Press Release

World Cancer Day 2019: What goes into some of the world's innovative, life-changing Cancer medications

Next time you or a loved-one takes medication, whether an over-the-counter pain-killer, chronic medication, or a breakthrough treatment, take a moment to think about its origins.

This World Cancer Day, let's acknowledge what goes into researching and developing innovative, life-changing cancer medications.

In the pharmaceutical sector it is a well-known statistic that out of 5 000 medications in preclinical testing, only 5 will progress to human testing and only 1 will make it to market.

"The Research and Development path for developing a new treatment is long and complicated, but every step in the process is essential to produce innovative treatments that can improve the lives of millions of patients," says Kgothatso Motumi, Medical Affairs Director for Roche South Africa.

Income generated from existing treatments is reinvested into the research and development of new treatments on a continuous basis. In 2017 alone, Roche invested R139.7 billion in research and development, and currently has 22 747 employees dedicated to designing, testing and refining life enhancing medication. Roche is committed to developing new and innovative medicines, not just in cancer but in other therapeutic areas such as Haematology, Neuroscience, Infectious Disease and Immunology.

From identifying the therapeutic need to innovation to the production of life-changing treatment, here is an overview of the stages of the development of a medication.

Understand the disease
Researchers conduct meticulous analysis of the biological mechanism behind a disease. They gain an understanding of the biology and the substances that influence it. Scientists at major drug companies make use of state-of-the-art scientific tools to produce thousands of new synthetic compounds for biological testing.

Find the best molecules
Only a few molecules will prove to be an effective treatment. Researchers screen each combination of molecules to identify the most promising candidates for further development. Thereafter they test how the candidates affect the structure and activity of the disease and the molecules with the desired effect are evaluated in further laboratory tests.

Clinical trials
Selected medication candidates now have to show their effectiveness in clinical trials. Clinical testing can take years and usually follows four phases, each of which has to be successful to proceed further. This includes testing for safety and tolerability, clinical effectiveness, the documentation of treatment outcomes and ongoing surveillance.

Analysis of clinical trials
Clinical trial results are scrutinised with tested statistical methods. The information is then presented at medical meetings and published in medical journals. Trial protocols and final results are published on websites that are available to the public.

Official approval
Regulators require comprehensive documentation when a new medication is submitted for approval. In our country, the South African Health Products Regulatory Authority is responsible for the approval process and to monitor the safety and effectiveness of medicinal products. It can take months to years for the authorities to complete their review but once approved, the medication can be marketed.

Large scale production
Production of any new medication is always a challenge. No matter how often it has been replicated in the lab, large scale production requires the highest standards of quality and precision, which for the specialists at Roche come with decades of expertise and experience.

The final product
The new treatment solution becomes available and medical professionals may prescribe it.

This is what it takes to manufacture advanced treatments, not only for cancer but for other therapeutic areas as well. And even once the final product is brought to market, the work does not stop there. The company is then responsible for making sure that the medicines are used correctly and safely. This includes closely monitoring the side effect profile of the medicine to ensure that it remains safe and fit for human administration. This ultimately ensures that patients can receive the most appropriate treatment and have the best possible outcomes for their disease or condition.

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ISSUED ON BEHALF OF ROCHE BY G&G DIGITAL. FOR MORE INFORMATION, OR IF YOU WOULD LIKE TO SET UP AN INTERVIEW WITH KGOTHATSO MOTUMI, MEDICAL AFFAIRS DIRECTOR FOR ROCHE SOUTH AFRICA, PLEASE CONTACT LIA MUNDELL ON 011 887 6591 OR lia@gullanandgullan.com.

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