

Smartphone app aims to reduce surgical complications for up to 3,000 hysterectomy patients who currently need to be readmitted or retreated every year

Around 30,000 hysterectomies are performed in Australia every year with up to 3,000 women undergoing the procedure affected by complications during or after surgery*. However surgeons are currently unable to give accurate advice to patients on their individual risk of complication.

A new smartphone app** called RISC (Risk of Surgical Complications) uses a specially designed statistical algorithm to help surgeons assess their patients against detailed data from over 3,000 procedures and give their patients a much more accurate indication of their individual risk of complications. The vast majority of patients (96%) are low risk (a likelihood of complication of less than 3%), however the remaining 4% fall into the intermediate/high risk category and face a 13-34% likelihood of complication/s during or after surgery.

The app is based on a database of 3,066 hysterectomy procedures where surgeons have recorded 89 specific information points about the patient and the procedure, including any complications that arose within six weeks of the procedure (240 of these patients developed one or more complications).

Factors taken into account fall into two types:

- 1) the surgical technique used and how the surgery is conducted and
- 2) factors relating to the patient's health, age and any other conditions.

The app then applies the algorithm to all of these factors which results in a risk assessment of low, intermediate or high. If the algorithm determines that a patient has an intermediate or high risk of complication, the surgeon can then suggest less invasive treatment options or other measures to mitigate the complication risk for the patient. For example if a high risk case presents to a gynaecologist, they need to make sure they have the capabilities available to deal with a possible complication. This may involve bringing other specialists into the medical team, or even transferring the patient for treatment somewhere else.

A greater awareness of risk of complications will not only result in lower complication rates and better outcomes for patients, but could also reduce healthcare expenditure attributable to complications by over \$20M per annum (assuming a reduction of complications in hysterectomy of 40%).

Currently the RISC app gives risk information only for hysterectomy procedures, but will in the future offer modules to help surgeons in other surgical fields assess patient complication risk factors.

*some studies indicating complication rates of 8.5% - 10%; Surgical Performance data indicates a complication rate of 7.78%

**the app is for use by surgeons only; development of the app received \$100,000 funding from the Queensland Government via the Advance Queensland Ignite Ideas Fund

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About SurgicalPerformance

SurgicalPerformance is an independent, registered Australian company based in Brisbane, Australia. SurgicalPerformance was developed in 2008 and relaunched in 2011 by Professor Andreas Obermair, a gynaecological oncologist in active clinical practice, who identified an unmet personal need for his practice. SurgicalPerformance is a data collection and feedback tool providing accurate, measurable and clinically meaningful information for its users. The data provided is essential to providing bench-marked feedback in order to self-assess and improve. More information at surgicalperformance.com.

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