



## PREVENTIVE MEDICINE – A Resident's Journey

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As I progress into my final year of residency, I look back upon my journey over the last five years and reflect on what public health and preventive medicine mean to me.

### The first step

*"One mile wide, half a mile deep"*

I heard this profound quote on my first day of residency. It was part of the welcome speech delivered by Prof Chia Kee Seng, who was then the dean of the Saw Swee Hock School of Public Health. The quote serves as a reminder of what it takes to be a Preventive Medicine specialist – a physician who deals with patients at the population level, rather than at the individual level.

Despite the specialist title, physicians in this field are, at its core, generalists. In a world where health problems are dynamic and potentially limitless, the knowledge

and skillset required to connect the dots and to weave in context with the broader fabric of understanding must cover a wide array of disciplines within and outside of Medicine. However, to be able to create meaningful impact on healthcare, "knowing a little bit about a lot" may not be the right way to go. In fact, innovative healthcare solutions often demand proficiency in the use of multiple devices in the toolbox as a prerequisite – one mile wide, half a mile deep.

### The journey called residency

The formal training pathway that leads to a Preventive Medicine specialist accreditation in Singapore is provided through the National Preventive Medicine Residency Programme, with National University Health System (NUHS) acting as the sponsoring institution.

The first three years serve as a foundation for each resident's public health knowledge and skills armamentarium. Knowledge expansion is primarily achieved through structured academic work (leading to a Master of Public Health [MPH]), while clinical and non-clinical rotations function to reinforce, apply and translate learned knowledge into practice. Residents further deepen their knowledge and skills by selecting an area of specialisation at the beginning of the fourth year. The four areas offered are: 1) Disease Control and Epidemiology, 2) Health Policy and Administration, 3) Health Services Research, and 4) Occupational and Environmental Medicine. Upon completion of the programme, residents would be granted a specialist credential. Given the vastness of the public health field, Preventive Medicine specialists take diverse career paths but, in general, practise a similar set of skills to their counterparts.

Daily work routines vary between residents and rotation sites. Residents' duties in the Occupational Medicine track remain mostly clinical, with preventive components incorporated into practice through workplace and worker safety and health programmes. Epidemiologists are disease-outbreak gatekeepers whose surveillance, analytical and investigational capabilities are applied to detect and contain disease outbreaks, and to concurrently prevent future recurrences. Residents in the Health Policy and Administration track (like me) strive to develop policies and regulations to effectively manage the challenges the healthcare industry faces. The bulk of my work responsibilities is within the realm of Regulatory Science – a specific discipline that deals with the quality, efficacy and safety of pharmaceutical drugs and medical devices.

As one can imagine, without rigorous checks and processes in place, any Tom, Dick and Harry would be able to brew potions using unknown ingredients in a dodgy laboratory, claim their grandiose medical benefits and sell them to the unsuspecting public. Preventing this from happening is the job of national regulatory agencies, like the Health Sciences Authority in Singapore. But where does a Preventive Medicine resident fit into this?

Despite the immense resources and efforts placed on ensuring a regulatory agency's regulatory capacity, it is still far from optimum. With the growth of the pharmaceutical and medical devices industry, the number of products that regulatory agencies need to handle also increases. To add another layer of complexity to the problem, the introduction of innovative products with biological properties that are inherently different from the traditional drugs, demands better expertise and regulatory requirements above and beyond the current regulations that are in place to uphold public health safety. While this vignette is, by all means, a gross oversimplification, it helps to illustrate some externalities that can render a previously effectual regulatory process inept. In this situation, a Preventive Medicine resident can systematically appraise the situation and formulate a cost-conscious multi-pronged mitigation strategy. The strategy may target internal processes (eg, workflow streamlining, prioritisation strategies and incorporation of innovative technology), current regulations (eg, creation of new regulatory frameworks), or external parties (eg, cooperation with other regulatory bodies and early communication with drug developers).

While medical training in Singapore continues to be overwhelmingly clinical, it is not lost on me that there

are conscious efforts to introduce public health elements in the medical school curriculum. While the jury is still out on the utility of this early introduction, a vast majority of students will have to deal with public health issues at some point in their medical career – regardless of whether they are Preventive Medicine specialists or not.

“How can the number of hospital readmissions be reduced? How to attend to more patients in a shorter period? How to prevent falls in nursing homes?” – Guess what? These are public health issues that clinicians often have to deal with in their practice. Most clinicians will be confronted with a public health problem at some point in their careers, leading to them practising preventive medicine (whether they like it or not). There are many ways to be an excellent Preventive Medicine practitioner; getting formal residency training or an MPH degree is not the only road that leads to this destination. The knowledge and skills of public health can be obtained through work and research experience, and even mentorship. If one prefers a more structured approach, a Specialists Accreditation Board-approved scheme also exists to provide training for clinical specialists to obtain a Public Health Specialist accreditation in addition to their original clinical speciality.

### Ending note

Good solutions to public health problems are not easy to find, regardless of whether one has had formal training in this field or otherwise. However, if solved well, the impact on the population at large is usually immense.

I end this passage with words of encouragement from Mr Barack Obama: “If you're walking down the right path and you're willing to keep walking, eventually you'll make progress.” ♦