

## Theatre utilisation during the COVID-19 pandemic – what we learnt in rural health services

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The history of humankind has shown that global catastrophic events produce some of our greatest advances. World War II, the HIV-AIDS pandemic and 9/11 have all left a deep imprint on the global psyche, but some of humanity's greatest technological innovations occurred during and after these. These include the development of the personal computer, penicillin, anti-retroviral drugs, global digital networks, social media and global movements for human rights.<sup>1-3</sup>

The article by Morley-Jepson and colleagues<sup>4</sup> in this month's issue of SAJAA analyses operating theatre utilisation at a South African regional hospital during the COVID-19 pandemic, detailing how surgical disciplines were affected and the effect on surgical morbidity and mortality. The decreased provision of elective surgery was an international reality that impacted surgical patient care significantly in most countries.<sup>5</sup>

The COVID-19 pandemic was a truly global catastrophe and has generated scrutiny of pandemics and disease transmission and a deeper analysis of how we manage our workforce in this new reality. Shortly after the national lockdown on 27 March 2020, elective surgery at another regional hospital, Paarl Hospital in the Western Cape, ground to a halt. The first few weeks presented many challenges, including the provision of emergency surgical services with multiple staff redeployed, off sick or self-isolating. It was also clear that purely elective surgery within the state sector was a fallacy, with many patients on elective waiting lists suffering daily as they awaited their urgent, often life-saving, surgery.

In the final quarter of 2019, Paarl Hospital's top management embarked on a lean management journey<sup>6</sup> and employed an industrial engineer to assist with redesigning and strengthening the hospital's management systems. This investment proved fortuitous after the lockdown, as the dramatic change in the healthcare environment required a new perspective. Some of the earliest changes introduced included the adoption of daily huddles, the visual display of key departmental information (including COVID-19 stats), and the instruction of managers in key lean management techniques, like value stream mapping and the 5S system.

Figure 1 illustrates the decrease in the number of surgeries performed at Paarl Hospital after the national lockdown. Regular

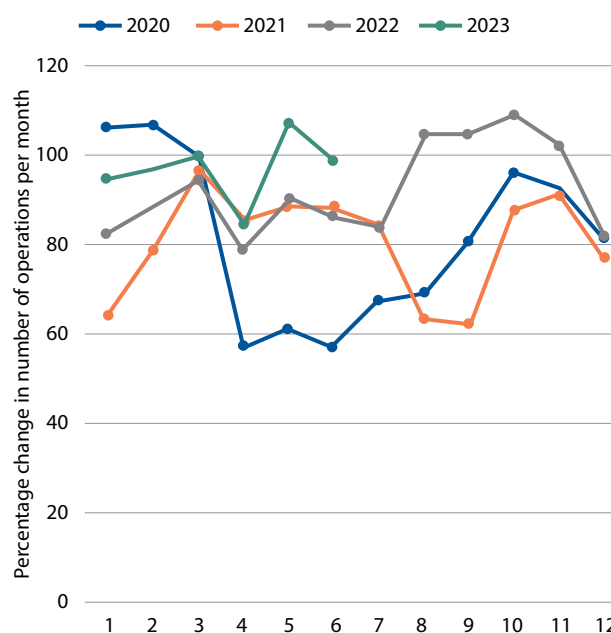


Figure 1: Percentage change in the number of operations per month compared to the monthly average in 2019

wards, which were filled with COVID-19-positive patients, could not safely accommodate uninfected surgical patients. There was a need for a dedicated day-case surgery service, where patients could be admitted and discharged separately from COVID-19-positive patients, allowing urgent and elective surgical services to resume for qualifying patients.

With the assistance of the industrial engineer, the theatre management team used lean management tools<sup>7</sup> to map the day-case surgery pathway for patients from admission, through their surgical journey to discharge. Every key moment in the journey was assigned to a category, including patient, surgeon/anaesthetist, nurse, ward or admin, with arrows and borders directing interactions. Figure 2 demonstrates a portion of the flow diagram for the postoperative pathway.

Mapping the day-case surgery service also highlighted the importance of patient pre-assessment at a combined preoperative surgical and anaesthesia clinic. These clinic visits were scheduled for the Friday preceding the date of surgery. This clinic allowed the surgical and anaesthesia team to confirm the nature of the surgical intervention required, the appropriateness

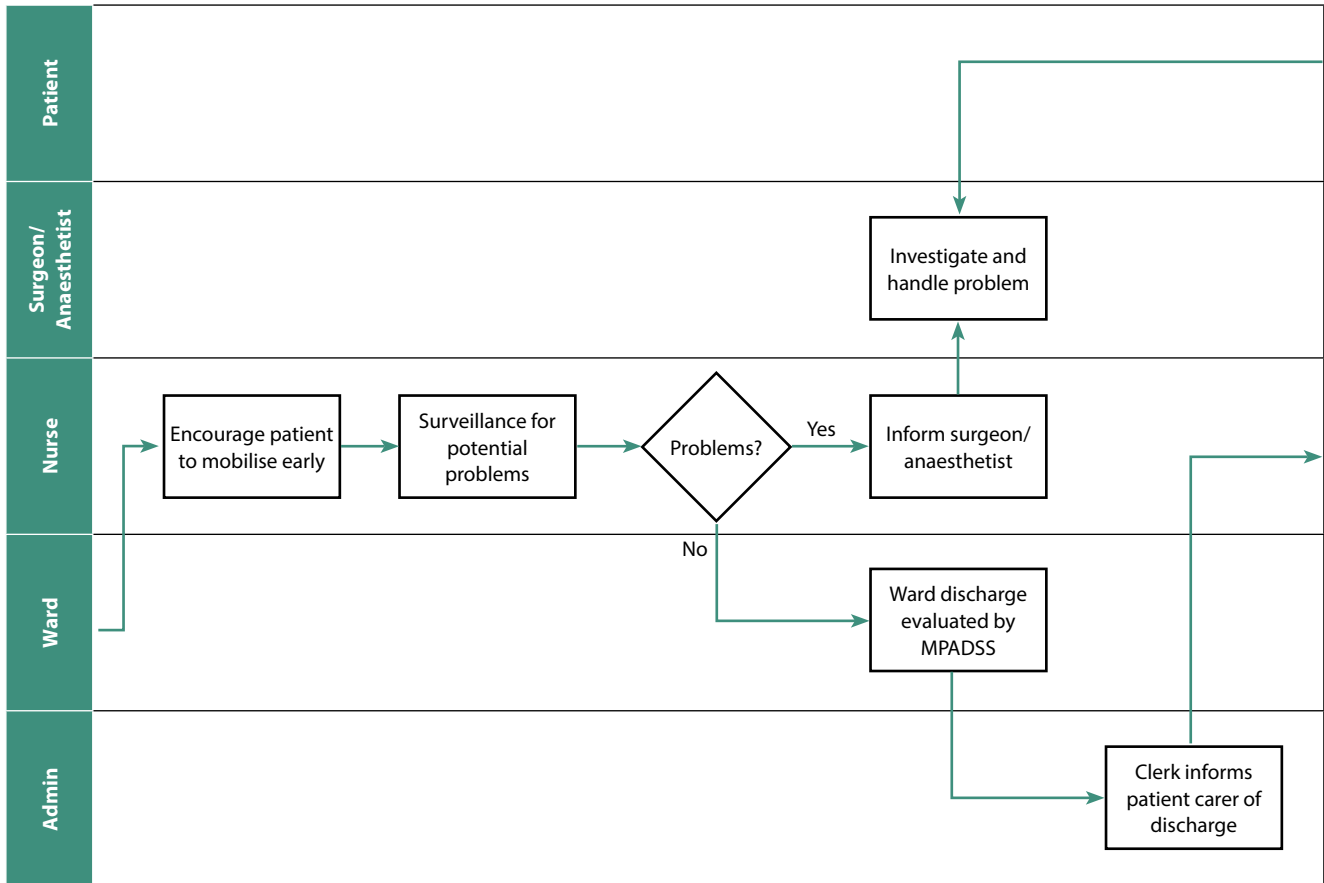


Figure 2: Portion of the postoperative pathway for day-case surgery patients

of day-case surgery, patient suitability, special investigations required (most performed at the clinic, e.g. ECG, blood work, etc.) and COVID-19 screening.

Implementing these processes significantly increased the number of urgent and elective surgeries at Paarl Hospital during the pandemic. Even though the second and third COVID-19 waves produced more COVID-19 hospitalisations, the reduction in the number of operations compared to the first wave was less and the resumption of regular surgical services between waves occurred more rapidly.

The pandemic may have ended now, but day-case surgical services and the preoperative assessment clinic have remained and expanded, continuing to facilitate urgent and elective surgery. The gravity of the pandemic enabled the rapid implementation of these services, changes which may have taken years to occur in “normal” times, once again demonstrating that innovation during times of great upheaval can affect large and lasting changes.

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