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Groundbreaking research

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Dr. Salim Yusuf: Using big-picture thinking to improve global health

When Dr. Salim Yusuf was attending Oxford University as a Rhodes scholar, he received a piece of advice that changed his life: get the big picture right and every detail right.

While a student at Oxford, Dr. Yusuf was part of a team of cardiologists and epidemiologists that developed the idea of conducting large simple studies to detect or exclude whether treatments reduced death, or other major complications, by involving tens of thousands of patients around the world.

“We developed the concept and the approaches of doing very large studies internationally. Until then, it was very uncommon to do studies internationally. Most studies until that time included just a few hundred patients, and occasionally a few thousand,” he said.

“We recognized that we may not have discovered the true benefits of several treatments because the studies done to evaluate them were too small. So we proposed that we needed much larger studies, and in order to make them feasible, they had to be much simpler than the studies usually conducted.”

This led to the development of large simple trials: a concept that has transformed the management and outcomes of patients with cardiovascular diseases, and that has defined Dr. Yusuf’s long and distinguished career – including his current position

as director of the Population Health Research Institute (PHRI), recognized as one of the top clinical research groups in the world.

Dr. Yusuf and the 350-strong team at PHRI have been performing massive studies with long-term follow up in several conditions, encompassing 1,500,000 participants in 102 countries on 6 continents. Most of the studies at PHRI take an average of five to ten years, while some can continue for as long as 15 to 20 years.

PHRI’s recent landmark research projects include:

- The discovery by Shamir Mehta that the likelihood of death and permanent heart damage in heart attack patients can be reduced by opening all the narrowings in their coronary arteries, rather than just the blocked artery that caused the heart attack.
- The discovery by Richard Whitlock that removing the left atrial appendage during cardiac surgery in patients with atrial fibrillation reduced the risk of stroke substantially.
- A translational research program headed by Guillaume Paré that relies on PHRI’s database of over 4 million units of blood and urine to identify new blood biomarkers. This program has identified new biomarkers and genetic markers to improve the prediction of coronary artery disease, stroke, heart failure, kidney diseases and diabetes.

- A study on global nutrition, encompassing about 160,000 participants in 21 countries, showing that eating too many refined carbohydrates is associated with higher mortality and cardiovascular problems, while a moderate amount of fats, including saturated fats, is actually good for you.

These studies are only a sliver of the ground-breaking research currently underway at PHRI, including a major 20-year study on identifying the causes of dementia. The goal for every project, Dr. Yusuf says, is to definitively solve an important problem.

“At PHRI we often ask of a particular study, “Will this win us the gold medal at the high school meet, or at the Olympics?” he said.

What Dr. Yusuf takes the most pride in is PHRI’s team itself, and its culture of sharing, mentoring, and excellence.

“What I’m most proud of is the team we’ve developed, the contributions we’ve made in terms of improving human health, but most importantly, making global collaborations, global friends, and developing a new generation of researchers in different parts of the world, that will make an impact well into the future,” he said.

“You cannot realize big dreams and major projects by one individual alone – it requires a team that has a culture of reaching for the stars and working extraordinarily hard.” ■