GETTING SMARTER ABOUT THE PANDEMIC

Dorothea Koh helps speed and ease physician access to up-to-the-minute resources for diagnosing and treating COVID-19 patients.

At the start of the COVID-19 pandemic, Dorothea Koh ('06) knew doctors would have an urgent need for fast access to accurate, evolving information to treat patients infected with the virus most effectively. She also knew many hospitals have a limited number of computer terminals—but nearly every doctor has a smartphone.

So, in March 2020, Koh expanded the reach of Bot MD to include COVID-19 information that doctors needed. Bot MD is a smartphone app with an artificial intelligence (AI) clinical chat assistant that instantly answers physicians' questions about drug formularies and protocols. The AI chatbot has been used in 60 countries by more than 10,000 doctors globally since its launch. The answers come from the hospital's own content—including clinical protocols, guidelines, and call roster schedules—as well as third-party professional medical resources.

"Bot MD is a little avatar that's friendly, tells jokes, and does a lot more than give physicians information. We designed it to be like a clinical peer or a buddy," says Koh, the company's Singapore-based CEO and founder. "We really wanted to build a tool that offered them quick, reliable, and fast help, 24/7, especially when they are on call."

The chatbot, trained on medical vocabulary and clinical information, improves with more usage by the doctors. Each time a clinical user asks a question, the bot learns something new, Koh says. Using proprietary technology that leverages natural language processing, the Bot MD team aggregates and anonymizes user questions to train the application to get smarter over time.

"The bot helps find answers when they're really needed," says Koh, who majored in biomedical engineering and economics at Northwestern.

Bot MD is quickly gaining popularity. With 20 doctors on board in the National University Hospital (the first Bot MD hospital customer) in Singapore in January 2020, the app grew to have more than 4,000 users within the hospital by yearend. As COVID-19 surged, Bot MD also expanded its usage to patient facing applications like WhatsApp for vital signs monitoring of COVID-19 positive patients in Singapore. The platform has helped more than 3,600 patients monitor their heart rate, temperature, and oxygen twice daily with clinical alerts sent to doctors and nurses.

The idea for Bot MD first came to Koh during her travels in rural areas of developing Asian countries while she worked at Fortune 500 companies, including Baxter Healthcare and Medtronic. Koh saw that while few people

had access to computers, smartphones were quite common. To her, it was an opportunity to help rural doctors get up-to-date information quickly and easily using the technology already in the palms of their hands.

In 2018, after nearly a decade working as a Baxter regional general manager and in business development for Medtronic, she founded Bot MD and began working on the product, two years before the global pandemic arose. This is in addition to Koh's eight pending patent applications.

In the past year, the bot has been trained on hospital and clinical content from a wide variety of hospitals. One version even allows for doctors to order, schedule, and view radiology exams and scans through the bot.

"The speed of Bot MD makes it valuable," Koh says. "Our company's mission is to empower doctors so that we can help them save time and improve the quality of care for their patients."

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