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**Intraoperative Neurophysiological Monitoring (IONM) in Neurosurgery Kwong Wah Hospital**
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## Introduction

Intraoperative neurophysiological monitoring (IONM) is widely used for monitoring the functional integrity of neural structure during surgery. Mapping of eloquent brain tissue allows location of functional areas and avoids permanent injury. Therefore, IONM team is essential in modern neurosurgical service so as to minimize new neurological deficits and improve patients' quality of life.

## Objectives

To introduce the IONM team in Kwong Wah Hospital and review the performance in terms of surgical safety, postoperative complication, patients' satisfaction and their quality life.

## Methodology

IONM team in Neurosurgery, Kwong Wah Hospital has been set up since 2012 and it now consists of 7 members, including 2 advanced practice nurses and 5 registered nurses. There are mainly two techniques used: monitoring and mapping. For monitoring, real time functional assessment of sensory and motor pathway is done. These include electroencephalography (EEG), electromyography (EMG), brainstem auditory evoked potentials (BAEPSs), somatosensory evoked potentials (SSEPs) and motor evoked potentials (MEPs). On the other hand, mapping includes direct cortical stimulation, phase reversal and motor root mapping. For a given neurosurgical operation, a set of modalities of IONM is specifically designed by the team members. The intraoperative applicability, event detection, post-operative neurological deficit and patients' satisfaction are recorded for analysis.

## Result

From 2012 to July 2016, there were 150 cases of neurosurgical operation in which IONM was required. Early detection of possible neurological damage alerted neurosurgeons during the operation. Most cases showed positive result. Over 90% of the cases did not develop new postoperative neurosurgical deficits.
IONM is the gold standard for monitoring the functional integrity of neural structure

during neurosurgical operation. Our team has close collaboration and provides high quality perioperative consultation, psychological preparation and intra-operative monitoring for our patients. The risk of adverse neurologic outcomes is greatly reduced through our team collaboration.