# Health Canada approves insulin pump with partial artificial pancreas capability

2018-Oct-10 saw Health Canada approve the Medtronic 670G insulin pump, the first of its kind in Canada to support closed-loop functionality for basal insulin. This innovation, the first step towards an artificial pancreas, is welcome news for every individual with diabetes who is an intensive insulin user (either a pumper or taking multiple daily shots). And it will make life much easier for staff at specialist diabetes centres like BCDiabetes.

The 670G is expected to be available for purchase in November 2018. The price is the same as the Medtronic 630G (covered by BC Pharmacare, see this blog). Coverage with BC Pharmacare is expected to follow quickly.

The Medtronic 630G already has the “smartguard” low suspend functionality such that insulin infusion is automatically stopped for up to 120 minutes if a low sugar alarm is triggered by the built-in Medtronic Guardian sensor (continuous glucose meter/CGM) without the user responding. The 670G goes several steps further. With the 670G optimal basal insulin infusion rates can be set up by allowing Guardian sensor/CGM to record 2+ days of glucose data during the basal state. Activation of the 670G “auto” function implements the optimized basal rates which then run automatically while the Guardian checks the sugar every 5 minutes. If the sugar drops below <6.7 (or 8.3 if in "exercise" mode) the basal infusion will be automatically stopped & only restarted once the sugar level rises to 6.7 or higher (or 8.3 if in exercise mode).

This results in more time in target, fewer lows (in particular fewer severe lows) and better A1c.

Other manufacturers are expected to release insulin pump/closed loop systems in Canada within the next 12 months. The Tandem T:slim X2 insulin pump which is seamlessly combined with the Dexcom G5 CGM was approved for use in Canada 2018-10-12. Once the Dexcom G6 CGM is available in Canada it can be combined with the Tandem T:slim X2 to create the Tandem "basal IQ" a direct competitor of the

Medtronic 670G. Here is a comparison of the two pump basal closed loop systems available in the US.

The Omnipod closed loop system, also developed in partnership with Dexcom, is being tested pre-release in the USA - it is not expected in Canada until late 2019.