

By using diagnostics and targeted drugs, we take each patient's needs into consideration

Summary

The frontier of medicine is constantly moving forward and the future points to an exponential development. Mapping of human genetic material was ground breaking and today researchers are able to map the cells pathways and functions in more detail. This provides opportunities for more exact diagnostics and treatment, not least within cancer diseases. It is all about giving the right treatment to the right patient at the right time. The overall change in direction towards more personalised treatment also brings great challenges for the healthcare system, which must be managed to utilise the full potential of medical development.

This position document describes Roche's view on what needs to be done to make the most of the potential available in personalised healthcare. Three important aspects that Roche would like to highlight are:

> **Early, relevant and clinically validated diagnostics:** When a serious illness like cancer is suspected, the patient must be investigated quickly with available validated diagnostics for the correct treatment to be started.

> **Increased access to information:** Decision support to modern cancer care: Healthcare professionals must have access to an updated knowledge support base to be able to treat according to the individual patient's need.

> **Monitoring of and compliance to treatment:** All cancer patients should receive systematic follow-up to detect changes in the disease and thus potentially adjust the treatment.

Problem statement – personalised treatment

Today we know that cancers are not organ diseases, but rather resulting from molecular changes. What we previously thought was a limited number of cancer diseases have proven to be several hundred different diseases with many different causes and ways of progression. Today, the development of diagnostics allows us, down to cellular level, to assess which patients that can be expected to benefit from a certain specific drug treatment.



As the amount of information increases, complexity in healthcare also increases. With information we can therefore help by offering decision support to healthcare professionals and patients.

The patient's opportunity to receive good treatment is based on two aspects: to discover the disease at an early stage and to give the right treatment immediately.

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The development towards more and more personalised treatment is rapidly advancing within the cancer area. In the next few years, a large number of advanced cancer drugs are expected to be introduced, and many of them will be accompanied by a diagnostic test that can determine which patients that may benefit from the treatment.

This means great possibilities as well as challenges to the healthcare system. When treatment is adjusted to the individual patient, the possibility to optimise the effect increase. Personalised treatment may therefore also be more cost effective for the healthcare system. At the same time, advanced cancer care is also becoming more complex and competency demanding. The needs for digital forms of decision support are increasing.

This is how Roche believes that the value of personalised treatment may increase

Each patient is unique and must be treated based on his or her specific prerequisites. Roche offers diagnostics as well as information and drug treatment. With coordinated research, Roche is developing analytical tests and drugs together, from ideas in the laboratory to clinical reality. Our goal is to provide solutions for the healthcare system, which provide the best possibilities for correct diagnosis and effective treatment.

For Roche, personalised treatment means that we develop new targeted and improved drugs in combination with specific tests from the research results. This makes the work with adjusting medications and disease management in different patients easier. Roche currently has over 250 development projects within personalised treatment and is working towards that more than two thirds of our drugs should be accompanied by a diagnostic test.

Roche has identified three areas where personalised treatment may further contribute to increasing the value in the healthcare system:

Early, relevant and clinically validated diagnostics

The patient's opportunity to receive good treatment is based on two important aspects: to discover the disease at an early stage and to give the right treatment. All too many patients are investigated too late for their serious illness. On suspicion of a severe illness, an immediate investigation is required to avoid delays that may worsen the condition. This requires multidisciplinary competency and often many laboratories are involved, which also sets high demands for coordination. It is just as important that the tests and analyses that are performed are relevant and clinically validated.

Decision support adds a further dimension to modern care

Large volumes of medical and clinical information in combination with the digitalisation of the document and information structure open the door for smart systems. These can consolidate, connect and present information in an educational way to support healthcare professionals in overcoming clinical challenges. Roche has created a knowledge and decision support base, which helps healthcare staff treat the individual patient in an optimal way.

Monitoring of and compliance to treatment

We know today that diseases change and need to be managed differently as time passes. The cancer that we recently diagnosed may have changed and needs to be approached in a new way. Cancer tumours have the ability to adjust to medications' attempt to trick the pathways of the cells. By performing analyses and tests again, we can learn how to treat the patient correctly, in a timely manner. Therefore the healthcare system must ensure that patients have systematic follow-up to discover potential changes in the disease.