

Perspect

Malta's only acute public hospital service during COVID-19: a diary of events from the first wave to transition phase

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Abstract

Introduction: COVID-19 has challenged healthcare systems worldwide. Some countries collapsed under surge conditions, while others (such as Malta) showed resilience. Public health measures in Malta quickly reined in COVID-19 spread. This review summarizes pandemic preparedness measures in Malta and the impact on routine services.

Methods: A literature search was conducted using Google, Google Scholar and PubMed and by reviewing Maltese online newspapers. A comprehensive summary of internal operations conducted at Mater Dei Hospital (MDH) was made available.

Results: A hospital 'Incident Command Group' was set up to plan an optimal COVID-19 response strategy. A 'rapid response team' was also created to cater for the logistics and management of supplies. A 'COVID-19 Emergency Operation Centre' simulated different COVID-19 scenarios. All elective services were suspended and all staff were mandatorily trained in wearing personal protective equipment. Staff were also retrained in the care of COVID-19 patients. In preparation for potential admission surges, MDH underwent rapid expansion of normal and intensive care beds. Swabbing was ramped up to one of the highest national rates worldwide. The cost for hospital COVID-19 preparedness exceeded €100 million for Malta's half a million population.

Conclusion: Malta and its sole acute hospital coped well with the first wave with 680 cases and 9 deaths. The increased ability to deal with COVID-19 (a principally respiratory pathogen) will serve well for the anticipated combined annual influenza and the COVID-19 second wave this coming winter.

Key words: coronavirus, healthcare services, hospital operational excellence, health and safety, Malta

Introduction

COVID-19 has challenged healthcare systems worldwide. Its rapid spread from China over 2 weeks required countries to be proactive and activate contingency plans. Some countries such as Italy collapsed under surge conditions. Others, such as Malta, showed

resilience [1, 2]. Malta is a small European country in the middle of the Mediterranean Sea with a population of 514 564 and an excellent healthcare system dating back to the 1530s under the rule of the Knights of St. John. Healthcare is a system inherited from and based on the British National Health System, funded by the taxpayer

and free at point of care [3]. The country is served by one acute general facility (Mater Dei Hospital (MDH), Figure 1) with 1000 beds including a 20-bed intensive care unit with an annual admission rate of 99 388 for the year 2019.

Public health measures in Malta quickly reined in COVID-19 spread with the country singled out by the World Health Organization (WHO): ‘the most trusted healthcare system in the whole European Union’ [4]. This review summarizes pandemic preparedness measures in Malta and the impact on routine services.

Data sources

A literature search was conducted using Google, Google Scholar, PubMed and Maltese online newspapers. A comprehensive summary of internal hospital operations was provided by the chief operating officer and administration staff.

The following processes and actions will be described: the setting up of administrative teams and supporting software, outsourcing for supplies, staff training, inpatient preparations for surges in acute admissions, the setting up of diagnostic swabbing centres, miscellaneous measures such as suspension of elective work at the hospital, quarantining for the vulnerable, childcare services for staff and the institution of teleworking.

Preparedness

In anticipation of COVID-19 in Malta, a hospital ‘Incident Command Group’ (ICG) was set up in mid-February, as per the recommendations of the European Centre for Disease Prevention and

Control [5]. The ICG is a well-known management and response framework used by many specialties and organizations in disasters of varying size and complexity. An ICG is able to swiftly assemble and implement plans and allocate resources in response to the COVID-19 crisis. By the beginning of March, MDH’s COVID-19 response strategy was in place. On 7 March, the first imported case of COVID-19 was identified in Malta [1]. A ‘rapid response team’ was also created to cater for the logistics and management of supplies including pharmaceuticals and to increase the number of ventilators, monitors, ancillary equipment, personal protective equipment and hand sanitizers to accommodate potential demand. Simultaneously, a ‘COVID-19 Emergency Operation Centre’ simulated different COVID-19 scenarios using real-time electronic dashboards including key metrics such as current bed occupancy levels in different wards such as general beds and critical care beds. These simulations also evaluated different accident and emergency (A&E) patient encounters and their associated waiting times.

Outsourcing

MDH protocols included outsourcing care of non-critical patients to alternative sites and the suspension of all non-essential services including elective surgery and non-urgent outpatient appointments [6].

Staff training

Staff released from non-essential services were redeployed for training and retraining for COVID-19 management. For example, cardiothoracic and surgery specialists and ward nurses trained in basic



Figure 1 Mater Dei Hospital geographical location.

intensive care unit (ICU) care. All staff were enrolled to a compulsory training and fitting test of personal protective equipment. Donning and doffing areas for personal protective equipment complete with mirrors were set up in all COVID-19 areas [2].

Surge capacity

In preparation for potential admission surges, the hospital underwent rapid expansion of both clinical and critical care areas so as to utilize all extant idle spaces [6]. The number of ICU beds increased from 20 to 100 [1]. A number of non-clinical areas (such as the medical school library, lecture rooms and the staff canteen) were converted into patient-ready wards within 3 weeks. In line with WHO recommendations [6], an additional 600 COVID-19 beds were prepared by March 2020 [7]. Public open areas including MDH foyer and the outpatient corridors were all equipped with oxygen points so as to set up additional beds as needed [2].

Two A&E departments within MDH were set up for COVID-19 symptomatic patients and non-COVID-19 patients. Two operating rooms were completely isolated for COVID-19-positive patients.

Rapid identification and diagnosis

All of the country's swabs were processed at MDH at an initial rate of 300/day, which climbed to over 3000/day by August 2020 [1] as per WHO recommendations for early detection of spikes/hotspots [8]. All attendees to A&E were swabbed and admissions pending swab test results were housed in Management & Assessment of Respiratory Patient's areas transition wards.

To date (21 August 2020), 168 793 swabs have been done, ranking Malta as the third best swabbing rate in the world following the Gulf nations and Bahrain [9]. Results are disseminated into an electronic dashboard allowing real-time strategic decisions. Official communications with staff regarding the latest developments, protocols, etc. are disseminated in real time via an online COVID-19 portal.

Additional measures

MDH suspended patient visiting [1]. A quarantine protocol was instituted for the vulnerable elderly with swabbing of all new long-term home entrants. Healthcare workers with small children were offered bespoke childcare services since schools and childcare services were closed as part of the nation's containment measures [1]. Specific quarantine accommodation was also offered to professionals working with COVID-19 patients and for those who had to quarantine after inadvertent exposure. Administrative staff were shifted to teleworking.

The cost for COVID-19 preparedness exceeded €100 million for a population of half a million.

Transition and second wave

Malta suppressed COVID-19 from 7 March to 23 July 2020 with 680 cases and 9 deaths. The initiation of relaxation of measures on 5 May 2020 permitted the gradual resumption of normal healthcare services following WHO recommendations of a dual-track health service [10]. A second wave commenced once the airport was opened on 15 July, with 1546 cases and 10 deaths as of 21 August 2020.

Conclusion

Malta and its sole acute hospital coped well with the first wave, with 680 cases and 9 deaths. The increased ability to deal with COVID-19

(a principally respiratory pathogen) will serve well for the anticipated combined annual influenza and the COVID-19 second wave this coming winter.

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Data Availability

The narrative data used in this article originates from a diary kept by the Chief Operation Officer (COO) of the hospital along with online Maltese newspaper articles.

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