

A guide to maternity costs and why small units have higher costs

Dr Rod Jones (ACMA, CGMA)
Statistical Advisor
Healthcare Analysis & Forecasting
Camberley, UK
hcaf_rod@yahoo.co.uk

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Abstract

In a time of international health care austerity the costs of running a maternity unit are under increasing scrutiny. Economy of scale is shown to be central in understanding why smaller units cost more to run than larger ones. Awareness of the role of economy of scale in maternity costs can be traced back to the 1930's. In England, the Department of Health (DH) has insisted for many years that economy of scale is not a key factor in the tariff of services by which hospitals are paid for various activities. However, economy of scale can be clearly seen in maternity costs in England and elsewhere and this reality has led to a situation where smaller units have been subject to unjustified cost pressures while larger units have reaped undeserved profits. The situation has been partly obscured by exceedingly poor costing of maternity services, a situation which the DH appeared to leave untouched. Midwives are urged to become involved in the costing process at their hospital and to lobby the DH to address this unsatisfactory situation.

Key Points

- Small maternity units suffer from unavoidable higher costs due to what is known as economy of scale
- Economy of scale in maternity costs has been recognised since the 1930's
- The costs submitted by NHS maternity units shows clear evidence for economy of scale
- The Department of Health (England) has insisted that economy of scale does not affect the HRG tariff and this has resulted in undeserved hardship for smaller units and unmerited profits for larger units
- Sources of error in local costs are discussed and midwives must be involved in the costing process
- All concerned need to lobby the Department of Health to resolve this critical issue
- it would seem that this is a somewhat salutary lesson in the difficulty of translating government policy objectives into workable solutions, especially, when reality is 'inconvenient' to the policy.

Introduction

Many of you are no doubt familiar with the following scenario; the finance department is claiming that costs in the maternity department are too high and heads (and beds) have to roll. Before proceeding to disembowel a perfectly functional maternity department you need to understand some basics of maternity costs and the typical costing errors which could lead to costs appearing to be high when in fact they are not.

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What is Economy of Scale?

A recent article has described the contribution of the Erlang equation to understanding the relationship between the size of a maternity unit, the average occupancy and the need to have an available bed for the next arriving mother (Jones 2012a). It is the uncertainty in the demand, i.e. volatility in the number of arrivals from one day to the next, which sets the occupancy margin and hence the economies of scale that can be achieved in any health care setting (Baker et al 1999). Economy of scale means that it costs more to deliver the same standard of service in a smaller unit than a larger one. In other words, the average occupancy is set by size and not by efficiency. The concept of economy of scale in hospital costs in general and maternity costs in particular are not new and Perkins (1993) details relevant studies in the USA dating back to the 1930's. In 1963 Thompson & Fetter published a comprehensive study on the role of economy of scale in maternity costs including references dating back to the 1940's. A further study in 1967 investigated the role of peak loading and regional coordination in maternity services and costs (Long & Feldstein 1967) while in 1975 a sophisticated model based on queuing theory (the basis of economy of scale) and patient flow assessed the cost benefits of regional planning for the location and size of maternity units (Geller & Yochmowitz 1975). Clearly from a historical perspective the role of economy of scale in maternity costs has been well recognised for many years.

Article continues

Economy of Scale and the Tariff

NHS Reference Costs

What needs to be done?

Correct counting

A good solution

Conclusion

References

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Figure 1: Costs for normal and assisted deliveries

Figure 2: Capital costs (building and equipment) per delivery for different sized maternity units.

Figure 3: Evidence for gross errors in costing of maternity services

Figure 4: Ratio of total maternity 'admissions' per delivery at different NHS Trusts.

Figure 5: Total maternity costs

Table 1: Average cost per delivery (2009/10 reference costs, England)