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Singapore's segregated-team model achieves cancer care during COVID-19

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The National University Cancer Institute, Singapore (NCIS) is a comprehensive academic cancer center in Singapore, managing about 7000 outpatients and 450 inpatients per month in Adult and Pediatric Haemato-Oncology. The higher risk of COVID-19 complications in cancer patients required a coordinated effort to ensure business continuity while maintaining patient and staff safety. With this pandemic threatening to overwhelm healthcare systems globally. NCIS aims to share their experience with a segregated-team workflow in response to COVID-19, whilst maintaining the core activities of a comprehensive cancer centre.

The NCIS doctors and medical team developed the model and workflow with the help of senior doctors who were practising during the SARS epidemic. The model was created based on specific lessons learnt from SARS that were considered vital to the business continuity operations of a cancer centre during an outbreak. These include ensuring staff safety from infection to preserve manpower, allocation and re-designation of limited resources; and consideration of unique challenges posed by cancer patients compared to non-cancer patients.

The guiding principle of the NCIS pandemic strategy was to ensure staff and patient safety through team segregation and careful resource allocation. The framework allowed continued care for cancer patients requiring time-sensitive treatment while avoiding major disruptions to therapeutic clinical studies and education. The outline is summarised below.

Clinical Service

Segregated-team workflow: All clinical and non-clinical staff were divided into two teams, and physicians sub-teams were further geographically confined to specific wards, outpatient and office areas to minimise exposure and cross-contamination. Each sector had its own facilities to enable contact tracing. All conference leave was cancelled to maximise manpower resources.

Resource conservation and allocation: A reduction of patient volume by postponing non-urgent patient visits and surgeries

was instituted. Telemedicine consults, home delivery of medications and online payment were encouraged.

Management of suspect cases and Personal Protective Equipment (PPE) conservation: Thermal scanner and questionnaire screening were performed on all patients and visitors at hospital entrances. Outpatients who meets the Ministry of Health criteria for suspect case would be escorted to a cancer centre single room for subsequent management. Cancer patients with confirmed Covid-19 were managed in a designated ward by the pandemic team, staffed by internal medicine physicians, with telemedicine support from hematology-oncology. This reduced the utilisation of PPE in the cancer wards.

Research and education

Therapeutic cancer studies continued in non-high-risk areas. Teleconferencing was utilised to continue academic activities including clinical trial monitoring, departmental meetings and education.

Safety, welfare and morale of staff

Since the outset of the Covid-19 outbreak, senior hospital management has been giving daily email updates on the status of cases nationwide, modifications to workflow and suspect case definition, to provide clear communication and minimise uncertainty among staff. Strategies to help boost staff morale included sharing of appreciation messages, provision of refreshments and setup of a group-chat to share anecdotes and information.