

## Propositions belonging to the thesis

### Modeling of Prostate Cancer Screening: The future directions

1. Simulation modeling can play crucial roles by providing insight about the longterm benefits and harms of (prostate) cancer screening and allowing comparisons of multiple screening strategies, which are often difficult or impossible to get from randomized controlled trials and observational studies. (This thesis)
2. Prostate cancer screening can be cost-effective at a population level, provided that a maximum of 4 tests are conducted between ages 55 to 64 with 3-year intervals. (This thesis)
3. Selection of men suspicious with prostate cancer for biopsy using a multi parametric magnetic resonance imaging (mpMRI) test and performing an MRI-guided biopsy can substantially reduce the risks of overdiagnosis and improve the harmbenefit balance. (This thesis)
4. Using mpMRI as a triage test after a positive PSA test followed by an MR-guided biopsy has a high probability to be more cost-effective as compared to the regular prostate cancer screening strategy. (This thesis)
5. Prostate cancer risk calculators need to incorporate long-term benefits and harms of prostate cancer screening, apart from predicting the probability of having the disease. (This thesis)
6. Hand pattern might represent a simple marker for prostate cancer risk. (A.A. Rahman, et al. BJC, 2014)
7. Successful public health interventions require the cooperation of human, animal, and environmental health partners: even non-communicable diseases can benefit from this One Health approach. (CDC, 2018)
8. Artificial intelligence can lead to more accurate and rapid diagnoses of cancer, and improve clinical decision-making. (NIH, 2020)
9. Catching up on the delayed cancer screening activity due to the COVID-19 pandemic would result in the smallest effects on cancer incidence and cancer-specific mortality. However, this restart strategy requires a very high screening capacity in a short time period. (Kregting, L.M. et al. *Br J Cancer*, 2020).
10. The best way to predict the future is to create it (Attributed to Abraham Lincoln)
11. To affect the quality of the day, that is the highest of arts (Henry David Thoreau).

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