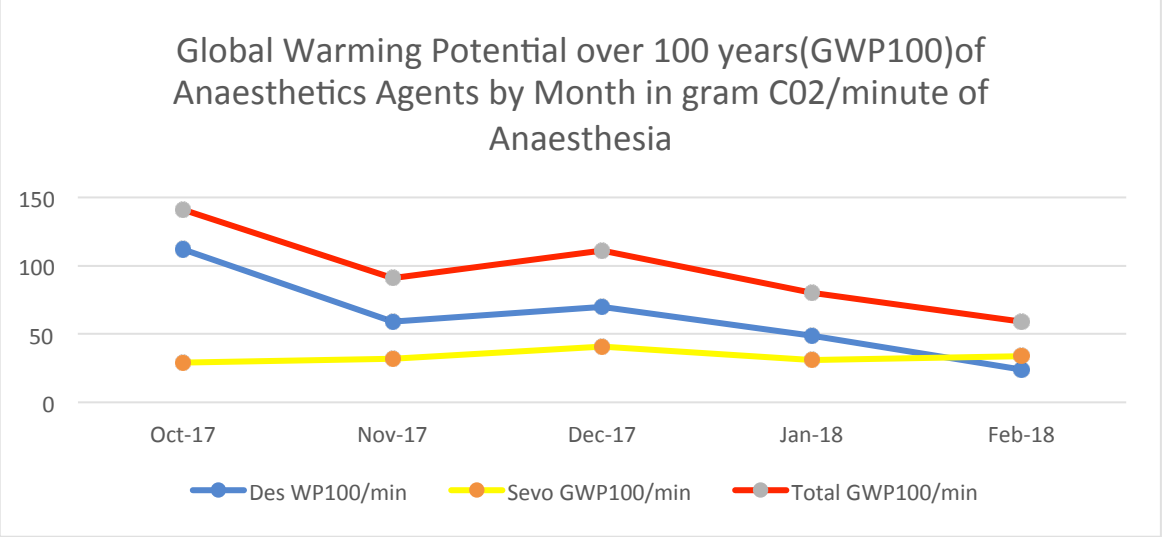
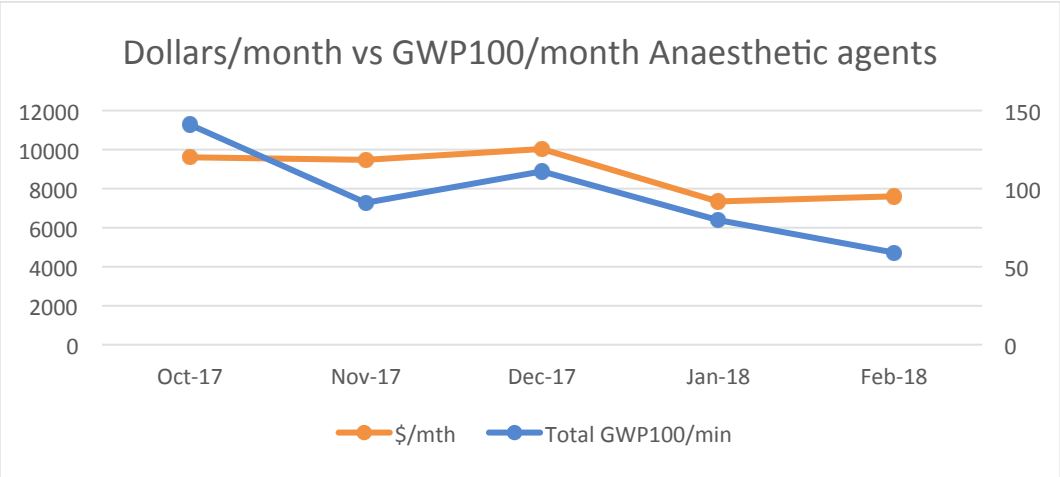
Baseline assessment of global warming potential of Anaesthetic Agents Dunedin Hospital (Matthew Jenks May 2018)

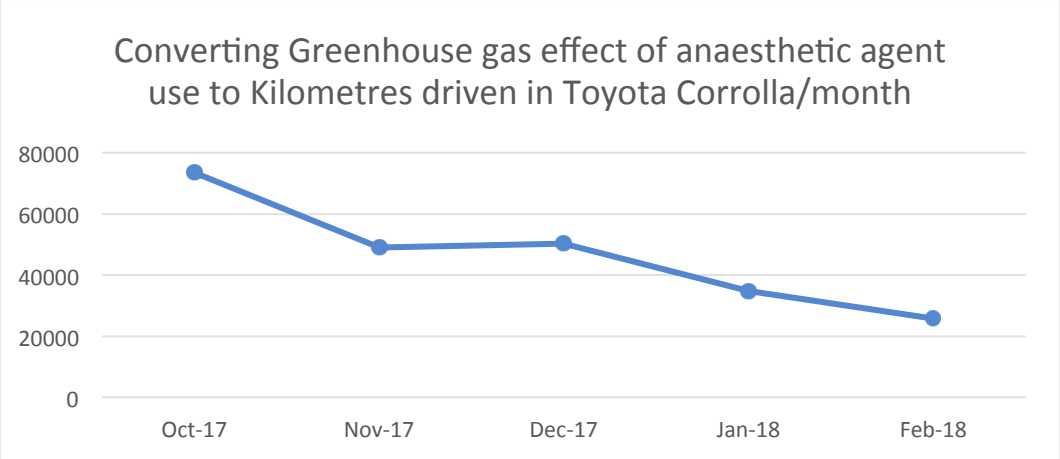
- This analysis uses the most up to date figures for the global warming potential of anaesthetic agents over a 100-year time frame (GWP100) published by Sulbaeck Anderson (Anaesthesia and Analgesia 2012).
- GWP100 is the standard metric used to assess greenhouse gases and is used by the IPCC in their reports. The reference gas is C02 (GWP100 = 1). This allows non C02 greenhouse gases such as the volatile anaesthetic agents to be referenced against C02 and measured in C02 equivalents.
- The value for sevoflurane is 130 and for desflurane is 2540. (desflurane is therefore 2540 times more potent than C02 as a greenhouse gas).
- This analysis excludes N20 (also a greenhouse gas).
- A bottle of sevoflurane costs $140 and desflurane $225 (SDHB procurement). As desflurane is less potent more needs to be used for a similar level of anaesthesia. Therefore, it is a more expensive agent to use per minute of anaesthesia.
- The GWP100 figure per month is calculated from bottles of agents used (data from pharmacy)
- The GWP100 is benchmarked against theatre minutes to mitigate against changes in patient activity.
- This initial report covers five months (Oct 2017 – February 2018) and acts as a baseline assessment. Reports will be released quarterly going forward.

Our baseline average anaesthetic use is equivalent to 96 grams of C02 per minute of anaesthesia

- Experience from CMDHB demonstrates an almost $200,000 dollar saving per annum as desflurane use dropped. There was also a corresponding reduction in global warming potential of agents used by CMDHB. For several months in 2017 they recorded no desflurane use.







Counties Manukau data demonstrating a drop in global warming potential as desflurane use reduced and financial savings as a result