Paratuberculosis or Johne's disease (JD), a chronic enteric disease of ruminants caused by Mycobacterium avium subsp. paratuberculosis (MAP), causes considerable economic losses to the livestock industries. However, the financial impact of OJD in sheep at slaughter has not been previously investigated and as such, there is a need to quantify the magnitude of this loss, identify the direct and indirect costs of OJD and investigate the relationship between the OJD on-farm status with the carcase quality and economic cost caused by this condition. This project, which was considered a pilot study, provides a conceptual framework for estimating the costs of OJD incurred during animal processing and identifying the different components of these costs. The aim of the project was to estimate the financial loss due to OJD to producers and processors in Tasmania in sheep (>=2 years old) identified during the slaughter process and to investigate potential associations between the severity of the carcase lesions with estimated OJD on-farm status, carcase quality and economic cost of the disease.

Data on different disease conditions, including OJD and OJD vaccination lesions, were collected during two periods of time; the first one from the 14th of May to the 18th of June 2012 and the second from 16th of November 2012 to 27th of March 2013. In addition, a component of this research project included a telephone survey on producer attitudes and management practices in relation to OJD. This social research component aimed to broaden understanding of the role of the abattoir in promoting awareness and changes to sheep management to reduce the impact of disease for the producer and the processor.

Data from 358 consignments and 31,858 individual carcases were collected. Six mutton consignments were OJD positive, with a median apparent within consignment prevalence of 4.6% (5-95%, 3.5% -16.1%). Forty-seven consignments had OJD vaccination lesions, with a 3.0% (0.40% – 17.6%) median proportion of carcases with lesions. The mean carcase weight, value, fat class, slaughtering time and skin price per consignment were not associated with the presence of OJD, OJD vaccination lesions and the proportion of lesions within consignment. The individual carcase weight was associated with the presence of OJD vaccination lesions (p = 0.008). The median proportion of total consignment weight trimmed due to OJD vaccination lesions was 0.03% (0 – 0.73) with a mean of
0.18%. Interpretation of results obtained is difficult due to the lack of available data on OJD positive consignments. The potential reasons for this reduction in OJD presence among mutton consignments in comparison with previous years could be due to various factors. Results from the retrospective data contrast with results obtained with data from the current study, and suggest that there is a potential economic impact of OJD presence on the processing sector and returns to farmers. More detailed analysis of retrospective data from this abattoir and others could provide more evidence of this potential impact.

Results from the qualitative study indicate that receiving feedback directly from the abattoir on a range of animal health conditions was valued by the producers interviewed for this project. In addition, how the feedback was provided was suitable for most producers, although TQM could consider some modifications to aspects of the information and the use of alternative communication technologies. In most cases, farmers responded that feedback did result in changes in management practices related to OJD control.

The data collected in this study were not appropriate to examine the impacts of the presence of OJD on processing, due to the limited number of OJD positive consignments. In order to accurately estimate the direct and indirect costs of OJD at processing level, more comprehensive data from a larger number of OJD positive consignments, which would allow representative comparisons. Data from multiple abattoirs within a region would be more appropriate to estimate these costs. In addition, data should incorporate detail in relation to skin price and intestine condition in relation to the presence of OJD. Examination of change in farmer decisions in relation to disease control and culling protocols and in response to market feedback, is required to better understand the impact of OJD on animals presented for slaughter. The current study suggests that abattoir feedback might result in management changes. However, further investigation is required to validate this result and identify adequate strategies.