

Run faster, smarter clinical trials with the AWS Cloud

Clinical trials bring costly, time-consuming challenges. Modernized trials powered by the AWS Cloud can accelerate timelines and reduce costs.



Trial development

CHALLENGE

Clinical trial programs can take 10-15 years

Trials make up about 2/3 of R&D costs¹

Sponsors must find the optimized trial protocol design

CLOUD-POWERED ADVANCEMENTS



• In the AWS Cloud, trial simulations that took 60 hours now take 1.2 hours — a 98% improvement²



• Virtually unlimited computational capacity allows sponsors to run thousands, rather than hundreds, of trial simulations



• Better simulations can reduce trial subjects required by one-third and cut study length by almost a year²

Recruitment and enrollment

CHALLENGE

Sponsors face difficulty recruiting and enrolling the right patients, adding time and cost

48% of sites fall short of enrollment targets³

80% of trials face recruitment-related delays⁴

CLOUD-POWERED ADVANCEMENTS



• Knowledge's (part of Accenture) Intelligent Trial Planning platform on the AWS Cloud allows prediction analysis of recruitment timelines in minutes, instead of 4-6 weeks



• Machine learning tools help identify the right combination of site, country and trial protocol — eliminating poor-performing sites can cut trial costs by 20%



• AI/ML can identify the right patients faster by cutting the analysis of unstructured clinical record data from hours to seconds

Better use of historical trial data

CHALLENGE

Limited, non-standardized and siloed data hinder decision-making

47% of trials take place outside the US⁵, complicating data standardization

Real-world data and published literature can lack key elements and are complicated by population and geographic factors

CLOUD-POWERED ADVANCEMENTS

• Medidata Synthetic Controls™ on AWS Cloud draws from over 4.2 million patients in over 15,000 clinical trials.

• Medidata Synthetic Control Arm™ offers dozens to hundreds of statistically matched patients to enrich control groups, helping to design better trials and reduce patient recruitment⁶

• Medidata Synthetic Control Database™ increases disease understanding using advanced analytics on hundreds to thousands of control patients, from standardized, cross-sponsor clinical trials.



Patient monitoring and engagement

CHALLENGE

Site visits can be burdensome and time-consuming for trial participants

Sponsors face challenges gathering continual, real-world data on their therapies

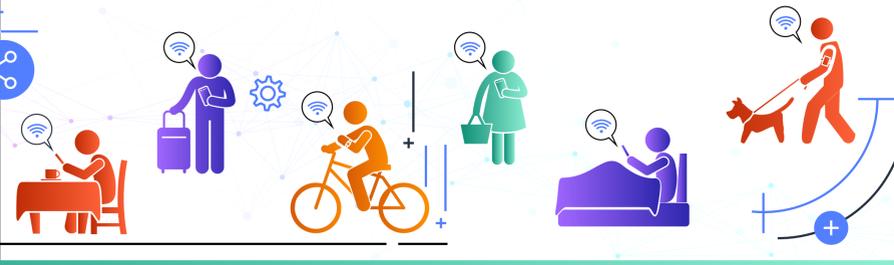
Use of digital technologies requires sponsors to extract, process and store data on adverse events, medication adherence and treatment schedule management

CLOUD-POWERED ADVANCEMENTS

• Secure movement of data from mobile devices to the cloud can reduce site visits and increase engagement while getting a more complete picture of the therapy

• An arthritis and pain study using mobile devices and AWS Cloud monitored 13,500 participants and yielded 38 million data points⁷

• AWS Cloud can process data from digital technologies, store it securely and power a clinical trial status dashboard that sends real-time alerts on adverse events and other key information to trial coordinators



Trial management

CHALLENGE

21% of trial professionals name complexity as their biggest challenge⁸

Sponsors must coordinate with remote sites and partners and comply with multiple countries' regulations

Sponsors must quickly incorporate data on adverse events and lack of adherence to optimize ongoing trials

CLOUD-POWERED ADVANCEMENTS

• AWS cloud-based tools help sponsors comply with regulations including HIPAA, HITRUST and GxP standards

• Sponsors can better coordinate with global sites and partners and can grant isolated data access while controlling IP and assets in the cloud

• Use of advanced analytics enables faster, more accurate data-driven decisions, bringing hundreds of thousands in savings for every month saved in a trial



1. Measuring the global biomedical pulse: The biopharmaceutical investment & competitiveness (BCI) survey – 2015. Pugatch Consortium. 2015.
 2. Bristol-Myers Squibb on AWS - Customer Success Story, 2013.
 3. 89% of trials meet enrollment, but timelines slip, half of sites under-enroll. Tufts. CSDD Impact Report. January/February 2013, Vol. 15 No. 1
 4. Handen, J. and Patrick, D. 3 Major challenges with global clinical trials — and how to overcome them. Clinical Leader. Aug. 2, 2018.
 5. Wicks, T. The unique challenges of global clinical trial transparency. MedCityNews. Nov. 26, 2018.
 6. Goldsack, Jen. Synthetic control arms can save time and money in clinical trials. STAT. Feb. 5, 2019.
 7. uMotif on AWS - Case Study.
 8. Burrows, A. REPORT: The 8 biggest challenges facing clinical trial professionals. KNeCT365. Nov. 30, 2016.

To learn more about clinical trials powered by AWS please visit,

<https://aws.amazon.com/health/biotech-pharma/>

