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### The Impact of COVID-19 on ST Elevation Myocardial Infarction

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**Background:** The coronavirus (COVID-19) pandemic significantly changed the landscape of medical care and the way people receive treatment.

**Methods:** We assessed all patients with ST elevation myocardial infarction (STEMI) presenting for primary intervention at Liverpool Hospital during the New South Wales lockdown from 12 March to 15 May 2020. We compared the total number of cases and the median onset of chest pain to balloon inflation time (PTB) to the same period in 2018 and 2019, and evaluated the rates of in-hospital mortality.

**Results:** During the lockdown, there were 29 STEMI (25 males [86%]) versus 51 (37 males [73%]) in 2019 and 40 (35 males [88%]) in 2018. Median age was 62 years (interquartile range [IQR] 55–69) in 2020 and 63 years (IQR 56–72) in the two preceding years. In-hour percutaneous coronary intervention (PCI) was done in 17 (59%) in 2020 and in 51 (56%) in the preceding years. The median peak troponin T was 3,850 ng/L (IQR 2,000–6,150) in 2020 versus 3,420 ng/L (IQR 1,750–7,000;  $p=1.000$ ). Median PTB time was 226 minutes (IQR 171–333) in 2020 versus 192 minutes (IQR 136–344;  $p=0.243$ ) in the preceding two years. The median time from qualifying electrocardiogram to balloon inflation was 106 minutes (IQR 89–136) in 2020 versus 93 minutes (IQR 79–120;  $p=0.532$ ) in the preceding two years. In-hospital death was 15% ( $n=5/29$ ) in 2020 versus 4% ( $n=4/91$ ;  $p=0.044$ ) in the preceding two years. Zero patients were diagnosed with COVID-19.

**Conclusion:** These data highlight delays in presentation times during the COVID-19 pandemic associated with a higher rate of in-hospital mortality.

<https://doi.org/10.1016/j.hlc.2021.06.507>

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### The Role of Comorbidities to Predict Failure of Functional Improvement at One Year Following Transcatheter Aortic Valve Implantation

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**Background:** Transcatheter aortic valve implantation (TAVI) patients have high rates of comorbidities that may affect outcomes.

**Objective:** We sought to evaluate the role of comorbidities in predicting failure of functional improvement after TAVI, using New York Heart Association (NYHA) class.

**Methods:** Data from 317 patients with severe aortic stenosis undergoing TAVI with 1-year follow-up were retrospectively analysed. The surviving 292 patients at 1 year were divided into two groups based on functional status, defined as those with an improvement in NYHA class at 1 year, and those with unchanged or worsening NYHA class.

**Results:** Failure to improve was noted in 12% of surviving patients. These patients were more likely to be NYHA II at baseline (78% vs 38%;  $p<0.001$ ), be severely obese (body mass index  $>35$ ) (20% vs 7%;  $p=0.03$ ), have diabetes (50% vs 27%;  $p<0.01$ ), or a pre-existing permanent pacemaker (22% vs 8%;  $p<0.01$ ). On multivariable analysis, NYHA class II (adjusted odds ratio [aOR], 7.2; 95% confidence interval [CI], 3.1–19.2 [ $p<0.001$ ]), severe obesity (aOR, 5.0; 95% CI, 1.6–15.2 [ $p=0.005$ ]), and diabetes (aOR, 2.8; 95% CI, 1.3–6.2 [ $p=0.008$ ]) remained independent predictors of failure to improve, with the predictive model having an area under the curve of 0.78 (0.69–0.86).

**Conclusion:** Patients with severe aortic stenosis and mild symptoms at baseline, a history of diabetes, or severe obesity are less likely to derive a functional improvement following TAVI. These findings may aid in pre-TAVI decision-making.

<https://doi.org/10.1016/j.hlc.2021.06.508>

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### The Tasmanian TAVI Service: Initial Experience and Outcomes

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**Background:** Transcatheter aortic valve implantation (TAVI) is now guideline treatment for severe aortic stenosis in patients over the age of 80 years.

**Objective:** We report the initial experience of the first 50 patients for the Tasmanian TAVI Service at the Royal Hobart Hospital established during the COVID-19 pandemic.

**Methods:** The records of patients undergoing TAVI with a balloon-expandable device between June 2020 and March 2021 at the Royal Hobart Hospital were reviewed. We report the procedural success and outcome, including major adverse events and haemodynamic results at the 30-day follow-up.

**Results:** Mean age was  $83.2\pm 0.7$  and mean EuroSCORE II and Society of Thoracic Surgeons' scores were  $5.6\pm 0.4\%$  and  $6.2\pm 1.0\%$ , respectively; 18% had undergone prior cardiac surgery. Successful transfemoral deployment of the valve was achieved in all patients. The cumulative stroke and mortality rates at 30 days were 0%. The minor vascular complication rate was 3.8%, with no major vascular complications, as per the Valve Academic Research Consortium-2 (VARC-2) criteria. No/trivial paravalvular aortic regurgitation (pAR) was observed in 79%, with 21% mild pAR. The mean AVA ( $\text{cm}^2$ ) increased from 0.73 to 2.1, with a subsequent mean reduction in mean gradient (mmHg) from 40 to