

REFLECTIONS ON PRACTICE

## Musings From an Inaugural Bachelor of Pharmacy Curriculum: Teaching of Health Advocacy via Integration of Topics

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## ABSTRACT

The National University of Singapore (NUS) Department of Pharmacy aims to transform its undergraduate programme to calibrate to a rapidly evolving healthcare system. Health advocacy is an important competency of the new curriculum, to which curriculum integration forms the theoretical basis of how this can be met. In AY2020/21, 150 students were matriculated into the Department's B.Pharm programme. Each student was asked two questions, both during the orientation and after the final examinations of Year 1. They were asked about their own definition of health advocacy and what a pharmacist could do to engage in health advocacy. Interview invitations were also sent. A total of 215 (72%) responses to the two questions resulted in the pre-survey, with 126 (42%) responses in the post-survey, and five students agreeing to the interview. The pre- and post-survey results were analysed using the overall evaluation model proposed by Westheimer (2003) to test the student's internalisation. The four levels were: Level 1's 'Understanding Pharmacist', Level 2's 'Personally Responsible Pharmacist', Level 3's 'Participatory Pharmacist', and Level 4's 'Justice-oriented Pharmacist'. While there was no significant difference between the four levels ( $p=0.77$ ), a greater consolidation of health advocacy concepts was seen, with students understanding the responsibility of pharmacists in the medical field, and that they must be knowledgeable to uphold that accountability to patients. However, these Year 1 students had expressed self-doubt that pharmacists could contribute to larger and greater societal good. Besides integration in the curriculum, more should be done to showcase explicit examples of professional pharmacists promoting health advocacy as routine practice.

**Keywords:** Pharmacy, curriculum design, health advocacy, integration

## BACKGROUND

There is increasing evidence showing that to improve the health of an individual or population, upstream causes of health inequity must be considered in addition to the originating medical problems (Gehlert, 2008). Health advocacy is an intentional and intrinsic action taken to address this need. However, this remains a perplexing domain of professional healthcare education to teach. A challenge is the perception of health advocacy as being outside a healthcare provider's scope of practice (Ivory, 2013). Furthermore, few pharmacists actually actively advocate for health, due to a lack of awareness of this role. (Palombi, 2013)

The National University of Singapore (NUS) Department of Pharmacy aims to transform its undergraduate programme to calibrate to a rapidly evolving healthcare system. The CanMEDS competence-based education framework, as adapted by the Association of Faculties of Pharmacy of Canada, offers the expected competencies of a pharmacist. Health advocacy is one of these expected competencies. (Kellar, 2017)

Curriculum integration forms the theoretical basis of how the health advocacy competency can be met (Gonzalo, 2017). The traditional curriculum, with standalone public health modules, was problematic as students may not connect the meaning of the basic, theoretical science obtained from these standalone modules to their clinical practice with patients. Students also lack the broad perspective mindset needed to function in complex health systems (Berwick, 2010; Gonzalo, 2014). Therefore, integration seeks to reframe the traditionally separately taught pillars of basic and clinical science, into an interdependent three-pillar framework of basic, clinical, and systems sciences (Gonzalo, 2017). It is hypothesised that by integrating health advocacy concepts across basic, clinical, and systems sciences and spiralled in increasing complexity throughout all four years of the programme, the intrinsic and systematic role of health advocacy can be internalised.

## WHAT WAS DONE

For AY2020/21, NUS Pharmacy welcomed its inaugural batch of B. Pharm students in August 2020. The pharmacy modules involved in Year 1: PR1150 "Professional Identity Development I", PR1151 "Applied Patient Care Skills I", PR1153 "Pharmacy Foundations: Science & Therapeutics II", and PR2156 "Integumentary & Ocular Systems" (Figure 1) were used as a vehicle for integration between basic, clinical, and systems sciences. In general, physiological systems will be used as an anchoring point, around which basic, clinical, and systems sciences will be introduced as an interdependent concept. An example included introducing the health advocacy concept that rising drugs prices is a driver for healthcare costs (basic science), using the topic of expensive but efficacious biologics use (systems science as part of cost-effectiveness of drugs and formulary) as part of the treatment options for psoriasis (clinical science) in PR2156 "Integumentary & Ocular Systems" (physiological system). Concepts will be spiralled up for later years.

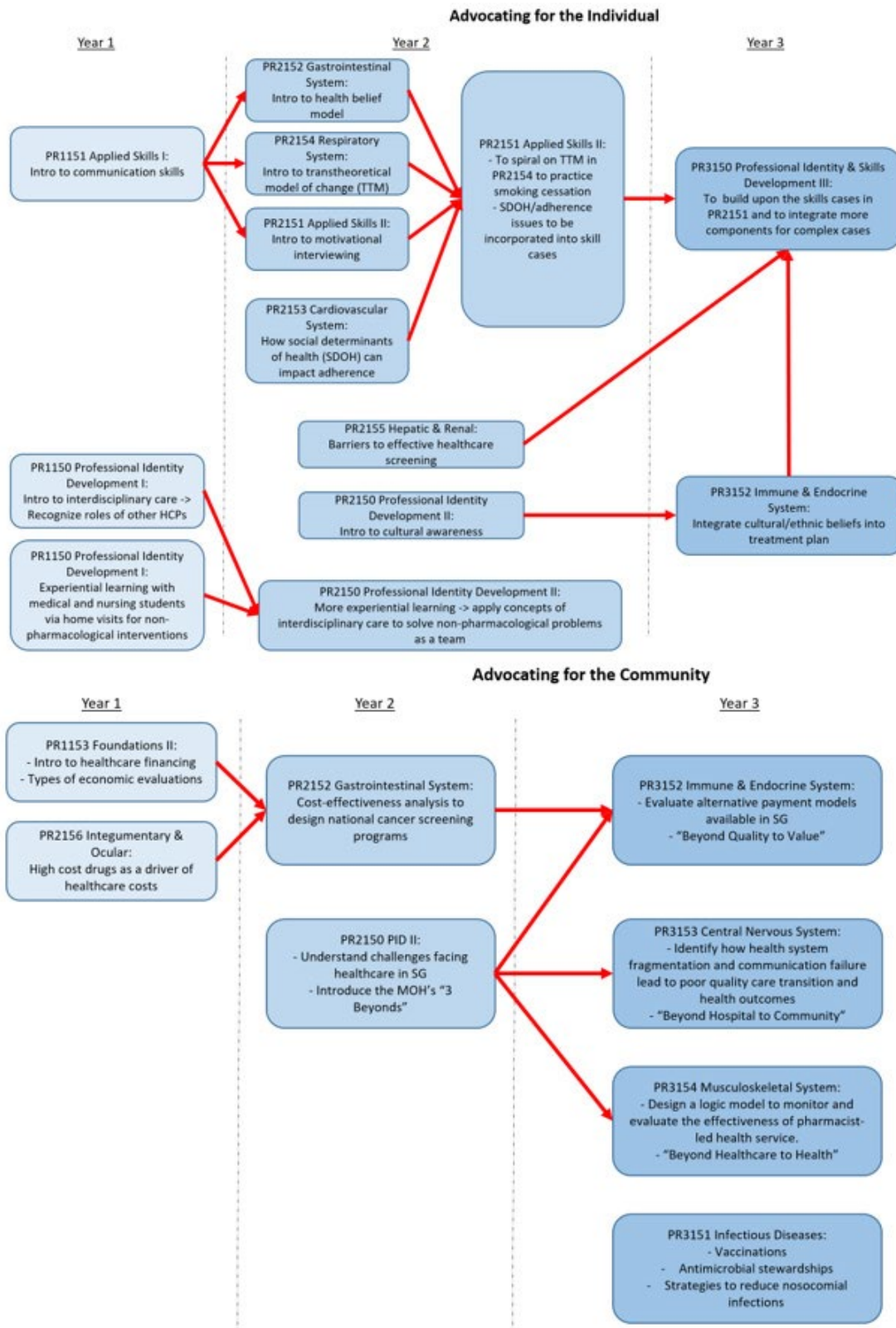


Figure 1. Integration nodes throughout the B.Pharm curriculum.

After Year 1 students had completed the curriculum, we sought feedback from them. We wanted to examine how their understanding of “health advocacy” has changed within the year, and from there to inform further ways in which “health advocacy” could be integrated and developed for subsequent years. This research protocol was approved by the NUS Learning and Analytics Committee on Ethics (LACE).

## FEEDBACK GATHERED FROM STUDENTS

For the Year 1 student cohort ( $n=150$ ), each student was asked the same two questions twice, during the orientation and after the last final examination of Year 1. They were asked about their own definition of health advocacy and what a pharmacist could do to engage in health advocacy. In addition, after the post-survey, we sent out interview invitations to the whole class, to participate in a Zoom interview to find out more about their thoughts. A total of 215 (72%) responses to the two questions resulted in the pre-survey, with 126 (42%) responses in the post-survey, and five students agreeing to the Zoom interview.

The overall evaluation framework for assessing the pre- and post-surveys' level of intrinsic internalisation of health advocacy was an adaptation of the model proposed by Westheimer (2003). The levels had been predetermined based on a spiralling approach—'Understanding Pharmacist' in Level 1, 'Personally Responsible Pharmacist' in Level 2, 'Participatory Pharmacist' in Level 3, and 'Justice-oriented Pharmacist' in Level 4.

In Level 1 'Understanding Pharmacist', the criteria were understanding what health advocacy means and why is it necessary. In Level 2 'Personally Responsible Pharmacist', the criteria were contributing to society by advocating for the individual. In Level 3 'Participatory Pharmacist', the criteria were organising for society by advocating for the community. Lastly, in Level 4 'Justice-oriented Pharmacist', the criteria were solving root causes for society by creating new ideas to resolve fundamental public health problems. The results were as follows, with no significant difference between the four levels using Chi-square Test ( $p=0.77$ ). (Table 1)

Table 1.

*Analysis of students' written responses to survey questions on their views of health advocacy*

Level of Internalisation	Description	Core assumptions	Sample action	Pre - survey	Post-survey
Level 1: Understanding Pharmacist	Understanding what health advocacy means and why is it necessary.	Aware that pharmacists need to advocate for health as a healthcare provider.	Aware that a food drive is beneficial to the people.	16 (7.4%)	7 (5.5%)
Level 2: <u>Personally Responsible Pharmacist</u>	Contributing to society, by advocating for the individual.	Pharmacists need to be socially responsible providers, and volunteers help to their patients in times of need.	Contributes food to a food drive	192 (89.3%)	116 (92.1%)
Level 3: Participatory Pharmacist	Organising for society, by advocating for the community.	To advocate for health, pharmacists need to actively participate, organise efforts and take leadership positions within established systems and community structures.	Helps to organize a food drive	6 (2.8%)	2 (1.6%)
Level 4: Justice-oriented Pharmacist	Solving root causes for society, by creating new ideas to resolve fundamental public health problems.	Critically assesses social, political, and economic structures to see beyond surface causes. Seeks out and addresses areas of injustice. Pharmacists to question, debate, and change established systems and structures that reproduce patterns of injustice over time.	Explores why people are hungry and acts to solve root causes	1 (0.5%)	1 (0.8%)
Total number of completed answers				215	126

As there was no significant difference detected based on the pre-determined levels (Table 1), deeper thematic analysis of the responses was conducted to determine if any additional patterns could be elicited. We had found greater consistency and more consolidated forms of thinking in the post-survey compared to the pre- (Table 2). This trend can be attributed by findings from the interviews (examples shown in Figures 1 to 3, in italics) which demonstrated that the new integrated pharmacy curriculum, inspiring lecturers, and practical activities such as visits to real-life patients are the major contributing factors of the deepening of health advocacy understanding, which led to the consolidation in ideas.

Table 2.

*Further thematic analysis of the students' responses*

Popular Themes	Description	Pre-survey	Post-survey	P-value
1. Promote health	The responses that include "promote health/health advocacy/healthy activities/etc."	73 (34%)	51 (40.5%)	0.23
2. Non- pharmacological approach	The responses that mention "non-pharmacological approach"	8 (3.7%)	13 (10.3%)	0.014
3. Be knowledgeable/ to be able to advise/counsel patients	The responses of students who believe that pharmacists should be knowledgeable to make sure that they can advise/counsel their patients well	23 (10.7%)	30 (23.8%)	0.0013

*"I think it's mainly joining through the whole year, going through the curriculum, especially 1150, I guess, for lots of perspective, what we can do as specifically as health care professionals, how we can advocate for health, and also I also appreciate that like Dr A and Dr B actually really ... I don't know whether passionate is the right word, but I guess they really enjoy talking about it and you know they really lead by example."*

*"S: There's this virtual befriending thing that I signed up for, so it's actually we get to interact with some elderly and then we get to advocate to them about health, yeah, so we talk to them and then learn more about their conditions.*

*I: Did that activity change your understanding of health advocacy or did it, to some extent, make you want to learn about health advocacy more?*

*S: Yes, I would say yes. It triggered that, like spark, I don't know. Yeah, it just made me feel like I want to do this more."*

*Figure 2. Findings from interviews with students.*

Additionally, the theme with the greatest increase in the post-survey was students believing that they must be knowledgeable, in order to advocate through counselling and advising (Table 2). This was supported by the interviews in which the students stated their belief that pharmacists hold positions of medical importance in society due to the fact that they prescribe medication and oversee dispensing of drugs (Figures 2 and 3). In holding these positions of importance, they must be aware of their responsibilities as healthcare practitioners, given their direct impact on citizens' health.

*"I think pharmacists naturally do play a role in actually promoting to the public about upkeep of health. [...] our role is like medication experts [...]"*

*"So what roles pharmacists play... I think the first important thing for health advocacy is the appropriate use of medications, we teach them or educate them on how to appropriately use that medication."*

*Figure 3. Findings from interviews with students in which they state their belief of pharmacists' importance and impact in society as healthcare practitioners.*

Responses coded as higher-level ('participatory' and 'justice oriented') showed little to negligible change from the pre- and post-survey. Based on the interviews, this may be attributed to students' self-appraisal of a lack of freedom, autonomy to participate in civic activity or struggle to make bigger impact on the lives of others in their capacity as pharmacists (Figure 4). Simply put, there is a lack of belief that pharmacists could contribute to bigger societal movements or changes.

*"I hope more responsibility can be given to pharmacists to really exert their role as health advocates in the society."*

*"I hope that the ministry gives us more freedom and responsibility to advocate for health."*

*"So like maybe pharmacists will have a bigger role in health advocacy and in primary care."*

*Figure 4. Findings from interviews with students in which they express hope that pharmacists can make a bigger impact on the lives of others as healthcare practitioners.*

## **ACTION PLAN MOVING FORWARD IN YEARS 2 to 4**

There is a clear need for students to feel that they are empowered to make bigger and tangible changes as pharmacists/societal health advocates. As such, it is envisioned that in Years 2 to 4, there will be more utilisation of case studies, explicit showcasing of examples of practice in the classroom, and more experiential learning to see actual experienced pharmacists who advocate for health in their line of work. This may be presented as a potential way for students to overcome their lack of belief for greater societal or systematic contributions, and move towards acting as a participatory pharmacist and justice-oriented pharmacist instead of just a personally responsible one.

Integration was also not found to be a theme in the interviews with students. Though a difficult concept for students to grasp and visualise, more could be done to make the integration more apparent. More signposting to previously learned materials will be made, so that students can see the relevance and interlinking of the topics.

## **CONCLUSION**

Integration was used as a modality to introduce and bring relevance to the concept of health advocacy to Year 1 Pharmacy students. After one year of exposure to the integrated B.Pharm curriculum, a greater consolidation of health advocacy concepts was seen, with students understanding the responsibility of pharmacists in the medical field, and that they must be knowledgeable in order to uphold that accountability to patients. However, the Year 1 students had expressed self-doubt that pharmacists could contribute to larger and greater societal good. In this regard, more should be done to showcase explicit examples of professional pharmacists promoting health advocacy as routine practice.



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Dr Leroy KOH is a Lecturer in the Department Pharmacy at the Faculty of Science, NUS. Leroy’s research interests include issues related to public health and health advocacy, general medicine, biostatistics and epidemiology, as well as pharmacy education.

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