

Today's Challenge, Tomorrow's Innovation

innovPlus Challenge 2021 - Run 2



CHALLENGE STATEMENT #03

1. Challenge Owner Index and Pseudonym

#03 – Crystal Springs

2. Challenge Statement

We are looking for an automated pre-screening solution that will enable us to better train our medical concierge service staff. Such a solution will ideally allow us to recruit service staff from a wider pool of PMETs. We envision that the proposed solution should be scalable such that the platform can also be used by third party medical concierge and unaffiliated medical specialists

3. About the Challenge Owner Organisation

We are an organisation that provides multidisciplinary healthcare services that combine primary and tertiary healthcare like family medical services, anaesthesiology and pain management. We also offer paramedical products and healthcare design consultancy services.

4. Define the Challenge

Current Situation

With the lack of transparency around healthcare providers, many people struggle to find the right physician match. It is extremely difficult for a patient without medical knowledge and education to select a 'capable' physician in specialty care. The average person can't understand what qualifies a doctor to treat patients at the condition and subspecialty level. According to Dr. Clough from Armada Healthcare "over 40% of initial consults are with people who really shouldn't be with that specialist".

That is a lot of wasted time and resources for both patients and doctors.

The current referral process is fragmented:

- Specialists are recommended based on the recommender's network which may not necessarily be the best fit for the patients.
- Specialist's online profiles are written for a general audience and do not include finer details like subspeciality because they are too technical to understand for a layman.
- Recommenders may not be able to provide patients with a comprehensive triage screening to formulate an effective plan for care.

20 million misdirected physician referrals still occur annually (Source: Becker Hospital Review, 2014). More than 50% of consumers will receive incorrect treatment in their lifetime (The American Journal of Medicine). The process of matching patients to specialists is complicated due to

- Incorrect or vague medical complains provided by the patient when they attempt to get a specialist referral resulting in a less than ideal specialist match,
- Rapidly advancing medical subspecialities which may not be known to the recommender, significant search costs may be incurred to understand the competencies of all available doctors,

- Insufficient considerations being made towards a patient's non-clinical preferences when making a specialist referral resulting in reduced care compliance by the patient,
- Complicated insurance coverage and necessary out of pocket expenses may cause patients to seek treatment only from approved panel specialists, instead of a specialist that can best treat their problem.

Furthermore, we receive referrals for medical specialists from different channels ranging from general practitioners to friends and family. The channel of communication is fragmented and is sometimes difficult to review the conversations and better train our agents. The manual effort is further escalated due to time pressures and difficulties in eliciting preferences from patients who may be hesitant to make treatment decisions. This problem is expounded as cross border medical treatments and international patients become commonplace for the ever-connected hub we are in, and Singapore being a lead driver of medical tourism. Language barriers and communication nuances have to be overcome for the effective diagnostics and delivery of healthcare solutions.

All these factors make the training and recruitment of new concierge service staff tedious and non-scalable. The difficulty of finding the right staff with the right experience is also affecting our ability to expand our services overseas.

Past & Current Solutioning Efforts

We have not adopted any technological solution to solve this problem. We rely on our network of Third-party agents ("TPAs") and General practitioners ("GP") work in tandem to provide the best possible match. Our concierge team needs to research the patient's insurance coverage and through the recommender, understand the needs of the patient. We establish group chats between the recommender, the concierge team and the patient to reduce communication friction. For cases that are not obvious, we have to bring the keynotes to a medical director for further recommendation. At times, the medical concierge team will have to call the specialist clinic on behalf of the patient to better understand if the specialist is able to help the patient's condition. The many touch points thereby increasing communication misstep.

Medical concierge roles are unique because they are usually not medical staff but are familiar with the operations of a specialist clinic. The role is also more business development and less about providing medical treatment. This potentially makes the role unpopular among medically trained professionals. Finding the right person that has enough experience to understand all the different medical subspecialties has been a challenge for the organization. We cannot scale up our operations and standardize our customer experience if we have to rely so much on the skills and expertise of individuals on the concierge team.

Challenge / Gap / Unrealised Potential

There are three aspects to this challenge.

1. **Customer:** Mismatch of specialists can mean wasted resources from both patients and the specialist, or even more worrying is refusal to follow a recommended treatment plan prescribed by the specialist, resulting in rebounds and complications. Patients may also feel frustrated about the experience and resort to ignoring the problem instead, reducing the patient's quality of life.
2. **Medical Concierge:** With rapidly evolving insurance medical coverage and specialist medical subspecialties, the service team may feel overwhelmed trying to do the research and stay updated with the latest developments. They may be advising patients based on outdated information causing either post-treatment financial distress or dissatisfied customer experience.

3. **Company:** The difficulty of tracking all the conversations and ensuring consistent customer experience can result in reputational damage. This is especially true for overseas expansion where it may be more challenging to manage the operations for local agents. Data is also not being captured and analysed for training and performance review. It is difficult to measure the service level of the agents or to track their activity. Sales recovery is also complicated and frustrating.

5. Targeted Learners / Users

Primary Targeted Learners

- Medical concierge service staff currently working with patients to match specialists,
- Overseas independent agents who are looking to bring their clients for medical tourism to Singapore,
- General practitioners who are referring their patients to specialist care,
- Other medical specialists who have patients needing other specialist care,
- Insurance agents working with their clients to advise them on medical coverage for specialist procedures

Through our network of GPs and independent agents, we are targeting 50 learners for our current proof of concept.

Secondary Targeted Learners

- PMETs in the service industry and is looking for a career switch to become a medical concierge,
- General public with family members in need of specialist medical care,
- General public who wants to understand more about financial planning around personal healthcare.

Through our digital marketing campaigns to bring awareness to our platform, we hope to reach out to 500 new learners from the general public.

6. Deliverables

We envision that the proposed solution should be scalable such that the platform can also be used by third party medical concierge and unaffiliated medical specialists.

The proposed pre-screening solution should consist of two key components.

The first component is a gamified self-learning platform where service staff from non-medical backgrounds can be trained to screen the patients using correct medical terminologies. This training will help to provide more accurate and specific information to our backend medical review team and ensure the best possible match between specialists and patients.

The second component is an automated prompt which will help the service staff ask detailed questions about the patients' medical condition. This will help to ensure that better data quality can be fed into the backend system to facilitate the development of machine learning models in the future

7. Expectations of Solution

The proposed solution should:

- Use Student-Centric learning as a core learning pedagogy,
- Support unsupervised self-learning by potential learners,
- Support learner's progression with gamification and records of their learning activity,

- Support bite size lessons and quizzes to reinforce and promote continuous learning,
 - Suit PMETs who are familiar with the service industry but have little or no medical backgrounds,
 - Integrate with popular instant messaging systems such as WhatsApp and Facebook Messenger,
- Collate service's staff interaction with patients for further training and review,
- Organize the collected data into a data warehouse to facilitate future enhancements,
 - Support third party medical concierge and unaffiliated medical specialists to join the ecosystem,
 - Abide by the Personal Data Protection Act (PDPA) on the sharing of personal data,
 - Abide by the healthcare ethics guidelines set by Ministry of Health

8. Measures of Success

The expected observable and emotional outcome(s) are as follows:

- Faster processing time in terms of match-matching
- More accurate matchmaking between patients and specialists
- Increased trust in patients for the match-making system
- Less skepticism in patients for their referred specialists
- Increased trust in the healthcare ecosystem

The expected measurable impact(s) and learning outcomes are as follows:

- 50% deduction in processing time required to do match-making
- 50% deduction in misdirected specialist referrals
- 1 point increase in customer satisfaction