

## Trends in Incisional and Ventral Hernia Repair: A Population Analysis from 2001 to 2021

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**Abstract :** Background: Incisional and ventral hernias are highly prevalent, with primary ventral hernias occurring in approximately 20% of adults and incisional hernias developing in up to 30% of midline abdominal incisions. Recent data from the United States have shown an increasing incidence of elective incisional and ventral hernia repair (IVHR) and emergency repair of complicated hernias. This study examines Australian population trends in IVHR over a two-decade study period. Methods: This retrospective study was performed using procedure data from the Australian Institute of Health and Welfare, and population data from the Australian Bureau of Statistics captured between 2000 and 2021 to calculate incidence rates per 100,000 population by age and sex for selected subcategories of IVHR operations. Trends over time were evaluated using simple linear regression. Results: There were 809,308 IVHR operations performed in Australia during the study period. The cumulative incidence adjusted for the population was 182 per 100,000; this increased by 9.578 per year during the study period (95% CI = 8.431- 10.726,  $p < .001$ ). IVHR for primary umbilical hernias experienced the most significant increase in population-adjusted incidence, 1.177 per year. (95% CI = 0.654- 1.701,  $p < .001$ ). Emergency IVHR for incarcerated, obstructed, and strangulated hernias increased by 0.576 per year (95% CI = 0.510 -0.642,  $p < .001$ ). Only 20.2% of IVHR procedures were performed as day surgery. Conclusions: Australia has seen a significant increase in IVHR operations performed in the last 20 years, particularly those for primary ventral hernias. IVHR for hernias complicated by incarceration, obstruction, and strangulation also increased significantly. The proportion of IVHR operations performed as day surgery is well below the target set by the Royal Australasian College of Surgeons. With the increasing incidence of IVHR operations and an increasing proportion of these being emergent, elective IVHR should be performed as day surgery when it is safe.

**Keywords :** ventral, incisional, hernia, trends

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