

## CASE STUDY

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# Payroll Recalculation Case study

### Background

A healthcare organisation with over 400 nurses have calculated the payroll award improperly for three years due to human error.

### Problem

If an employee works two regular shifts and the time difference is less than eight hours between the two, overtime is payable on the second shift.

Some nurses' shifts have been moved by a few minutes by the supervisor hence the time difference became eight hours and a few minutes which resulted in the nurses not having received their overtime payment which is not considered right.

The organisation planned to check and recalculate each shift for each nurse which would have been tens of thousands of shifts to check manually. The overtime calculations were also complex therefore the manual checking was not a viable option.

### Solution

Team Brookvale offered to write a computer program based model mainly in SQL server that addresses the issues above and identifies modified shifts that should have been eligible for the overtime payment on the second shift according to the award and calculates the outstanding overtime payable for all nurses along the three year period.

With the computer based model we could run the overtime recalculation for each and every shift in one minute. This made possible performing the recalculation as many times as we wanted and sample testing our results easily. We found that around one thousand shifts were underpaid.

We handled over the outstanding overtime dollar value for each shift to the client. The client performed sample checking of our results and came back to us with the shifts where their calculations were different. At this validation stage we recognised that some new rules needed to be added to our model i.e. overtime rates may change during the shift if a nurse works through midnight.

We have performed around five iterations with the client and by then all outstanding overtime calculations that the client sampled and recalculated manually were matching to

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ours.

### **Outcome**

All nurses have received their outstanding overtime payments based on our model.

### **Benefit**

The manual recalculation could have taken anything between a few hundred to a few thousand hours whereas the computer based calculation took less than two hundred hours.

The manual recalculation inevitably would have introduced miscalculations and human errors that are less likely to happen with a well-tested computer based model. Once the model is built we can re-apply it next year with little effort.

In summary the data analytics approach proved to be cheaper, faster, more accurate and repeatable compared to manually performing the payroll recalculation.