

IBM investit 100 millions de dollars sur 3 ans dans la recherche médicale afin d'améliorer la qualité des soins et en optimiser le coût

Armonk, N.Y. - 15 juil. 2010: *IBM présente son projet visant à recruter des scientifiques et ingénieurs de renom afin d'aider les praticiens et les compagnies d'assurance à fournir des soins de haute qualité aux patients ainsi qu'à adopter une approche méthodique de la pratique médicale.*

Cette initiative perpétue l'investissement d'IBM dans les domaines tels que la recherche dédiée aux services, le cloud computing, l'analytique ainsi que dans de nouveaux domaines scientifiques comme la nanomédecine et la bio-informatique.

IBM s'associe également avec l'université « People's Hospital » de Pékin pour construire le premier système de médecine factuelle dédié au patient (ePC3) en Chine afin de partager les ressources entre les différents fournisseurs de soins médicaux et leur permettre de collaborer entre eux.

IBM Bolsters Scientific Research to Improve Healthcare Quality and Costs

Hires M.D.s to Work Alongside Scientists in New \$100 Million Research Initiative

Armonk, N.Y. – July 15, 2010: IBM (NYSE: IBM) today announced plans to enlist some of the company's leading scientists and technologists to help medical practitioners and insurance companies provide high-quality, evidence-based care to patients. As part of this initiative, IBM is hiring medical doctors to work alongside its researchers to develop new technologies, scientific advancements, and business processes for healthcare and insurance providers.

Dedicating \$100 million over the next three years, the initiative will draw on IBM's leadership in systems integration, services research, cloud computing, analytics and emerging scientific areas – such as nanomedicine and computational biology – to drive innovations that empower practitioners to focus their efforts on patient care.

More than 100 researchers across IBM's nine worldwide research laboratories and its collaboratories in Melbourne, Australia, and Taipei, Taiwan, are contributing to these efforts. As part of this initiative, IBM expects to hire several physicians, clinicians, nurses, engineers, economists and social scientists. Additionally, the company will seek new research collaborations with businesses, governments and universities. IBM will focus its research on three main areas:

- Evidence generation, which uses scientific methods to turn raw health data into proof of effective treatment methods, and then delivering it in a context-dependant and personalized way at the point of care;
- Improving service quality through simplifying the healthcare delivery process; and
- New incentives and models to shift the healthcare system to one that rewards based on outcomes and healthier patients rather than only treatment and volume of care.

Privacy and security of patient data and compliance with current healthcare regulations will be addressed

throughout the new research initiative.

“Improving the quality of healthcare requires more than just digitizing health data,” said Chalapathy Neti, Global Lead, Healthcare Transformation at IBM Research. “In fact the proliferation of diagnostics technology has in many ways added another layer of complexity, making it more difficult to gain valuable insights for patient care. Enabling greater coordination between care providers and transforming data into clinical decision intelligence could greatly improve patient outcomes and lower costs of healthcare today.”

Putting Medical Evidence to Use

Today, advanced diagnostics -- tests that aim to detect illness and identify potential health risks -- can lead to earlier intervention for patients and provide clinicians with a wealth of information. The raw data that comes from these tests can be converted into “evidence” or actionable information for clinicians. With the amount of digital information patients amass over time, it is critical that doctors are able to integrate and analyze data from many different sources – such as patient demographics, lab tests, modality studies such as EKGs and echo videos, specialist interpretations, etc. – to form a holistic picture of a patient’s condition and make more informed judgments and decisions in treatment.

IBM researchers across the globe are collaborating on a variety of efforts to help bring more a more evidence-based approach to patient care. Current research efforts include:

- Computer scientists are working with cardiologists to create a system that helps identify difficult-to-see patterns in symptoms and characteristics across a patient set that gives better insight into diagnoses and the comparative effectiveness of different treatments and outcomes.
- Researchers are working with the European HYPERGENES consortium to identify the genetic variations responsible for hypertension and associated organ damage through building a single view of the disease and a comprehensive genetic-epidemiological model that takes into account how genomics and other factors help improve diagnostic accuracy and introduce new strategies for early detection, prevention and therapy, for individuals that suffer from hypertension.
- As chronic disease, patients taking multiple medications and aging populations across the globe present additional challenges and burdens on the healthcare system, scientists and mathematicians across IBM are using data mining, information management and advanced analytics to build a system that better understands and addresses adverse drug reactions and interactions and provides insights to physicians and patients on the effect of their decisions in managing their conditions.
- In China, IBM and Peking University People’s Hospital are building an evidence-based clinical care solution that focuses on chronic disease management and integrates a comprehensive view of a patient's health, best practices from previous diagnoses, treatment, research and more to provide doctors with clinical decision support at the point of care.
- Scientists are also combining their deep expertise in nanotechnology and biology to develop new applications for personalized medicine. Scientists have begun to develop medical diagnostics tests of the future that can quickly and accurately analyze biological samples and test for a variety of diseases. IBM is also partnering with Roche to develop a nanopore-based technology that will directly read and sequence human DNA quickly and efficiently for more personalized diagnosis and treatment

Improving Service Quality and New Incentive Models

Despite improvements, the way people interact with their health insurance companies is cumbersome at best and breakdowns occur at many levels. Evolving regulatory and security requirements adds another layer of complexity to the relationship between patient and health plans and it is more difficult to track decisions and manage costs. Care providers need to be freed to work more closely with doctors and caregivers to improve efficiency and increase safety and move towards new models that that reimburse more patient-centric care rather than just the volume of care. In this effort, IBM will apply the knowledge the company has gained through its own business processes transformation and the quality of the services it delivers to clients to improving healthcare today.

For example, IBM is collaborating with National Account Service Company (NASCO) to help its Benefits and Operations teams make changes to claim processing rules quickly and accurately in response to rapidly evolving regulations, policies and patient coverage rules that regularly occur with healthcare benefit plans. The changes are so complex that one small change can set off a series of unintended consequences, causing valid healthcare claims to be denied or paid inaccurately. IBM worked with NASCO to create benefit plan traceability by examining existing benefit code and rules and mapping them back to industry concepts and constructs. The team created a technology that translates the different sequences of code into English, analyzes the sequences, consolidates similar functions into groups, and displays the translated code using several data visualization approaches. Using IBM's expertise in analyzing complex, large-scale IT systems, the scientists have provided NASCO with a way to improve claims payment research while increasing the flexibility necessary to efficiently respond to new or changing healthcare regulatory and market requirements.

Through deep analytics and mathematical optimization techniques, IBM researchers are also exploring payment models based on best practices and positive outcomes at the patient-level, large-scale analysis of wellness at a population level and more. These efforts could accelerate the shift of the current healthcare system from a fee-for-service model to one that rewards disease prevention and wellness.

IBM scientists are engaged in a multi-year research effort to connect and analyze enormous collections of data from a wide variety of sources in order to enable individuals, governments and businesses to better understand which actions improve human health. Through advanced modeling and simulation, the team is investigating and simulating the cause-and-effect relationships between agriculture, transportation, city planning, eating and exercise habits, socio-economic status, family life and more to pinpoint what types of incentives or investments might be needed and how to prioritize them.

IBM's track record of improving healthcare through scientific achievements and collaboration with healthcare companies dates back to the 1950s. In the last decade alone, IBM has collaborated with Scripps Research Institute to understand how influenza viruses mutate, worked with European universities to develop better HIV antiretroviral therapy methods and launched the World Community Grid, which has done projects on cancer, aids, dengue fever among other groundbreaking healthcare innovations.

Peking University People's Hospital Partners with IBM to Build China's First Evidence-based Patient Centered Clinical Care System

Beijing, China – 15 July, 2010 ... IBM (NYSE: IBM) and Peking University People's Hospital (People's Hospital) have built an evidence-based patient centered clinical care (ePC3) system to enable cooperation and resource sharing among medical services providers for improved patient care.

The ePC3 system, developed by scientists at IBM Research - China and People's Hospital, will provide better clinical decision support at the point of care by offering a comprehensive overview of a patients' health data as well as best practices from previous diagnoses, treatment and research. As a result, it has the potential to reduce medical errors and enable better interactions with patients and increase physicians' efficiency, thus making healthcare services more accessible and affordable to patients.

The ePC3 system is a part of IBM's healthcare efforts in which IBM researchers and scientists collaborate with medical practitioners to develop new technologies and business processes to improve patient care. IBM today announced a major initiative, valued US\$100 million, where IBM will draw its expertise in system and information integration, services research, cloud computing, analytics and other emerging scientific areas to help physicians to develop patient entered healthcare systems. As part of this initiative, IBM is hiring medical doctors to work alongside its researchers.

Healthcare in China is often inaccessible and expensive as large hospitals in cities are overburdened with patients while community healthcare providers in rural areas remain stagnant. The existing healthcare system also lacks a collaborative platform and an approach that allow doctors to give holistic and optimal care to their patients. The Chinese government has pledged 850 billion yuan (US\$124 billion) for a healthcare reform that promises to make healthcare services safer and more affordable for China's 1.3 billion citizens by next year.

To address this, the ePC3 research effort will facilitate a more integrated approach to allow doctors to retrieve patients' health information and manage and update clinical guidelines efficiently.

Through ePC3, People's Hospital will be able to create longitudinal electronic health records (EHR) for patients, which will be shared among and updated by patients' healthcare providers throughout treatment cycles. The longitudinal EHR will enable personalized health assessment and treatment based on patients' individual medical circumstance. Currently, patients' medical records are scattered across various healthcare providers, often leading to cumbersome patient referral procedures and wastes time, money and precious medical resources. The hospital aims to consolidate seven to eight internal systems as well as connect more closely with other medical services providers.

"We believe implementing a system such as ePC3 could help patients with chronic diseases such as diabetes or high blood pressure by improving the management of their conditions. This ultimately enhances their quality of life and may even increase their lifespan. And that is invaluable," said Professor Shan Wang, President, Peking University People's Hospital

To fulfill People's Hospital's goal to provide standard treatment to patients with chronic diseases, ePC3 is applying evidence-based medicine – including standard and best-practice diagnosis, medication, treatment and care plans – to manage the clinical processes of chronic diseases and provide decision support to clinicians at the point of care. During the long running chronic disease management process, it helps patients and clinicians clearly understand what clinical activities took place in the past, what actions should be taken right away at the point of care, and the next step to take. The effectiveness of applying guidelines to treat medical conditions will be analyzed, which allows clinicians to improve the clinical process to enhance patient care. The project will

focus its initial efforts on diabetic patients in the chronic disease management program.

Developed as part of IBM Research's First-Of-A-Kind program, ePC3 also provides a healthcare mobile enablement platform to support round-the-clock remote care and monitoring services, timely diagnosis and proactive intervention. In the future, vital physiological data such as body temperature, blood pressure, heart rate and cardiogram and blood sugar level could be constantly monitored by mobile devices at their homes and fed into the system instantly. When any change or irregularity happens for a sustained period of time, the system will automatically generate an alert to the patient and his or her healthcare specialists to enable immediate actions.

The hospital plans to provide the new services to patients of selected hospital and community clinics beginning in early 2011. Following the completion of this pilot project, People's Hospital plans to expand the system to further facilitate a more evidence-based, patient-centric approach across the hospital's regional network of care. Citizens will be able to obtain medical services in their local community rather than going to urban hospitals for minor illnesses. Patients with more complicated conditions will be referred to central hospitals and specialists.

"As the Chinese government is trying to address the issue of isolated and disparate systems located across hospitals and medical centers, we are excited to participate in the ePC3 project which we believe can contribute to China's efforts in healthcare reform," said Dr Thomas Li, director of IBM Research - China & Chief Technology Officer, IBM Greater China Group.

To address the rising demand for information technology-enabled healthcare solutions in China, IBM opened a Healthcare Industry Solutions Lab in Beijing, where IBM experts work with hospitals and medical service providers to develop healthcare and medical systems.

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