6.F. The patient trajectory

Proximity vs quality. Access to health services on the example of EBRT hospital deliveries in Poland

Barbara Więckowska

BA Więckowska*, A Czerwiński*

1Warsaw School of Economics, Department of Social Insurance, Warsaw, Poland
2Ministry of Health, Warsaw, Poland
Contact: b.wiecekowska@mz.gov.pl

Background
One of the aspects of broadly understood quality of healthcare services is their accessibility, which is often dependent on the distance to provider. Often long distances result in under-utilisation. On the other hand, dispersion of providers means the reduction of hospital volume, which in turn could lead to decreased quality. Every institutional decision regarding the distribution of providers has to account for this trade-off between proximity and quality. We investigated this problem in cases of EBRT and deliveries.

Methods
Correlation analysis between the distance and utilisation was performed with respect to EBRT. Similar analysis was conducted between hospital volume and quality indicators in case of deliveries. Two separate location models were formulated based on correlation analyses, previous works, and expert opinions. Model for EBRT (mixed-integer programming) was aimed at decentralising the services, while the model for deliveries (preferential voting) assumed the reduction of the number of providers.

Results
The negative relation between distance and utilization of EBRT is clearly visible in Poland, as is the correlation between hospital volume and outcome measures in case of deliveries. The linear programming problem for EBRT indicated that at least 18 new RT facilities should be established in Poland by 2025. The preferential voting model for deliveries indicated that by 2020 only 3 out of every 4 providers could function in order to meet the assumed 400 deliveries requirement.

Conclusions
When faced with the problem of finding the optimal provider locations a trade-off between proximity and quality has to be examined. In certain cases, like in the case of EBRT in Poland, decentralisation could be favourable to concentration. In other areas, like in the case of deliveries, preferred actions could be opposite. Both model results were incorporated into healthcare needs maps for Poland and are to serve as development plans in their respective fields.

Key messages:
- While assuring accessibility to healthcare services (in terms of dispersion of providers) a possible trade-off between hospital volume and quality should be taken into consideration.
- Finding the optimal provider locations can be achieved using mathematical modelling, reliable data and boundary conditions determined by medical experts.