



MEMORANDUM

Medtronic launches CareLink iPro Pattern Snapshot, a one-page download report showing glucose patterns and possible causes - November 30, 2015

Executive Highlights

- Medtronic [announced](#) the launch of [CareLink iPro Pattern Snapshot](#), a new one-page download report for the blinded iPro2 professional CGM. The report prominently shows a patient's top three glucose patterns and lists up to six possible causes for each one. Snapshot is designed to ease clinician interpretation of sensor data and serve as a teaching tool for patients.

Today, Medtronic [announced](#) the launch of [CareLink iPro Pattern Snapshot](#), a new one-page download report for the blinded iPro2 professional CGM. The report prominently shows a patient's top three glucose patterns and lists up to six possible causes for each one (e.g., Pattern: low glucose, pre-dinner (5-8 pm); Possible Causes: Dinner delayed? Exercised before dinner? Oral medication(s) too high or incorrectly timed? Basal insulin injections too high?). Pattern Snapshot is available now in the web-based CareLink Pro software - providers simply download a patient's three-day blinded iPro2 CGM sensor.

Medtronic has clearly put a lot of thought into making the "possible causes" list comprehensive for each pattern, though the long list (up to six) and question marks clearly put the onus on the provider to make a call as to the real cause(s). That is to be expected, as iPro2 cannot collect all the data streams to make firmer recommendation (e.g., it does not collect basal injections, exercise data, etc.). Of course, lists of "possible" causes and question marks make it easier from a regulatory perspective, and these are far better than just sensor data alone. We hope that as other data streams are integrated more seamlessly, software will move from suggestive questions to prioritized recommendations. On the bright side, the broad list of causes will serve as a valuable teaching tool in patient-provider conversations.

The new Snapshot report does an admirable job of fitting critical information on a single page, a must have for CGM downloads as diabetologists are increasingly overloaded. This is also a hallmark of Dexcom's new web-based Clarity software, though Medtronic has done a better job of listing possible causes more prominently than in Clarity (where you must leave the Overview page and scroll to the very bottom of the Patterns page to see a list of "possible considerations"). We like that Clarity is both patient and provider facing, highly interactive, shows rebound highs/lows, and displays the individual glucose traces that make up the pattern. Dexcom plans to launch a provider-facing version of Clarity at some point, which will presumably include more prominent considerations or clinical decision support.

To our knowledge, Abbott's FreeStyle Libre download software (Ambulatory Glucose Profile) does not list possible causes of patterns, but we assume this is in the pipeline (AGP does show traffic lights at different times of day to indicate problem areas). As a reminder, Abbott's blinded FreeStyle Libre Pro sensor is expected to launch in the US next year (submitted in [2Q15](#)). FreeStyle Libre Pro's 14-day wear, factory calibration, and slim form factor is a big step up over iPro2's three-day wear, need to retrofit the raw sensor data to fingerstick readings, and larger transmitter. Libre Pro is also an improvement over a blinded version of Dexcom's G4, which still requires carrying the receiver and entering two fingerstick calibrations per day. Dexcom has never prioritized blinded CGM, and we're not sure of the company's future plans on that front (perhaps the partnership with Google could be leveraged there). Of course, there is tremendous potential for many blinded AND real-time sensors to flourish commercially, given the number of patients not at goal.

- The top of [CareLink iPro Pattern Snapshot](#) shows average glucose, estimated A1c, and time-in-range throughout the three days of blinded sensor wear (picture below).** These

stats are presented as just numbers, though perhaps future outputs could compare them to clinical guidelines (assuming time-in-range guidelines are ever developed!) and use more color-coding. Snapshot shows the standard modal day spaghetti chart at the bottom, which remains a bit overwhelming to interpret, even with just three days of sensor wear to digest.

Close Concerns Questions

Q: Will Medtronic ever roll this Snapshot out to the patient-facing CareLink software?

Q: Will Medtronic improve iPro2's sensor wear time and form factor to compete with Abbott's FreeStyle Libre Pro?

Q: Will Abbott's FreeStyle Libre Pro see rapid adoption once it is launched in the US?

Q: What will Dexcom do on the blinded CGM front?

CareLink iPro Pattern Snapshot



Pattern Snapshot for **202435**
Nov 3 - Nov 6, 2014

(4 days)

Medtronic iPro2 Recorder

#3069100

Avg SG: **158 mg/dL**

Time in range: **52% Above** 150 mg/dL

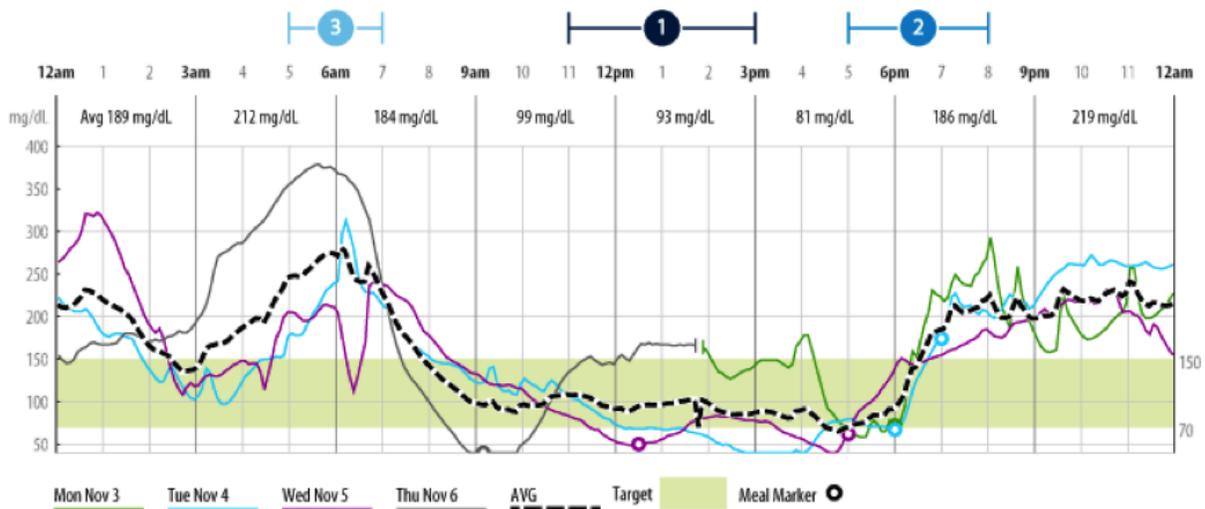
Estimated A1C⁽¹⁾: **7.1%** calculated from SG values

33% in target range

15% Below 70 mg/dL

OBSERVED PATTERNS & SOME POSSIBLE CAUSES⁽²⁾

1	2	3
Variable SG - Lunch time⁽³⁾ 11:00 AM - 3:00 PM	Low SG - Pre-dinner 5:00 PM - 8:00 PM	High SG - Fasting time⁽³⁾ 5:00 AM - 7:00 AM
Glucose variability during lunch time for 4 days	3 out of 4 days excursions observed: 2 day(s) 50 - 70 mg/dL 1 day(s) < 50 mg/dL	3 out of 3 fasting days excursions observed: 1 day(s) 150 - 250 mg/dL 2 day(s) > 250 mg/dL
<ul style="list-style-type: none"> Occasional snack between meals? Variable meal schedule or meal size? Oral medication(s) intermittently omitted, too low or incorrectly timed? Pre-meal insulin for prior meal(s) incorrectly timed, too low, or omitted? Insulin to carbohydrate ratio not optimal for pre-meal insulin? 	<ul style="list-style-type: none"> Dinner delayed? Exercised before dinner? Oral medication(s) too high or incorrectly timed? Basal insulin injections too high? 	<ul style="list-style-type: none"> High calorie or high fat foods in prior evening(s)? Late evening snack? Rebound hyperglycemia after nocturnal hypoglycemia? Oral medication(s) omitted, too low or incorrectly timed? Basal insulin injection in evening(s) too low?



-- by Adam Brown and Kelly Close