Workforce planning for eye services in Singapore

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INTRODUCTION

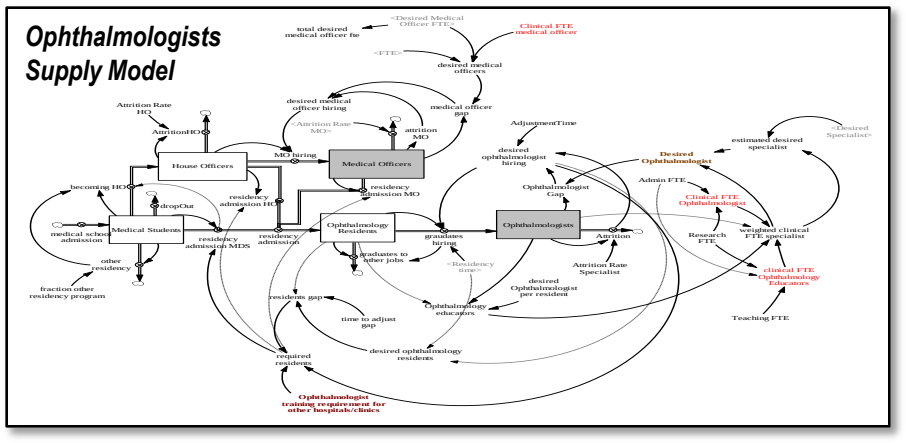
- Singapore is aging rapidly – in 2050, 31% of the population will be 65+.
- prevalence of eye disease increases among the elderly. Hence, eye service burden in Singapore is projected to increase substantially by 2040.
- To provide eye care services, accurate projections of disease burden and resource need is required.
- A dynamic simulation model was developed to project future eye care visits and workforce requirements under different scenarios.

DATA

- Administrative patient service data (SNEC)
- Singapore Epidemiology of Eye Disease (SEED) Study (SERI)
- Extensive discussions with ophthalmologists, healthcare planners, and expert estimates.

METHOD

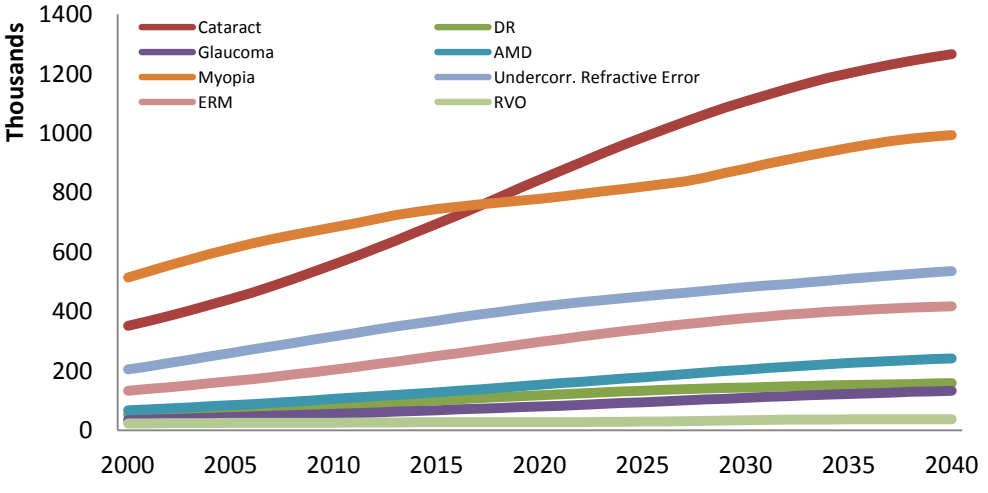
- To project future prevalence of eye diseases, age and ethnicity-specific prevalence data from the SEED study were applied to a simulation of the future population.
- A simulation model was developed to project the number of future eye care visits, the number of eye care professionals and ophthalmology training places required to meet this demand under different scenarios.



RESULTS: BURDEN OF DISEASE

By 2040 (compared to 2014):

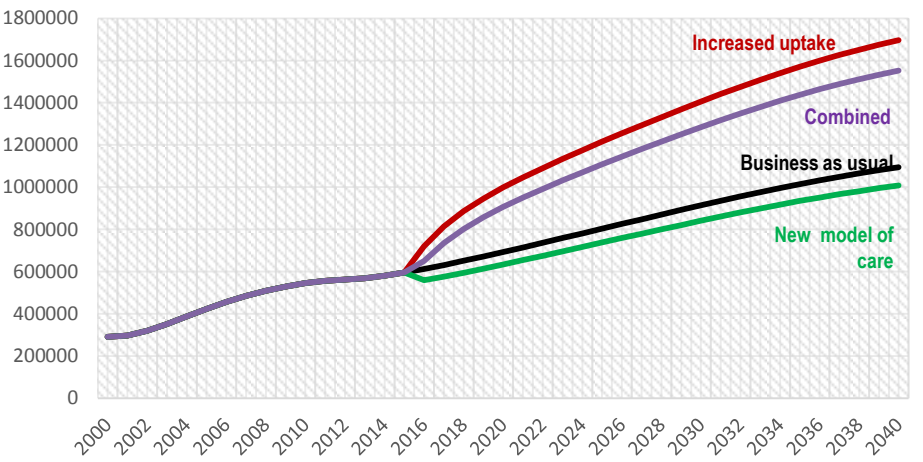
- No. of people who ever had a cataract will increase >90%
- No. of people with glaucoma or age-related macular degeneration will increase >104%
- No. of people with diabetic retinopathy will increase by about 63%.



FUTURE SCENARIOS: EYECARE VISITS

We compared 4 different future scenarios for eye care visits:

1. Business as usual: Future eye care visits based on current prevalence and population growth rates.
2. Increased uptake: Eye service uptake rate doubles (e.g. due to increased awareness, changes in cost/accessibility or more widespread screening)
3. New model of care: Implementation of integrated eye care model, where 20% of DR and glaucoma cases, and 90% of refractive error cases/myopia are decanted to Primary Eye Care Clinics.
4. New model of care *with* increased uptake.



FUTURE WORKFORCE NEEDS

- Under the business as usual scenario the eye care workforce needs to be more than doubled.
- The workforce requirements increase substantially with an increased uptake rate.
- Changes in the model of care lead only to slight decrease in requirements (assuming there is no change in uptake rate).

Workforce	Base case		Increased uptake scenario		New model of care scenario		Combined scenario	
	2020	2040	2020	2040	2020	2040	2020	2040
Ophthalmologists	162	255	233	396	148	235	211	362
Medical Officers	40	64	58	99	37	59	53	91
Optometrists	58	92	84	142	53	84	76	130
Registered Nurses	280	442	404	686	256	407	366	628
Enrolled Nurses	125	198	181	307	115	182	164	281
Technicians	53	84	76	130	49	77	69	119
Ophthalmic Assistants	100	157	144	244	91	145	130	224

DISCUSSION

- Alternative models of care delivery and service uptake will modify these workforce requirements in the future.
- Due to the large, currently untreated eye disease burden, changes in the uptake rate can easily overwhelm the current system.
- Interventions which might change uptake rate require pro-active increase in training to meet anticipated demand of ophthalmologists as training takes 5 years.