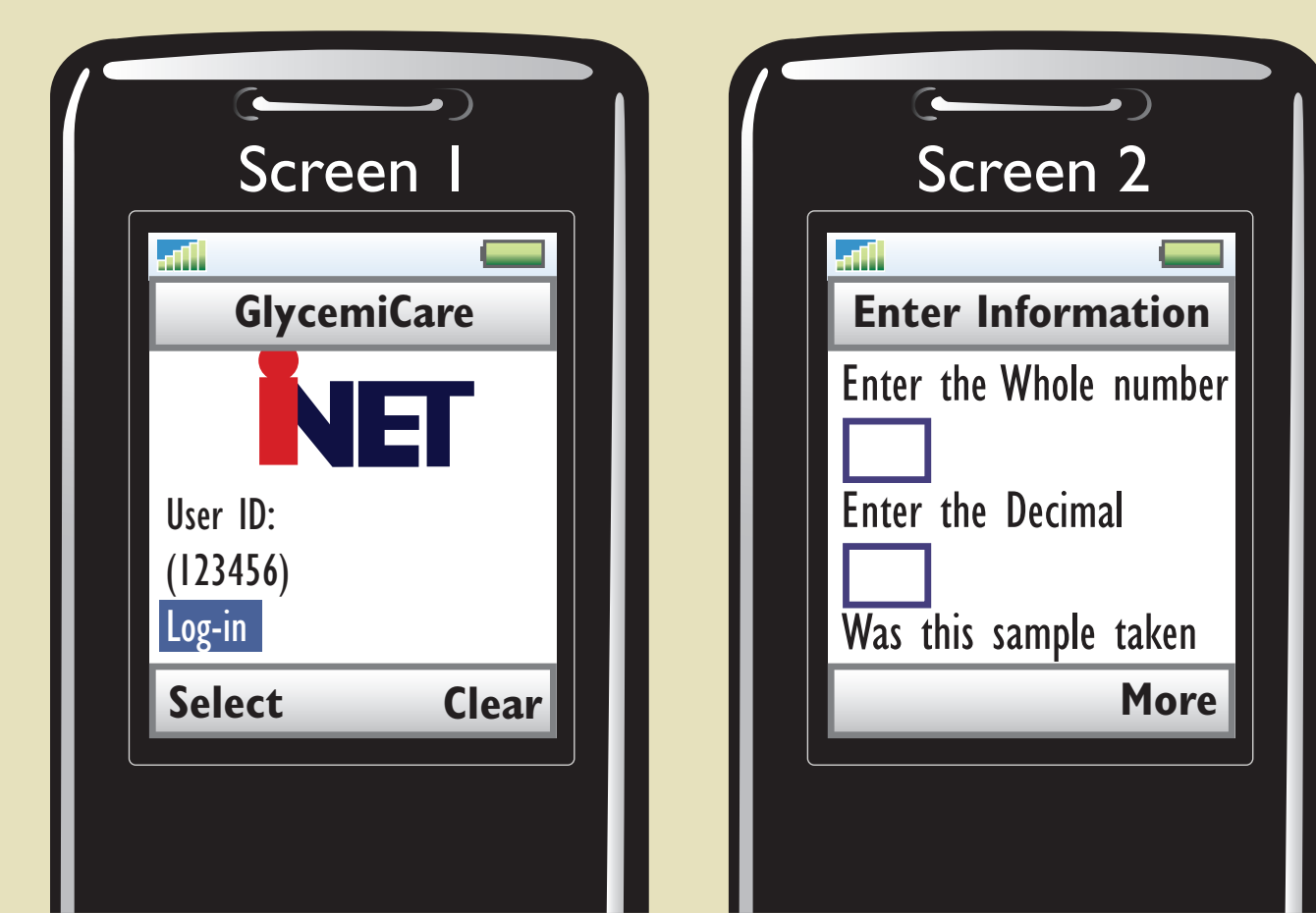
Daily Use

1. Please take a blood test.

2. Then use your cellphone and click on the bookmark, enter your reading. Please enter the whole number in the first field and the decimal in the second field as the example demonstrates in Step 1.

3. You may need to scroll down to see the "Before Meal" and "After Meal" selections, see Step 2. After clicking on one of these options your reading is submitted, see Step 3. At this point just exit the application the same way as you normally end your cellphone telephone conversation.

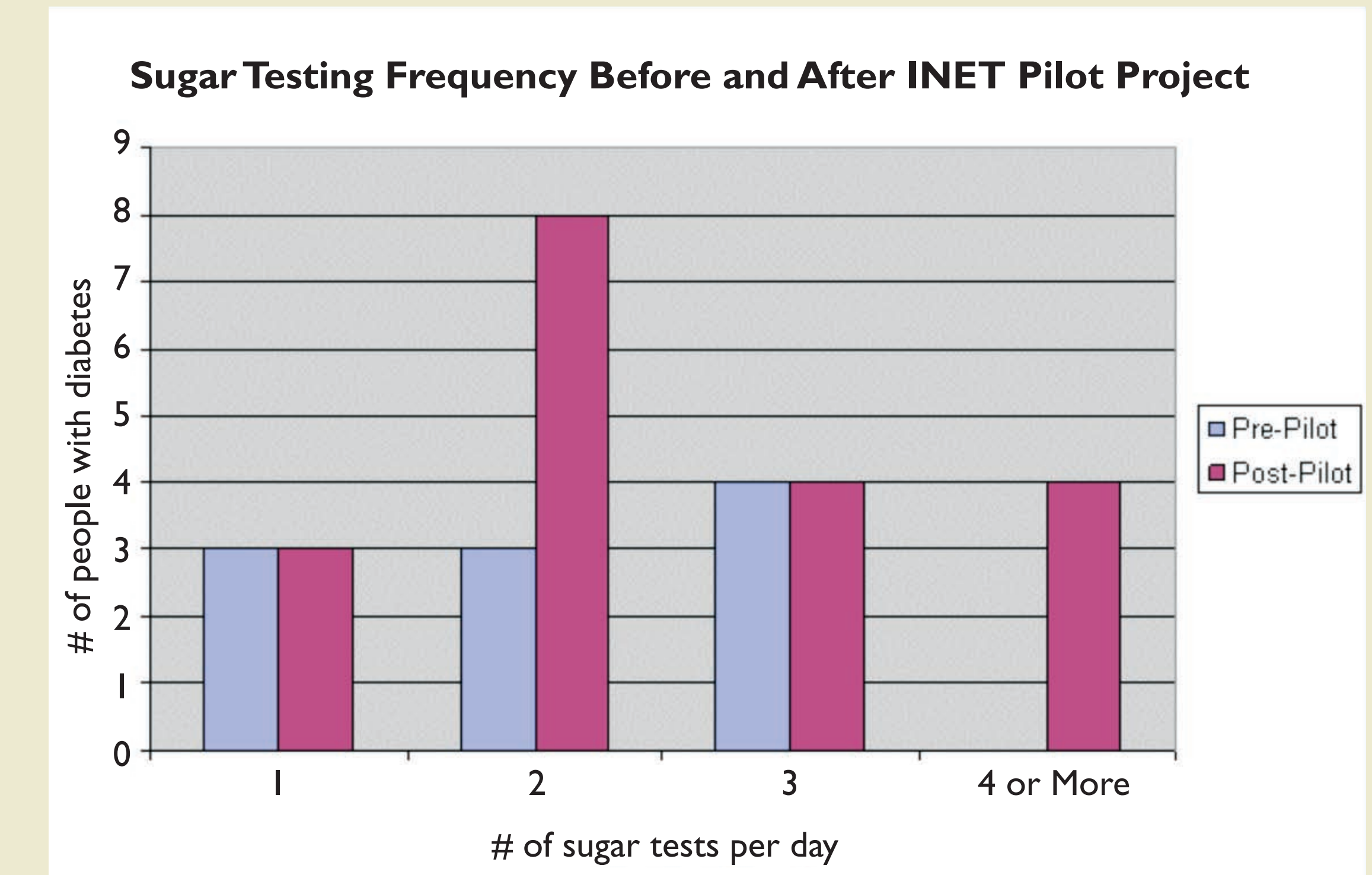
4. Your diabetes educator and/or physician monitors your progress and can transmit you a message that is displayed on your cell phone. Please see the "Feedback" screen. After you have read your message please select Done.



- Glucose readings transmitted to computer at Diabetes Care Centre into Bayer WinGlucofacts program

Results

- 20 patients completed the pilot project
- 18 of 20 patients registered an improvement in their A1C; 1 maintained a good A1C
- Prior to the pilot, only 9 of 20 patients recorded their blood sugar readings once a day or more. After the pilot, 19 of 20 patients recorded daily.
- 19 of 20 patients said the program made a "moderate" to "substantial impact" on their ability to control their sugar levels.
- 11 patients were "very" or "extremely" interested in continuing the program
- 16 patients said they would recommend it to their physicians
- Educators were able to review readings and respond to 7 patients in several minutes
- Educators felt they needed more information such as patient's food and exercise



Date	Early A.M. 12:00 a.m. – 4:59 a.m.	Morning 5:00 a.m. – 10:59 a.m.	Midday 11:00 a.m. – 2:59 p.m.	Evening 3:00 p.m. – 6:59 p.m.	Night 7:00 p.m. – 11:59 p.m.	Comments
05/26/06 Fri		p 9:24 a.m. 9.1 (1)	p 1:10 p.m. 6.9 (2)	p 6:20 p.m. 6.2 (3)		(1) Glycemicare (2) Glycemicare (3) Glycemicare
05/27/06 Sat		p 9:55 a.m. 8.6 (1)		p 5:12 p.m. 3.6 (2)		(1) Glycemicare (2) Glycemicare
05/28/06 Sun		p 9:26 a.m. 12.9 (1)				(1) Glycemicare
05/29/06 Mon			p 2:55 p.m. 11.1 (1)		p 7:41 p.m. 6.9 (2) 11:13 p.m. 7.7 (3) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare
05/30/06 Tue		p 8:00 a.m. 9.2 (1)	p 1:38 p.m. 9.7 (2)	p 6:32 p.m. 8.2 (3)	p 11:19 p.m. 11.1 (4) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare (4) Glycemicare
05/31/06 Wed		p 7:52 a.m. 10.9 (1)	p 12:14 p.m. 14.2 (2)	3:48 p.m. 8.4 (3) P	p 7:22 p.m. 8.0 (4) 11:08 p.m. 17.9 (5) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare (4) Glycemicare (5) Glycemicare
06/01/06 Thurs		p 8:02 a.m. 6.6 (1)	p 2:25 p.m. 5.5 (2)			(1) Glycemicare (2) Glycemicare
06/02/06 Fri		p 8:02 a.m. 12.0 (1)	p 1:53 p.m. 11.3 (2)	p 5:54 p.m. 5.4 (3)	10:50 p.m. 7.4 (4) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare (4) Glycemicare
06/03/06 Sat		p 8:30 a.m. 8.6 (1)	p 2:34 p.m. 5.6 (2)		11:57 p.m. 12.2 (3) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare
06/05/06 Mon		p 7:54 a.m. 7.5 (1)	p 1:00 p.m. 8.6 (2)	p 6:11 p.m. 3.9 (3)	11:23 p.m. 7.1 (4) P	(1) Glycemicare (2) Glycemicare (3) Glycemicare (4) Glycemicare
06/06/06 Tue		p 9:02 a.m. 10.1 (1)	p 12:20 p.m. 13.7 (2)			(1) Glycemicare (2) Glycemicare

Conclusions

The INET wireless program offers:

- a complimentary tool for communication between patients and their health-care professionals
- an efficient way to observe and respond to patients.
- additional support and encouragement for patients, assisting them to develop their self-management skills