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**Data Science @ Roche**  
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# Healthcare Industry

## *The Data Science Challenge*



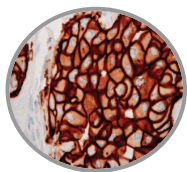
The **vast amounts of data** generated from clinical trials, electronic medical records (EMRs), digital connected devices, Molecular Information and wearables offer the chance to create more knowledge about disease areas and about patients.

What is **missing**, however, is how these data can be **connected** to all of the other health information available today to give doctors and researchers a comprehensive view of a patient's disease.

For the purpose of creating **better and more effective medicines** and companion diagnostics, reducing the number of adverse events and helping patients to be prescribed a drug that will work for them.

# The Patient Journey

## *Cancer Patient*



**Biopsy result shows cancer**



**Physician explains your diagnosis**



**Treatment Plan is determined**



**Surgery and recovery**



**Oncologist for treatment planning  
(Including Clinical Trials)**



**Periodic follow-up for five years**

# Patient Data

## *Sample Data Sources*



**Clinical Trials**



**Social Media**



**DNA Sequencing**

# Partnerships Required

## *Collaboration*



- Hospitals / Health Care Institutions (Clinical Data)
- Patient Support Groups (ie. Patientslikeme.com)
- Genetic Data (Foundation Medicine)
- Academic (Data Science, Thought Leaders)
- Technology Companies

# Challenges

*The 4 V's*



# Patient outcome

*Game Changing*



Patient outcome



**Better Patient Care**



Help select treatment plans



Database & Analytics interface

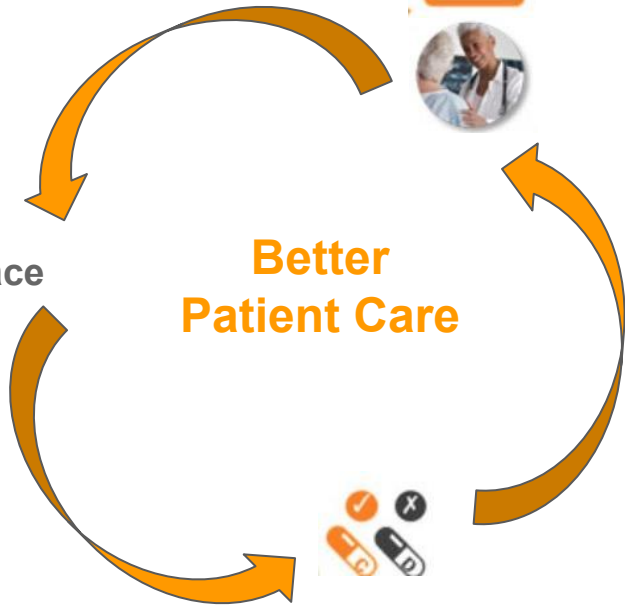
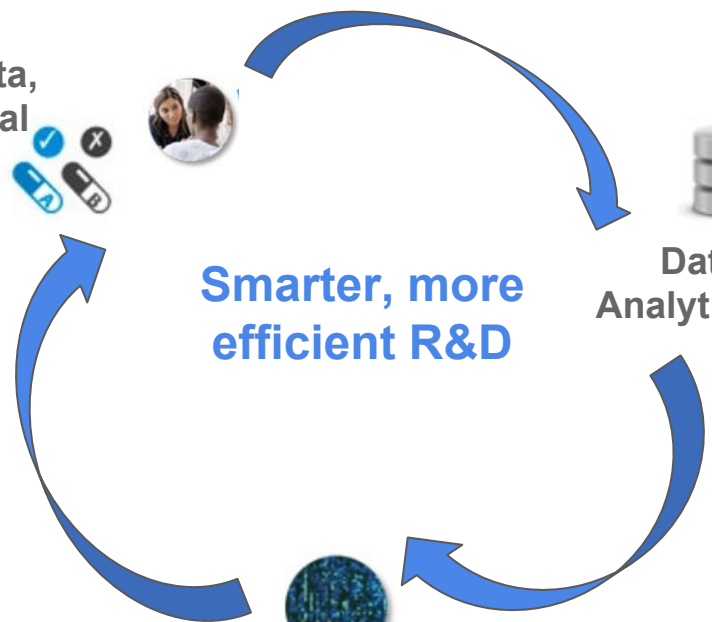
**Smarter, more efficient R&D**



Genetic Data, Clinical Trial Data



Social Data, Electronic Medical Records, Wearables,



*Doing now what patients need next*