

FORECAST OF HEALTHCARE FACILITIES AND HEALTHCARE WORKFORCE IN ONCOLOGY FIELD IN INDONESIA

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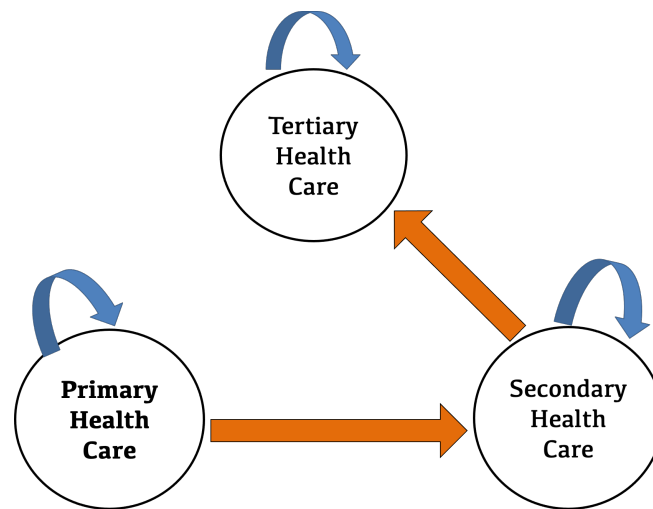
BACKGROUND AND OBJECTIVE

Indonesia, while implementing the universal health coverage (UHC), is concurrently facing the growing burden of cancer. The Basic Health Research shows the increasing cancer prevalence up to 28% in the 5-year period from 2013 to 2018. Unfortunately, more than 70% cancer patients are diagnosed at latter stage, resulting in higher financial burden and low survival rates. A sufficient number of healthcare facilities and healthcare workforce is needed to deliver a comprehensive cancer service to achieve a successful UHC and to support cancer control planning in addressing these issues. However, the shortage of healthcare workforce and facilities in oncology field still become a major threat in Indonesia. The available facilities and HRH still do not meet the population need and the international benchmark. Moreover, to date, there is no formal guideline available regarding the forecasting of facilities and workforce-related oncology. We, therefore, tried new method using Markov model to model the healthcare facilities needed and translated it into year-by-year health workforce in requirements for cancer service to ensure an effective cancer control planning in Indonesia.

METHODS

A Markov model was carried out to predict the number of healthcare facilities needed for cancer service in Indonesia, then translated into oncology workforce requirements using the national standard norm. The one-year cycle length with a 11 year-time horizon were used in the model. The cost (salaries) implications of the projected staff requirements were also calculated.

Figure 1. Markov Model



Source: Authors' construction

RESULTS

The model indicates the need to increase the number and/or capacity of health facilities to enable comprehensive cancer services for effective cancer control in Indonesia. The oncology workforce shortage is estimated to be about 61% of the need and is even more severe among oncologists. The government will need to increase nearly 50% of current wage spending to meet this gap.

However, although this model shows that Markov model can contribute to a new area in health workforce planning or forecasting, the forecast should continuously be improved and can be updated periodically if and when more accurate data are available. Given all the assumptions used, data and time constraints, and model limitations, we must be careful when using or interpreting these forecasts that these forecasts are not always be the representative of overall picture for Indonesia's oncology services and health system.

CONCLUSION

Indonesia needs to expand the number of healthcare facilities and takes into account the serious shortage of oncology workforce. Addressing these issues may require a substantial increase in government spending on health workforce salaries. While long-term commitment to comprehensively address these challenges is pursued, the immediate steps such as educating and recruiting staff, improving health workforce productivity and ensuring the equitable distribution of the existing workforce might need to be taken.

This model shows that Markov model can contribute to a new area in health workforce planning or forecasting.

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REFERENCES

1. Ministry of Health of the Republic of Indonesia. (2019a) *Indonesia Health Profile 2019*. Jakarta: Ministry of Health. Available at: https://www.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2019.pdf. (Accessed: 10 September 2020).
2. National Cancer Control Committee. (2015) *Guideline for Cancer Service Management in Healthcare Facilities/Panduan Penyelenggaraan Pelayanan Kanker di Fasilitas Pelayanan Kesehatan*. Jakarta: Ministry of Health.
3. Asamani, J., Chebere, M., Barton, P., D’Almeida, S., Odame, E., Oppong, R. (2018) ‘Forecast of Healthcare Facilities and Health Workforce Requirements for the Public Sector in Ghana, 2016–2026’, *International Journal of Health Policy and Management*, 7(11), pp. 1040-1052. doi: 10.15171/ijhpm.2018.64.
4. Indonesian Radiation Oncology Society/IROS. (2019). *Basic Survey*. IROS database. (Accessed: 10 September 2020)
5. Ministry of Health of the Republic of Indonesia. (2019b). *Ministry of Health Regulation No.30/2019 about Hospital Classification and Licensing*. Jakarta: Ministry of Health