

Q1 2021 Healthcare Scientific Update

IBM has a long legacy of leading with science. In 2020, IBM published and/or presented more than 400 health-related scientific manuscripts, abstracts, and posters in peer-reviewed journals or conferences across the world. These publications and presentations, authored or co-authored by IBM clinicians and scientists, reflect research on our products, the use of real-world data, new technologies, and our scientific expertise.

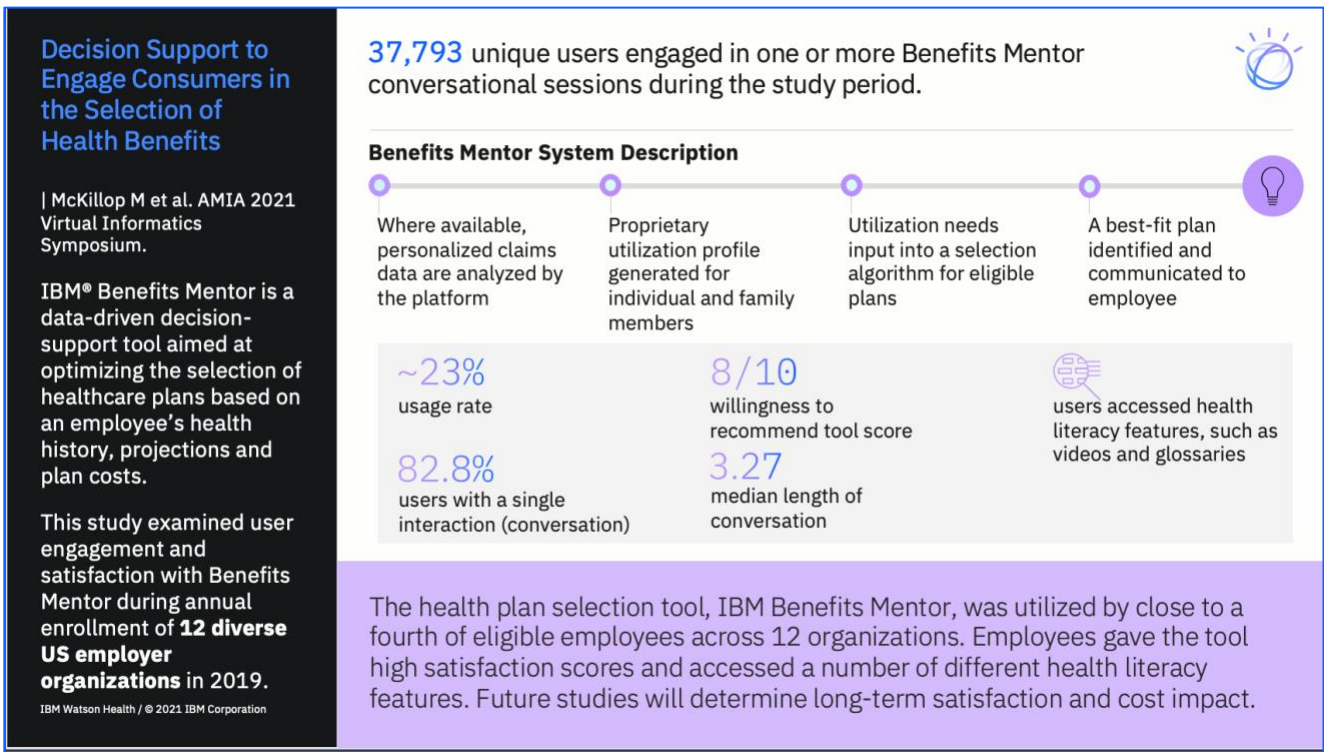
This update provides an overview of some of these compelling publications.

[Link to all Q1 2021 healthcare related science publications.](#)



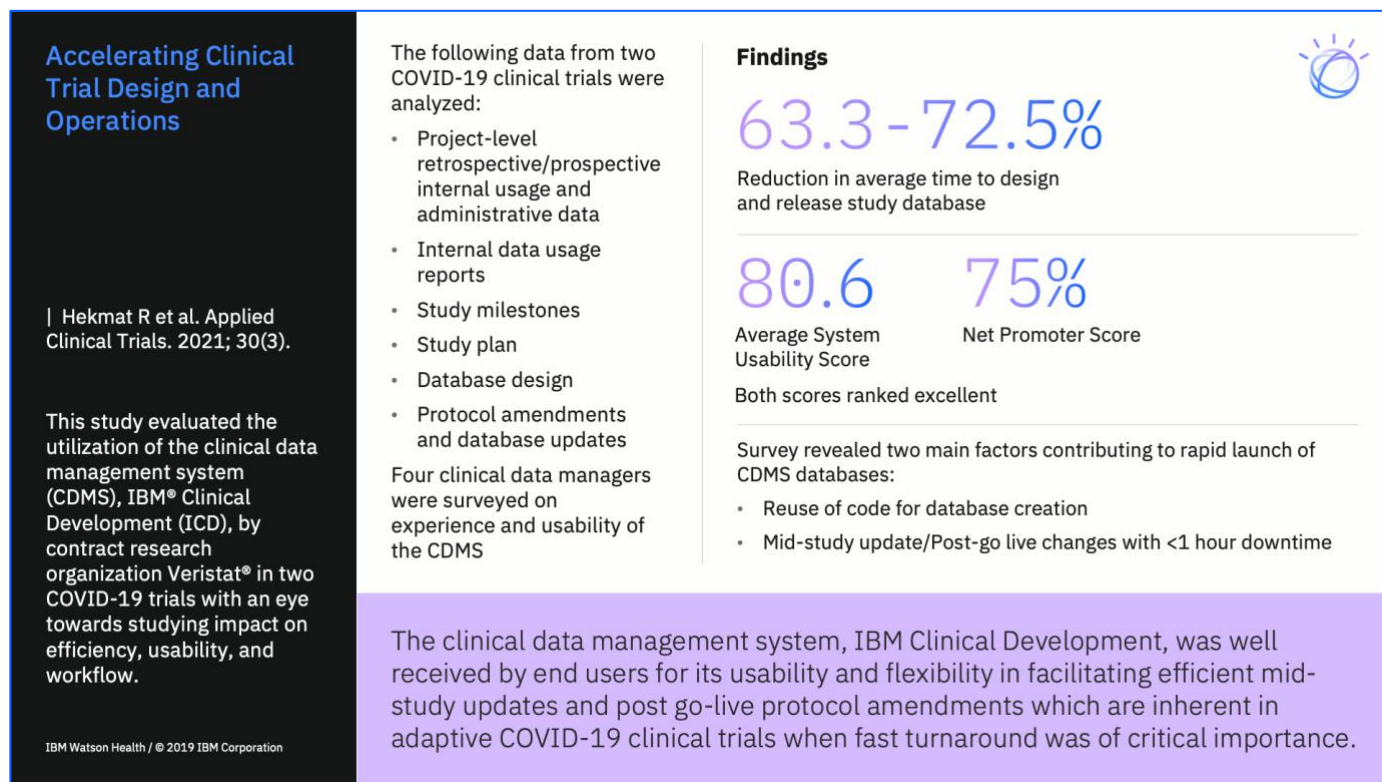
Quarterly Study Highlights

Payer/Employer: IBM® Benefits Mentor



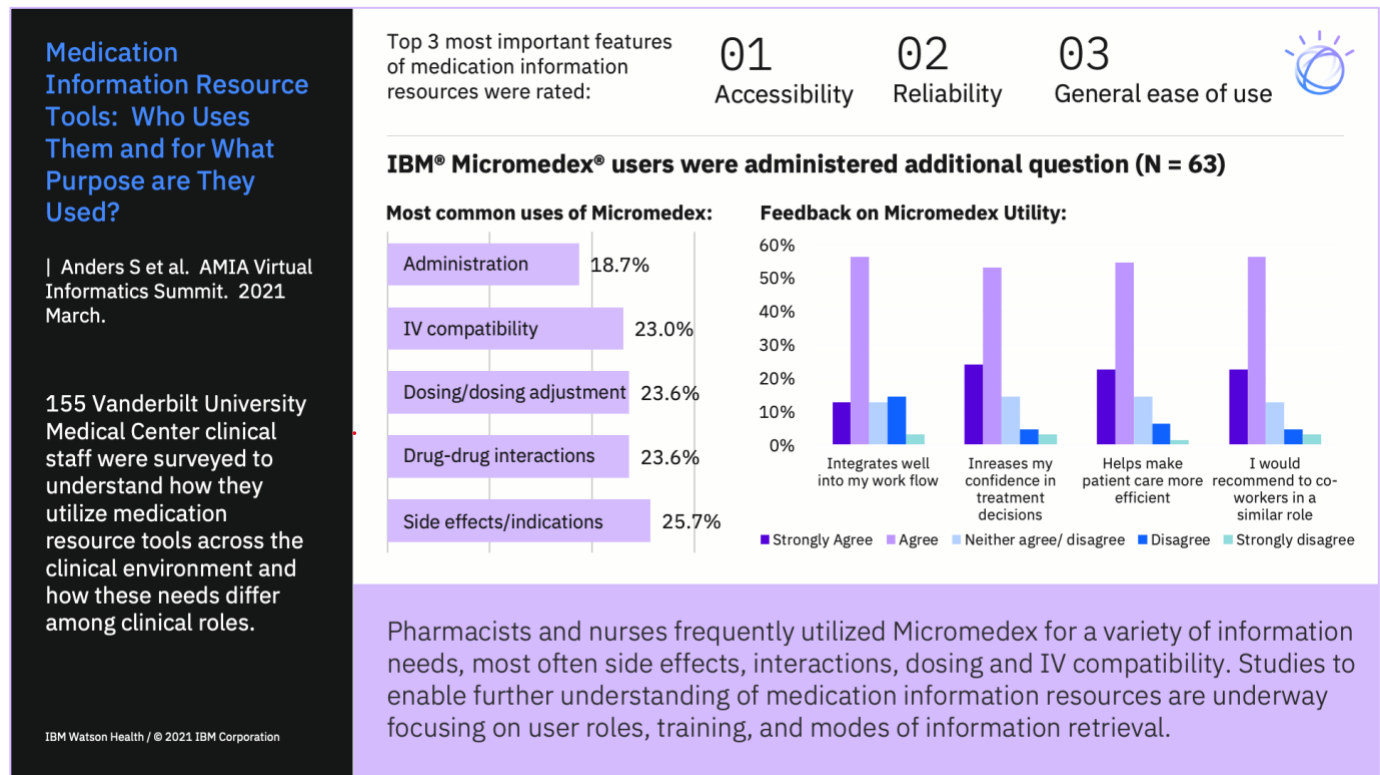
Citation: McKillop MM, Rosario BL, Preininger AM Huff C, Kutub N, Jackson GP. **Decision support to engage consumers in the selection of health benefits.** Poster presented at: *AMIA 2021 Virtual Informatics Summit*; March 22-25, 2021; Virtual.

Overview: In a study examining user engagement and satisfaction with IBM® Benefits Mentor during annual enrollment periods of 12 diverse US employer organizations, utilization rate of all eligible employees was ~23%, with employees using multiple features of the tool. Employee average willingness to recommend the tool was a promising 8 out of 10.



Citation: Hekmat R, Kutub N, VanHouten MA, Ramda R, Willis VC, Jackson GP, Henderson C, Weearatne D, DiCicco RA, Snowdon JL. **Accelerating clinical trial design and operations.** *Applied Clinical Trials*. 2020 March 1; 30(3). <https://www.appliedclinicaltrials.com/view/accelerating-clinical-trial-design-and-operations>

Overview: This study investigated the impact of IBM® Clinical Development (ICD) utilization on the running of two COVID-19 clinical trials by the contract research organization Veristat® and found that the tool was well received by users with excellent rates for both the average System Usability Score (80.6) and Net Promoter Score (75%). In addition, ICD decreased the average time to design and release the study databases by 63.3 – 72.5%, with code reuse and downtime for mid-study/post-go live updates cited as the two main factors impacting speed to launch.



Citation: Anders S, Novak LL, Kutub N et al. **Medication information resource tools: who uses them and for what purpose are they used?** Poster presented at: *AMIA 2021 Virtual Informatics Summit*; March 22-25, 2021; Virtual.


Overview: Vanderbilt University Medical Center staff in a variety of clinical roles (n=155) were surveyed on their utilization of medication resources tools to better understand how these tools are used, with 63 of these further surveyed on their IBM® Micromedex® use. Respondents reported high rankings on utility. Pharmacists and nurses were found to more frequently use Micromedex, with their top information needs focused on side effects, drug-drug interactions, dosing and IV compatibility.

The Perceived Impact and Usability of a Care Management and Coordination System in Delivering Services to Vulnerable Populations: Mixed Methods Study

| Rizvi R et al. Journal of Medical Internet Research. 2021 March; 3(3):e24122.

Sonoma County deployed a Care Management and Coordination System (CMCS), comprised of IBM® Watson® Care Manager (WCM) and IBM Health and Human Services Connect 360, to manage the complex needs of its homeless populations.

IBM Watson Health / © 2019 IBM Corporation



Insights on system utility and value were identified through 3 interdisciplinary team meeting observations, 16 interviews (user and leadership), and 8 user surveys.

Median score of 5* on perceived usefulness and perceived ease of use on the technical acceptance model survey.

Two Main Value Insights

Centralized data repository for case notes, care plan, eligibility requirements

Data Management and Centralization


+

Coordinated application processes, enrollment deadlines, 2-way communication with external agencies

Streamlined Operations and Communication

* 7-point scale with 1 = extremely disagree and 7=extremely agree.

CMCS end users and leadership reported notable appreciation for the tool's assistance in data management and streamlined operations for the social work case needs of the homeless population.

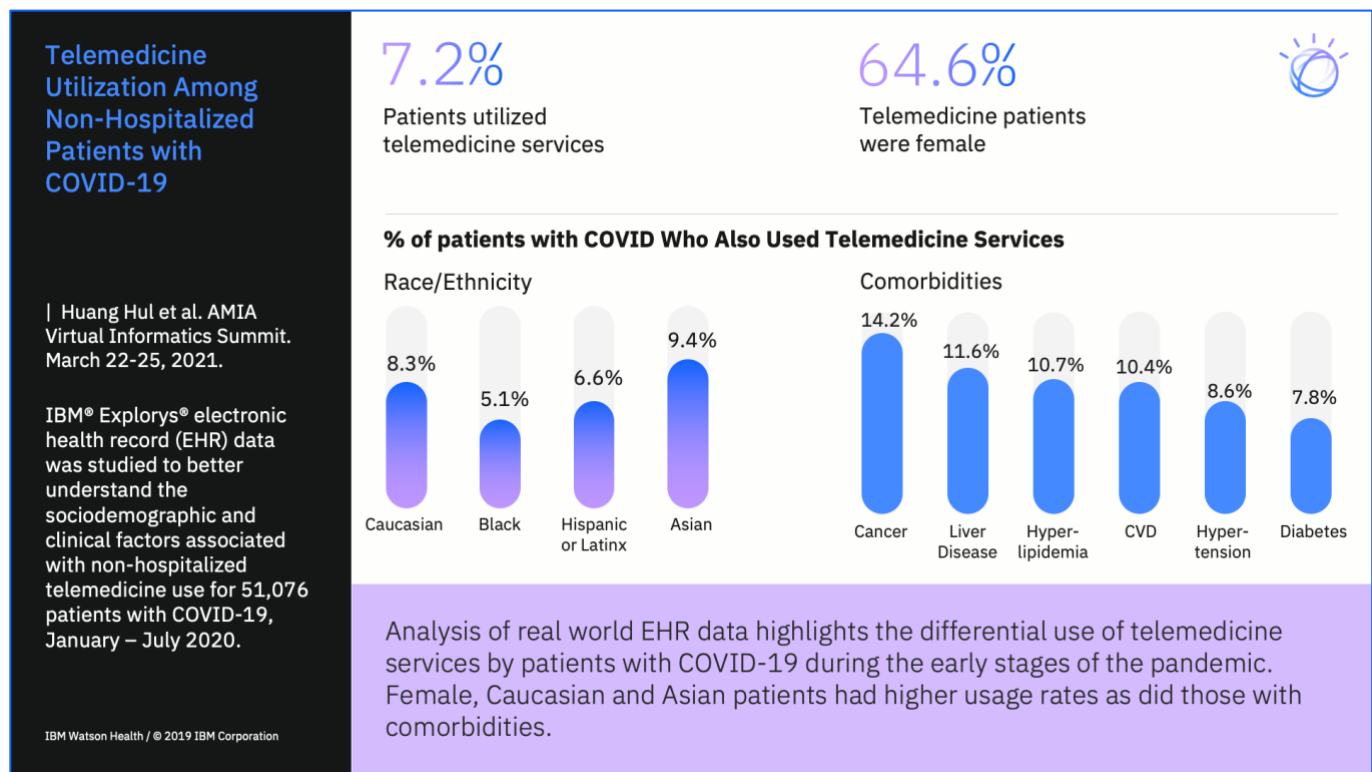


“One of the things with WCM that I like is that everything's in one place, and it's there, like it's one client.”

- Case Manager

Citation: Rizvi R, VanHouten C, Bright TJ, McKillop MM, Alevy S, Brotman D, Sands-Lincoln M, Snowdon J, Robinson B, Staats C, Jackson GP, Kassler WJ. **The perceived impact and usability of a care management and coordination system in delivering services to vulnerable populations: a mixed methods study.** *J Med Internet Res.* 2021;23(3):e24122. [doi: 10.2196/24122](https://doi.org/10.2196/24122)

Overview: Sonoma County California end-users and leadership were surveyed and observed in team meetings to gain a better understand of the benefits and challenges of using a Care Management and Coordination System powered by IBM Watson Care Manager and IBM Health and Human Services Connect 360 to help manage the county's homeless population needs. Respondents reported that this system provided valued assistance in data management/centralization and streamlined operations and communications. Perceived usefulness and perceived ease of use both scored a mean of 5 on a 7-point scale.



Citation: Huang H, Scheufele E, Dankwa-Mullan I, Jackson GP, Wang S. **Telemedicine utilization among non-hospitalized patients with COVID-19.** Poster presented at: *AMIA Informatics Summit*; March 22-25, 2021, Virtual.

Overview: The IBM® Explorys® electronic health record database was studied to understand the telemedicine profile of patients with COVID-19 who did not go to the hospital during the early months of the pandemic in the U.S. Individuals with comorbidities were more likely to use telemedicine. Male, African American, and Hispanic or Latinx patients had lower rates of telemedicine usage compared with female, Caucasian, and Asian patients.

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