

During each 6-hour period of the day, a hospital in Alice Springs, Northern Territory, needs at least the number of nurses shown in the table below. The nurses can be hired to work either 12 consecutive hours or 18 consecutive hours. Nurses are paid \$25 per hour for each of the first 12 hours a day they work and are paid \$37 per hour for each of the next 6 hours they work in a day.

PART A: Formulate an LP that can be used to minimize the cost of meeting the hospital's requirements, and solve the problem with Excel (using add-in Solver).

Adapted from "Operation Research: Applications and Algorithms" by W.L.Winston

Time period	N of nurses
12am – 6am	12
6am – 12pm	8
12pm – 6pm	6
6pm – 12am	15

PART B: Assume a new roster is being planned that will implement your solution from Part A and you are consulting with Indigenous communities who may be impacted by the change about suitable levels of support and medical services for the Health Centre. In your report, explain:

- the principles of ethical engagement with Indigenous Australian peoples and communities; and
- how the principles apply in this situation.