

The State of Oncology Clinician Readiness



Understanding The Educational
Needs & Challenging Reality of
Oncology Trials

April 2023

INTRODUCTION

Cancer remains one of the most significant challenges in global health, ranking as the second leading cause of death worldwide. According to the World Health Organization, one in six deaths is due to cancer, with an estimated **19.3 million** new cases and **10 million** cancer-related deaths in 2020 alone.

In the race to beat cancer, annual R&D expenditures in Oncology are expected to exceed **\$64 billion** by 2026, generating more than **7,000 clinical trials** across various cancer types, including breast, lung, colorectal, prostate, and leukemia, among others.

Despite the significant investment in Oncology research, drug discovery, and development, the overall success rate remains relatively low. A 2018 analysis by the Tufts Center for the Study of Drug Development showed that oncology drug development takes **15% more time** and is **22% less likely** to receive regulatory approval than non-Oncology treatments.

Many of the challenges in accelerating the pace of new Oncology treatments can be traced to the complexity in today's clinical trials, workforce shortages, and the lack of sufficient clinician readiness to conduct each study. In a recent analysis of clinician learning data, ArcheMedX found that **93% of clinicians** researching and treating Oncology disorders are not yet ready to conduct clinical research as they lack the clinical mastery to effectively screen, diagnose, and apply novel treatments for a wide variety of cancers.

The same clinician data analyzed by ArcheMedX also demonstrated that clinicians participating in training powered by the Ready platform **increased their clinical knowledge and confidence** to screen, diagnose, and treat Oncology patients **by more than 9x**.

This report closely examines the underlying readiness of clinicians across multiple cancer types and demonstrates how engaging in more effective and tailored on-demand training can dramatically increase clinician readiness to conduct research and treat Oncology conditions.



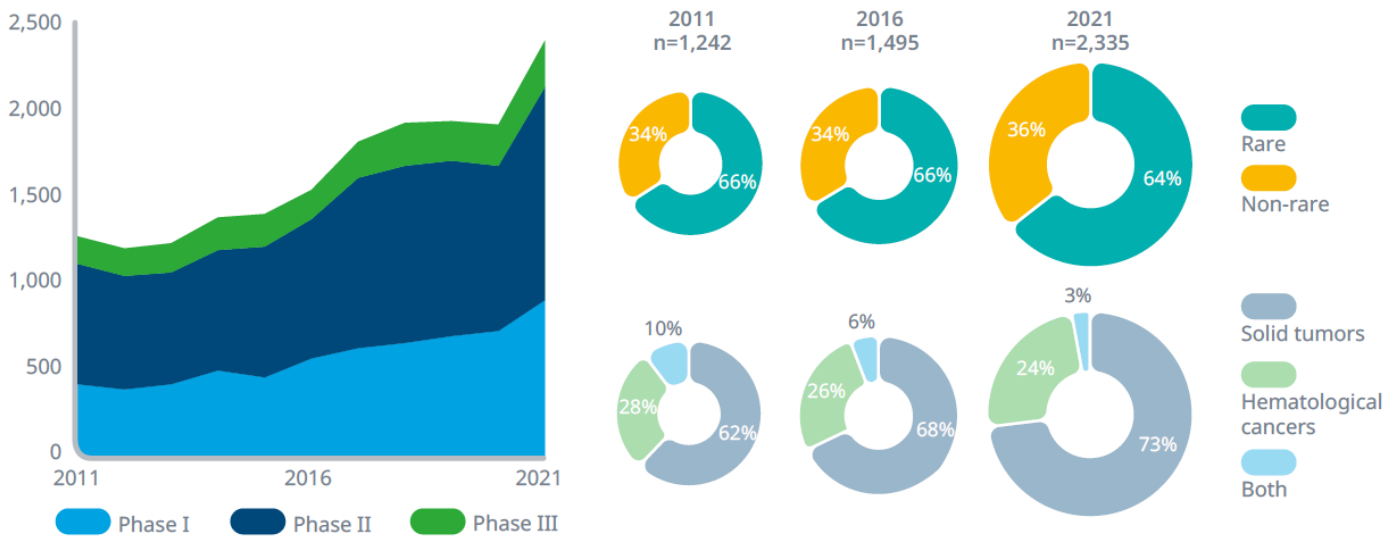
GLOBAL DEMAND FOR ONCOLOGY TREATMENTS

Researchers in JAMA Oncology estimate Cancer will cost the global economy **\$25.2 trillion** from 2020 to 2050, equivalent to an annual tax of **0.55%** on global GDP. The ongoing increase in cancer incidence and societal costs can be attributed to the aging and growth of the global population.

However, there is hope, as a new wave of innovative treatments and therapies are revolutionizing oncology and cancer-related clinical research. Advances in genomics, immunotherapy, and precision medicine are offering groundbreaking solutions in the battle against cancer.

As Oncology R&D expenditures increase, **IQVIA Institute's 2022 Oncology Report** shows that clinical trial starts are at an all-time high.

ONCOLOGY CLINICAL TRIAL STARTS 2011-2021



Source: Citeline Trialtrove, IQVIA Institute, Apr 2022.

Yet, despite the increase in new Oncology trials, too many of these studies will encounter operational risks and significant delays. These issues are exacerbated today as the clinical research industry grapples with compounding factors such as workforce shortages and the increasing complexity of clinical trials.

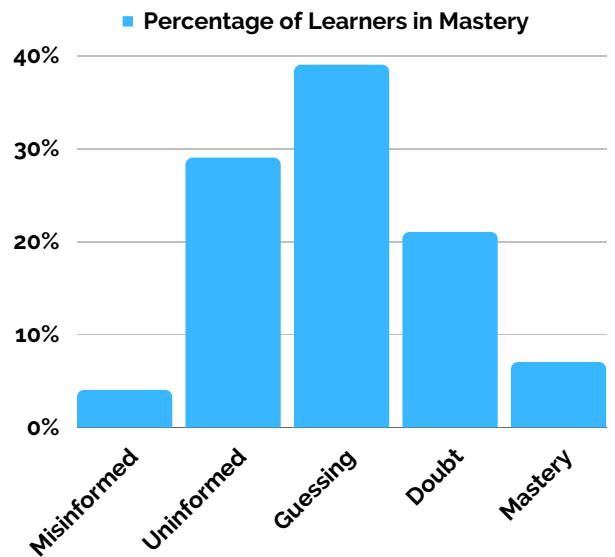
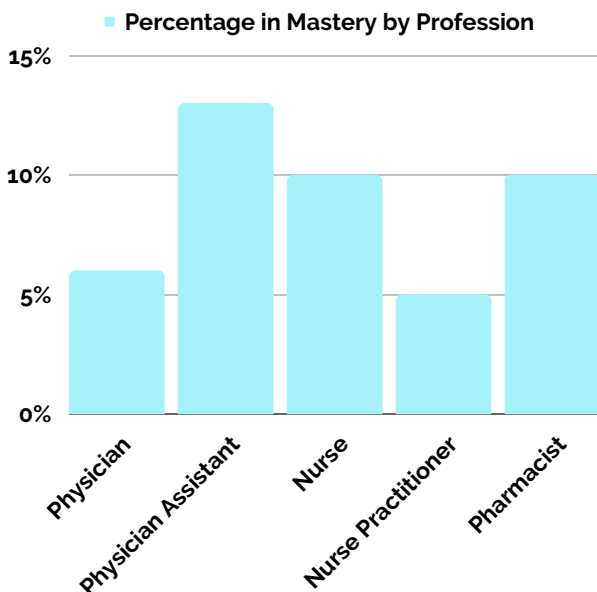
The Society for Clinical Research Sites (SCRS) reported last May that turnover of patient facing research staff increased from **35% - 61%** during the pandemic, significantly impacting site capabilities to conduct studies. Data does not yet demonstrate whether the turnover rate has improved in recent months.

In an often cited research study, **Tufts Center for the Study of Drug Development** found the greater the trial complexity, the worse the trial performance - across all measures. And with protocol procedures **up 44%** since 2009 and the total number of endpoints **rising 86%** between 2001-05 and 2011-15, **trial complexity is already at an all time high and increasing.**

The more complex the study or treatment, **the better prepared each individual engaged in conducting the trial must be.** This is especially true when most study sites and research teams are understaffed and overworked today. To improve the efficiency and success rate of Oncology clinical research, a multifaceted approach is required that addresses workforce shortages, performance challenges, and readiness gaps.

ASSESSING THE READINESS OF ONCOLOGY CLINICIANS

To understand the level of readiness in clinicians conducting clinical trials across cancer types, ArcheMedX analyzed learner mastery data generated by **11,478 clinicians** across **29 Oncology-related educational activities** and over **112 pre-assessment questions** powered by Ready, the industry's leading behavioral training and predictive analytics platform. The resulting analyses **revealed significant variations and alarming deficits in mastery** prior to the clinicians completing training on the Ready platform.



DEFICIENCIES IN CLINICIAN MASTERY

Identifying and understanding how well prepared and confident each clinician and trial team member is to conduct clinical research remains a critical step in **planning for study startup, delivering effective study training**, and achieving trial milestones and endpoints.

In addition to the variations in mastery identified across professions, the data demonstrated that more than **90% of clinicians** in clinical areas such as **Melanoma, RCC, Colorectal, NSCLC, Ovarian, and Prostate Cancer** lack the clinical mastery to effectively screen, diagnose, and develop personalized treatment plans.

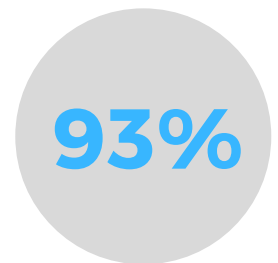
<u>CLINICAL AREA</u>	<u>MASTERY</u>
Melanoma	2%
RCC	2%
Colorectal Cancer	4%
NSCLC	5%
Ovarian Cancer	6%
Prostate Cancer	12%

Representative insights from the resulting analyses found:

In **Colorectal Cancer**, more than **9 in 10 clinicians** demonstrate deficiencies in explaining molecular profile-guided treatments and navigating adverse events.

In **Ovarian Cancer**, more than **9 in 10 clinicians** demonstrate deficiencies in understanding how to correctly use genetic biomarker testing.

In **Prostate Cancer**, more than **9 in 10 clinicians** demonstrate deficiencies in understanding PARP inhibitor combinations and how to engage patients in effective decision making.

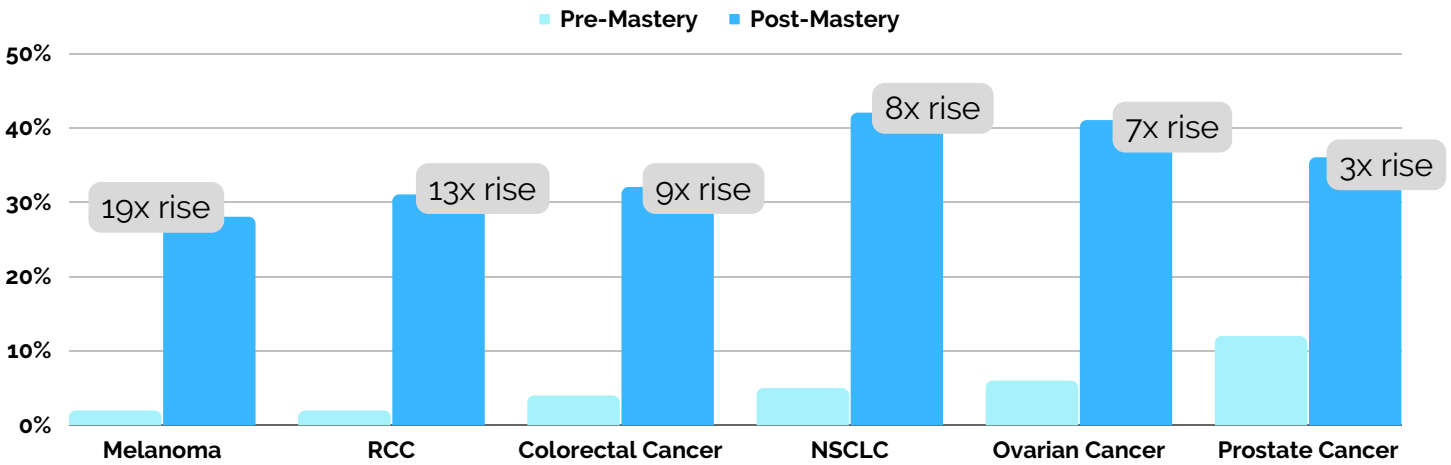


**of clinicians
lack baseline
mastery**

IMPROVING CLINICIAN MASTERY

Putting these results in context, the variations in clinician mastery and deficiency in readiness create material risk and can **delay patient enrollment, increase clinical trial costs, and worsen healthcare outcomes** in clinical trials conducted across cancer types.

Delivering more tailored and effective training can mitigate these risks by improving readiness across key research and treatment objectives. In analyzing the changes in knowledge and confidence after the nearly 12,000 learners completed more tailored training powered by the Ready platform, **the data demonstrated significant increases in baseline clinician mastery.**



ArcheMedX has continued to demonstrate with major players (including **Pfizer, GSK, Astellas, Novartis, Regeneron**, and others) researching and treating Oncology conditions, that there is a better way to educate clinicians on emerging therapies / treatment options and prepare them to conduct more complex clinical research.

As these data demonstrate, **utilizing the Ready platform** to deliver more effective on-demand education and training **significantly improves clinician capabilities regardless of clinical area.**

By engaging in document- and video-based interactive training powered by the Ready platform, these clinicians dramatically increased their mastery **3x – 19x**. Data demonstrated they are now **more capable and confident** in accurately diagnosing complex conditions, implementing new and emerging treatments, and navigating the complexities in developing personalized treatment plans for their patients.



increase in mastery

CONCLUSION

More than **90%** of clinicians lack the baseline clinical mastery to effectively conduct clinical research in Oncology related conditions.

Ready significantly improves training outcomes and increases study team performance by enabling life science and healthcare organizations to:

- Transform content (i.e., protocols, study documents, training materials) into interactive and tailored learning experiences.
- Automate training assignments and personalize learning paths.
- Nudge individuals to focus and reflect on key information.
- Deliver targeted remediation on-demand and over time.
- Assess clinician readiness to predict and improve clinical performance.

21 of the top 25 pharmaceutical firms, emerging biotechs, and global CROs rely on Ready to improve clinical performance.

Ready's unique training capabilities and predictive insights enable trial leaders to accelerate enrollment and avoid costly delays. Learn how Ready reveals study risks sooner and delivers more tailored, role specific training at www.archemedx.com/ready.

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82%
Ready

68%
At Ri

BY THE NUMBERS

58%
At Risk

85%

85% of clinical trials
are delayed

"The greater the trial complexity,
the worse the performance - across
all measures"

93% of clinicians are
not prepared to
conduct clinical
research in Oncology

93%

"Trial risks are magnified as clinicians
struggle to effectively diagnose,
screen, and treat patients with
Oncology disorders."

9X

Completing training
powered by the Ready
platform can increase
clinician mastery 9x.

82%
Ready

80%
Rea