



Artificial Intelligence in Healthcare

(Source: Excerpts from an article published by Cardinal Health, with contributing writer, Laura Drucker and Jacob Haning, Senior Analyst and Software Engineer, Fuse by Cardinal Health)

Louise, an Artificial Intelligence (AI) voice, assists the Boston Medical Center's discharge advocates in teaching patients about components of their care, and Louise's dialogue is tailored for each patient based on the information entered into the workstation.

Artificial intelligence technologies like Louise are becoming a more common part of the patient experience as AI – the simulation of intelligent behavior in computers – grows in healthcare. There were 106 AI startups in healthcare as of February 2017, according to a report from CB Insights, two-thirds of which were launched just last year.

There are three reasons why AI will enter the healthcare arena. While there is still debate around what role AI should play in healthcare, there are many reasons healthcare providers should embrace it. They are: Better, quicker diagnostic and treatment decision support; Greater ability to focus on value-based care; and, The human element of healthcare will always be needed.

Better, quicker diagnostic and treatment decision support.

In more than 99% of cases, IBM's Watson recommended treatment plans were the same as those of the oncologists participating in a study. "The same benefits computers provide, like unlimited memory and immediate recall, are what make AI so powerful," said Jacob Haning, a senior analyst and software engineer at Fuse by Cardinal Health, the company's innovation center. "By applying deep learning algorithms to an unlimited amount of knowledge at ever-increasing speeds, we can make highly accurate, informed decisions to produce better outcomes."

As computing power increases and data storage becomes cheaper, computers are able to provide near unlimited capacities for memory and data. AI algorithms make use of that to quickly disseminate and analyze endless volumes of data for better patient outcomes. These are crucial skills in the world of medicine, where new information on how we understand and treat diseases appears in research papers nearly every day.

Even without the heavy workload that today's healthcare providers face, it's impossible for one physician to read and absorb every piece of up-to-date research in their field. But AI can, and as such, is an indispensable tool for doctors to provide patients with the best and most recent information available for better care. Consider IBM's Watson, an AI tool that is proving particularly useful in the healthcare environment. One iteration, Watson for Oncology, hosts an extraordinary amount of curated oncological data, including more than 290 medical journals, 200 textbooks, and 12 million pages of text. Recently, Watson was tasked with assisting in treatment support of over 1,000 cancer patients at the University of North Carolina School of Medicine. In more than 99 percent of cases, Watson's recommended treatment plans were the

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♦ Hong Kong's **China Resources Pharmaceutical Group Limited** announced its interim results for the six months ended 30 June 2017 ("Reporting Period"). As at 30 June 2017, the Group recorded total revenue of approximately HK\$82,737.6 million (US\$10.6 billion), representing an increase of 9.4% year-on-year (an increase of 15% in RMB terms). Revenue of its three major business segments, namely pharmaceutical manufacturing, pharmaceutical distribution and pharmaceutical retail, accounted for 13.9%, 83.5% and 2.6% of the Group's total revenue, respectively. The Group's gross profit for the period amounted to approximately HK\$12,528.0 million (US\$1.61 billion), representing an increase of 6.6% year-on-year (12.1% in RMB terms). Gross profit margin was 15.1%.

♦ **Oriola-KD Corporation** (Finalnd) has announced the acquisition of **ICTHS Health Support**, a provider of services to pharmacies, pharmaceutical companies and healthcare operators. The acquisition comes as Oriola strengthens its position and strategy to offer a wide range of services to various healthcare providers and companies in both Sweden and Finland.

♦ On July 7th, **McKesson Canada** announced that it had acquired all outstanding shares of **Uniprix**, following regulatory approval by the Competition Bureau of Canada. Under the agreement, individual pharmacies will remain independently-owned and will continue to operate under the Uniprix brand.

♦ In a program aimed at cutting redundancy, **Suzuken Group** (Japan) will eliminate approximately 350 jobs. This effort will reduce Suzuken's selling, general and administrative cost rate by up to 1 percent. The move falls under a three year business plan continuing through 2019. The company is soliciting 6,000 eligible employees to voluntarily leave, although no details

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IFPW Hosts Mexican Wholesalers For Tours of U.S. Logistics Centers

(Source: George Bray, IFPW Vice President of Member Engagement)

On Wednesday, August 23rd, IFPW's Executive Vice President and GM, Chris Goetz, and VP of Member Engagement, George Bray, led a contingent of Mexican pharmaceutical distributors through a series of tours and meetings to observe and discuss the best practices in U.S. reverse logistics. The senior wholesale executives from Mexico were led by Tomas Rodriguez, Executive President of Diprofar, the Mexican pharmaceutical distribution trade association. In attendance, and representing their respective companies, were: Pablo Escandón Matarazzo and Arturo Gunter from Nadro; Rodolfo von Der Meden of Farmacos Nacionales; and, Jose Alberto Peña and Hector Manzano with Marzam.

The two days began with a meeting and tour at Inmar, with senior executives, at their locatoin in Ft Worth, TX. The tour of

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same as those of the oncologists. In 30 percent of cases, Watson provided additional treatment options based on the latest cancer research. "Tools like Watson support healthcare teams in their decisions," Haning said. "They can get to diagnoses and treatment options faster and help patients in a better way."

Greater ability to focus on value-based care. Industry-wide shifts toward value-based care mean that physicians and other healthcare providers are expected to be more efficient, effective and attentive than ever before. These are heavy expectations considering most providers' workloads and patient volume. AI can offer assistance here too. Google subsidiary DeepMind is able to take over repetitive, routine tasks that typically take up a large portion of a provider's time. At London's Moorfields Eye Hospital, DeepMind has been uploaded with a million eye scans, as well as identifying information about the conditions each represents. In the future, they hope this will reduce the time required for experts to go through all aspects of the eye scans by spotting patterns and categorizing results for faster diagnosis, leaving staff with more time to spend with patients.

"Computer programs in general are ideally suited to handle repetitive tasks because of their speed and accuracy," Haning said. "Now, if you can apply context and interpretation, which is the power of machine learning, a part of AI, the list of tasks a computer can optimize becomes much, much longer." Providers will be able to focus on the more nuanced facets of patient care, like interpreting diagnoses and explaining them in a more meaningful way, which can lead to better patient involvement and outcomes.

The human element of healthcare will always be needed.

While it's certainly true that AI could replace longstanding healthcare tasks like medical scans and data entry, it could also open up a need for even more jobs that require a human touch, like empathizing with patients and guiding them through difficult diagnoses and treatments. Fear of AI, Haning added, comes from a misunderstanding of the facts. Many people take Elon Musk's argument that we need to be wary of incorporating AI into large industries to mean that AI will eventually operate outside of our control. But what Musk is saying, Haning explained, is that AI is going to be a disruption, so it's important that we incorporate it in a way that's thoughtful and sustainable.

Haning added that the incredibly positive potential for applications of AI in healthcare should also be noted in the global discussion. Experts also see AI as complementary to doctors' roles and a way to fill in gaps in care. Venkat Rajan, global director of Frost & Sullivan's Visionary Healthcare Program, told Fast Company that robots won't take over doctors' jobs but rather "democratize" diagnosis and care, especially in facilities that have, for example, a general cardiologist rather than a team with different subspecialties.

"In my opinion, the healthcare industry should embrace AI," Haning said. "Our industry should play a major part in the way this technology is adopted and developed, and our voices need to be heard." More discussions about the adoption and development of AI in healthcare are sure to continue. But for now, it's clear that AI offers great potential in healthcare and can help providers make faster, better diagnoses and free up more time for quality patient interactions.

IFPW Hosts (cont.)...

their 400,000+ square foot returns facility which employs 500 associates was well organized and very informational. The meeting following the tour allowed the group to get an in-depth view into a major pharmaceutical reverse logistics provider's operations and deepen the understanding of the company's role to the pharma industry in the U.S.

Following the Inmar meeting the group traveled to Columbus, Ohio for meetings and tours with US wholesalers Cardinal Health and AmerisourceBergen. The morning of Thursday August 24th opened with senior executives from Cardinal Health at their Groveport, Ohio National Logistics Center. This meeting was designed to provide a detailed review of the complex manufacturer/wholesaler/customer relationships as it relates to reverse logistics and how these relationships have evolved over time. The tour that followed provided the group with a birds-eye view of a national customer-focused logistics center supporting a large group of internal forward distribution centers.

The group then moved to the AmerisourceBergen Lockbourne, Ohio based distribution center. An overview of the distribution center's customer base and patient centric culture was eye opening and representative of the pharma distribution industry's large distribution center efficient and customer focused operational strategy. After the overview the group toured the traditional distribution centers' functions of receiving, put away, stocking, and piece and case pick order filling followed by a detailed overview of the return goods and "morgue" departments.

A final night dinner allowed the group to review the week's activities and better understand the integrated operations and interfaces with a reverse distribution provider in the U.S.. Contrasts were naturally drawn with the practices of the Mexican pharma distribution industry. The group, upon its return to Mexico has begun the planning process to implementing learned best practices and developing more complementary and collaborative relationships with customers, industry and other stakeholders.

IFPW thanks Rob Zomok, President, Supply Chain Network of Inmar and IFPW members Cardinal Health and AmerisourceBergen! By sharing best practices and engaging in open dialogues between companies operating in different international markets, everyone learns and patients around the world benefit from an increasingly efficient and safe execution of pharmaceutical distribution logistics.

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regarding age or retirement benefits were disclosed.

- ◆ Pursuant to **Merck KGAA's** divestment of its biosimilar business earlier in 2017, it is considering its strategic options to sell its consumer health unit, or form a partnership with another company. The move comes as the company concentrates its focus on branded pharmaceuticals. The deal has an estimated value of €3.0 billion (US\$3.56 billion), according to Société Générale.

- ◆ **CVS Pharmacy** is introducing automated retail vending machines to dispense necessities, including health products, healthier snacks and personal care products. the machines will pop up in New England and New York by the of October 2017.

Sources: Asia Corporate Newswire, Drug Store News, Pharma Japan, and Scrip)