Datacubed Health

DEFINING PATIENT ENGAGEMENT

A COMPREHENSIVE GUIDE TO ENGAGEMENT IN CLINICAL TRIALS

ESTABLISHING A BASELINE FOR BETTER CLINICAL TRIAL EXPERIENCES

This white paper outlines strategies to enhance communication and collaboration between patients and researchers, promotes a patient-centered approach, and aims to create a more inclusive and empowering environment. The mission is to integrate patient perspectives, improve data quality, and achieve better outcomes in treatment development.

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Introduction

Background on the misconceptions around patient engagement

Is patient engagement becoming the newest industry buzzword? **We think so.**

When speaking to people who work in the industry of managing clinical trials, it is clear that the concept of patient engagement is relatively undefined, thus allowing for ambiguous definitions to flourish. For some, it is any activity through which patients and participants in clinical trials are engaged. For others, it is how we collect data from clinical trial participants, be they patients or caregivers. We will focus on how to support clinical trial participants in a way that enables them to feel fully invested in the clinical trial they have decided to join. Purposeful patient engagement is essential in shifting a participant's feeling of solely being "data donors" towards feeling like valued partners in our scientific discoveries.

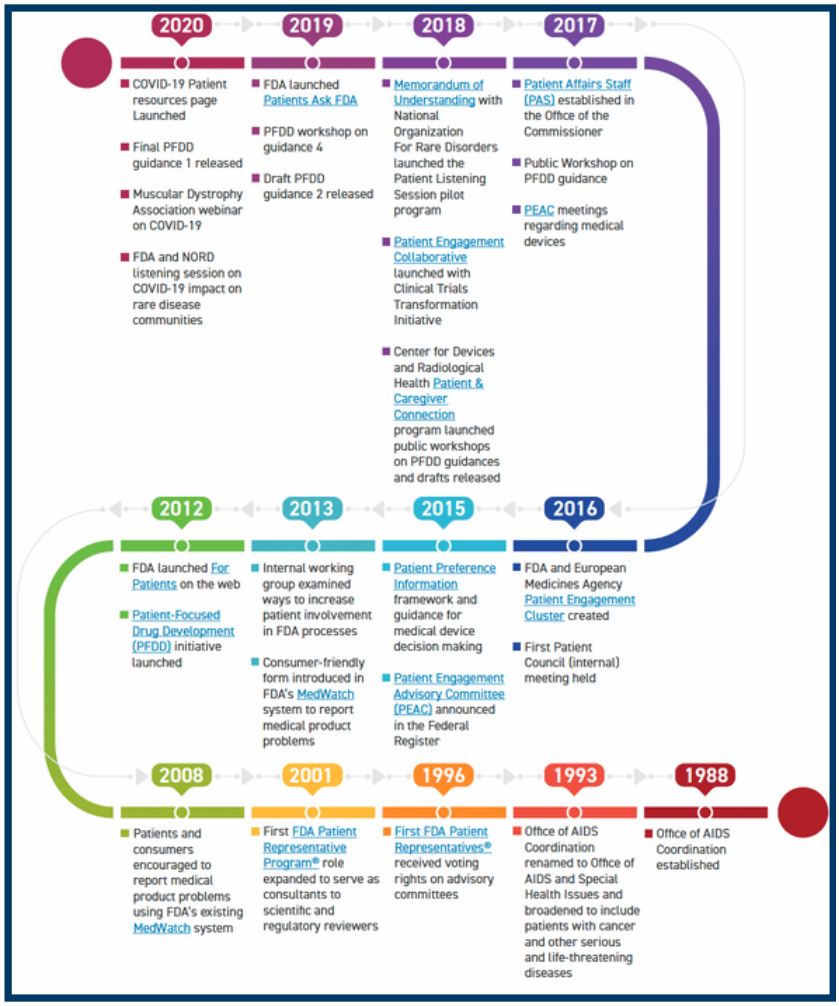
This is a critical component to the success of not only clinical trials but also the advancement of access to healthcare for everyone, everywhere. In viewing the engagement component as necessary, this white paper aims to define and benchmark the meaning of patient engagement to avoid marketing jargon and misinformation.

By reading this white paper, you will learn the following:

- What purposeful patient engagement looks like in the context of clinical trials
- What patient engagement is and what it is not - how to see past buzzwords and recognize true engagement tactics and strategies
- The potential impact of behavioral science on patient engagement
- The benefits of deploying a patient engagement strategy and how to overcome challenges
- The components required for success and best practices for deployment

Importance of patient engagement in clinical trials

As seen in the graph below, patient engagement isn't new but an evolving concept related to healthcare and clinical trials. Over the last few years, our industry has evolved to (rightly) become more focused on the needs of the patients that it aims to serve. One notable example is regulators requiring clinical trial sponsor organizations to incorporate patient feedback in the protocol design, recognizing their experiences, values, and expertise and therefore optimizing clinical trial procedures according to this feedback.



Source: Evolution of Patient Engagement at the FDA

Furthermore, we've seen increasing efforts to measure patients' experience, allowing sponsors to identify areas of improvement and collaborate with participants to action changes. Thus making clinical trials more patient-centric, both in design and operation. We have also seen emerging efforts to improve collaboration with trial participants in ways that keep them engaged and informed throughout each step of their clinical trial journey. But as we take these steps forward, unforeseen challenges, often from a lack of patient engagement, continue to arise. And in times of constrained financial means, the question inevitably becomes, "Is this worth the time and effort and associated costs?" We firmly believe that the benefits outweigh the challenges. This white paper will discuss why.

Defining Patient Engagement

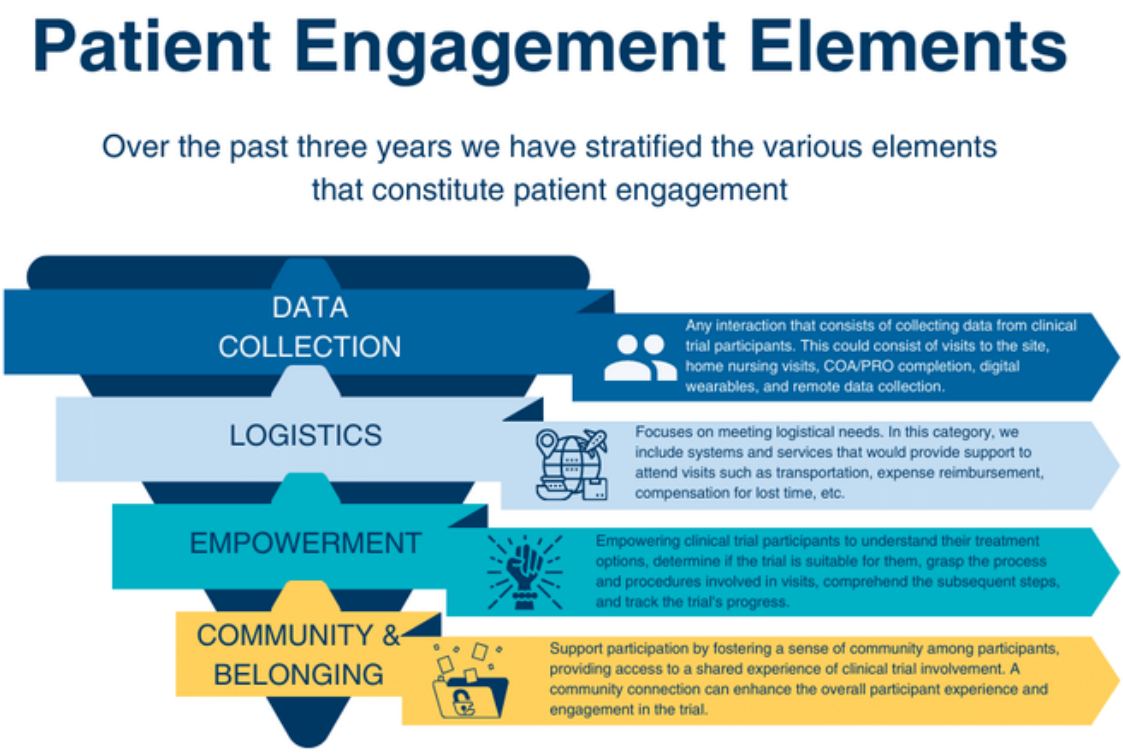
The concepts

Patient engagement refers to the involvement of patients in their healthcare, focusing on empowering them to take an active role in decision-making processes. We know this concept in healthcare is a familiar one. The Alma-Ata Declaration by the WHO in 1978 recognized the importance of patient participation in healthcare planning and implementation. Initially recognized in public health, patient engagement has evolved over time to include efforts that enable patients to participate in the development of healthcare delivery models and reshape clinical practice guidelines.

More recently, patient engagement has become a priority in clinical research, where patients are encouraged to participate actively and provide insight and feedback in the research and development process.

These strategies aim to make healthcare more efficient, patient-centered, and of higher quality by utilizing collaborative relationships with patients and caregivers and extending the benefits of their experiences, values, and preferences. Patient engagement promotes shared decision-making and collaboration between patients, caregivers, and healthcare providers to enhance the overall quality of care.

Benefits in the context of clinical trials



As shown in the figure above, we stratify the elements of patient engagement into Data Collection, Empowerment, Logistics, and Community and Belonging. Understandably, the Community & Belonging layer is the least common in today's clinical trial landscape. This is mainly due to the numerous constraints that come with data privacy and clinical compliance challenges, as well as the potential for bias in data collected or unblinding due to inadvertent sharing of information such as adverse events, symptoms, or treatment groups.

Patient engagement, while understood and accepted as an essential part of both the research process and other areas within healthcare, has yet to typically be implemented in consistent and meaningful ways that go beyond the passive inclusion of patients as research subjects. Too often, we emphasize the concerns and potential barriers to engagement. For example, the assumed risk of compromising the scientific integrity of the trial itself, the regulatory hurdles a study team must overcome, the added time that may be required to adequately collect patient input on things like protocol design, and general skepticism towards the contributions of patients and caregivers in this setting, often leading to superficial or tokenized patient engagement strategies, if at all.

It's time for a shift. Purposeful, holistic patient engagement has many benefits. It improves study outcomes. It leads to more realistic and pragmatic study protocol designs. It increases patient retention and active participation. It also fulfills researchers' ethical duty to engage with patients in their care.

Behavioral Science and Patient Engagement

Overview of behavioral science

Behavioral Science is the interdisciplinary study of human behavior. Behavioral science research has shown us how people make decisions, communicate, process information, and respond to incentives and constraints. This makes applying to clinical trials especially salient in discussions of engaging and retaining participants.

Behavior is shaped by internal and external factors that can be modified. Internal factors include the mental processes that underlie behavior, such as perception, attention, reasoning, and memory. External factors consider the social, environmental, and economic processes that impact decisions and social interactions.

Taking an applied approach to the implementation of behavioral science requires a review of insights that have emerged from nearly 50 years of academic and applied research about what drives human behavior, especially motivation, and decision-making. This is critical for the design of choice architectures in clinical research, where engagement, compliance, and retention are essential for study success.

Behavioral science research can guide patient engagement in clinical trials. For example, understanding factors that affect decision-making, such as anchoring, confirmation bias, or availability heuristics, can help develop tools to mitigate them in clinical trial design. The following section discusses some critical behavioral science concepts relevant to patient engagement in clinical trials today.

Key behavioral science principles relevant to patient engagement

1. Defaults and Expectations

Defaults refer to the choice made automatically if no action is taken. Defaults can significantly impact behavior because we humans tend to follow the path of least resistance. In behavioral science, we use defaults to frame choices in a way that presents the desired behavior as the option requiring the least effort. Humans strongly prefer the default option [1], even when the default is not the optimal choice[2].

The expectation is what behavioral scientists refer to as the "reference point" [3]. The reference point is the benchmark against which we evaluate outcomes and make decisions. For every situation, people always consider whether it is a cost or a benefit, which is always relative to what was expected. The reference point can be based on personal experiences, social norms, or other external standards. For example, research on social comparison has shown that we use other people's successes and failures as a reference point for our successes and failures[4]. This means that changing the reference point can influence whether something is experienced as a gain or loss. This is what it means to set expectations.

The primary purpose of using defaults and setting expectations appropriately is to minimize costs where possible. We know from research on loss aversion that people are more likely to take risks to avoid losses than to achieve gains and are more willing to accept small losses to avoid larger losses[5]. When costs are unavoidable, it's important to reset expectations in a way that makes the costs invisible. Technology is often effective in helping to reduce costs.

2. Motivation and Incentives

Motivation can be intrinsic or extrinsic. Intrinsic motivation is driven by inherent satisfaction or enjoyment, whereas extrinsic motivation is driven by incentives, either to gain a tangible reward or avoid punishment[6]. For example, offering monetary compensation for completing a task can motivate people to work harder and more efficiently[7]. The perceived value of an incentive can impact the way people behave. This can also undermine intrinsic motivation and introduce bias. If not carefully calibrated, incentives can be perceived as coercive [8].

3. Identity and Social Norms

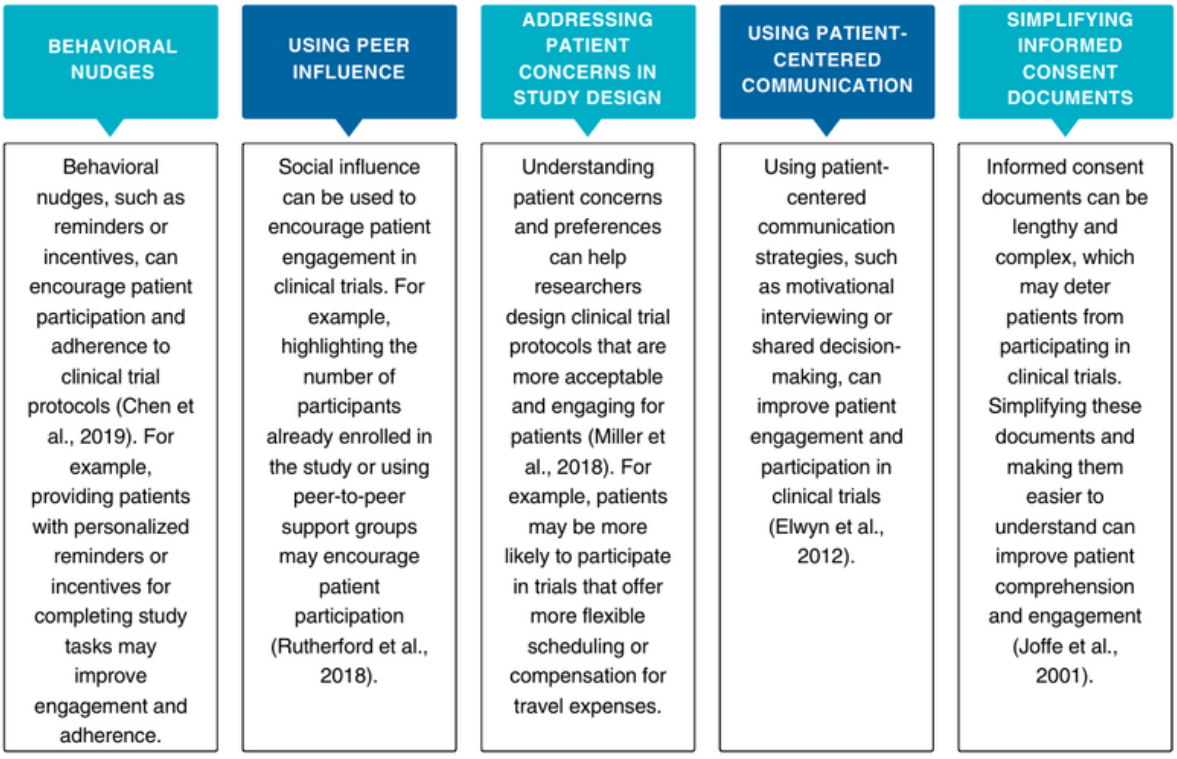
Identity is an intrinsic motivator that refers to our self-perception. Our cultural background, personal experiences, social roles, and similar factors can shape identity. Identity is often tied to social norms, which are the unwritten rules and expectations that guide behavior within a given context, group, or culture.

Social norms can shape identity by providing a framework for acceptable behavior in a given social context. At the same time, identity can influence our perception of social norms and our sense of belonging to the social group or culture that upholds them.

Behavioral science research has shown that our behavior is often consistent with our identity [9]. We constantly work hard to maintain our membership and status in a social group and find it difficult to behave in ways that are misaligned with our self-perception or the social norms of a group to which we belong. Therefore, connecting a person's identity to a context where an activity is a social norm makes them derive a sense of belonging from engaging in that activity. This important behavioral science tool can improve patient engagement in clinical trials. Research on behavior change has offered vital insights into how social norms and identity can help to drive engagement.

How these principles can be applied to patient engagement in clinical trials

Understanding the factors that influence human behavior and decision-making enables the design of interventions and strategies that can encourage engagement, compliance, and retention in clinical trials. In this section, we provide some specific examples of how behavioral science strategies can improve patient engagement in clinical trials, including:



Best Practices for Patient Engagement in Clinical Trials

Strategies for patient engagement

1. Information and communication

It can be overwhelming and intimidating to be presented with large amounts of complex information in a short amount of time. That's why it's essential for researchers to provide information to patients in a digestible format. Instead of overwhelming them with legalese and information overload in the informed consent form (ICF), a more tailored approach should be taken, allowing patients to receive information in a personally relevant way that fits their learning style. For example, some patients may prefer a lengthy document with academic references, others may prefer a cartoon or infographic, and some may prefer a combination. It's essential to make these options available so everyone feels empowered to learn about the clinical trial in a format that suits them.

In addition to providing information in a personalized way, it's also crucial to set up structures that support regular communication between participants and researchers. People generally want to feel valued and supported, and regular access to site staff during a clinical trial can help facilitate this. Patients can feel more involved in the process by identifying what information can be shared and then sharing these trial updates. Bi-directional communication is critical, and providing a platform for frequently asked questions (FAQs) can empower patients to ask more questions and feel more informed about the trial. It's essential to determine the best vehicle for FAQ submissions, recording, answering, and disseminating back to participants, as this can help ensure that they feel supported throughout the trial process.

By providing information in a digestible format, tailoring the approach to the individual, and setting up structures for regular communication between patients and researchers, clinical trials can be more inclusive and empowering for participants. As clinical trial professionals, it's our responsibility to create a supportive and empathetic environment that promotes engagement through communication, providing the information people want in the ways they want to consume it.

2. Empowering patients

An empowered patient is one who understands what their best treatment option is at all times. Deciding to participate in a clinical trial and deciding to remain in a clinical trial are difficult decisions, particularly as circumstances change and new treatments or trials become available. Providing the patient and their family with the correct information to make a decision is vital.

While the treating physician will play a leading role, the trial sponsor also has an important role in enabling patient access to information about their disease and the trial they are considering. An empowered patient is one who understands what their best treatment option is at all times. Deciding to participate in a clinical trial and deciding to remain in a clinical trial are difficult decisions, particularly as circumstances change and new treatments or trials become available. Providing the patient and their family with the correct information to make a decision is vital. While the treating physician will play a leading role, the trial sponsor also has an important role in enabling patient access to information about their disease and the trial they are considering.

Empowerment in clinical trials means providing participants with the right information to make informed decisions about their treatment options. This goes beyond the consent process, which is focused on obtaining agreement to participate in a trial. Empowerment means giving patients the knowledge and tools they need to understand their disease and the treatments that are available to them so that they can make informed decisions about their care.

This is especially important in the case of rare diseases, where patients may have limited options for treatment. By ensuring they have access to and understand the information, clinical trial sponsors can help patients feel more in control of their treatment options and decisions and act as partners in a trial setting. Sponsors work with medical teams, not in opposition, because we share a common goal. That goal is to advance access to treatment for those in need. Collaborating and sharing information can help everyone feel more connected to the research process and give them hope for the future.

3. Building trust and relationships

Guidelines for establishing research partnerships with patients suggest several factors are necessary to foster engagement and build trust. First, organizational policies and supportive researcher attitudes grounded in shared goals and assertive communication practices are essential. Principles of trust, respect, reciprocity, and co-learning should also be adhered to, with Patient-Oriented Research (POR) training provided for all team members.

As a sponsor, building trust and transparency should focus on relationship building and two-way communication with patients. By understanding what patients are asking for and how to respond to their requests, sponsors can demonstrate their commitment to patient-centered research. As discussed above, clear and transparent communication is also essential, as is providing easily digestible information about the trial. Including the risks and benefits of participation, disclosing any conflicts of interest, and being transparent about the study design can help to build trust with participants.

Patient involvement in the study design process can ensure the trial is relevant to their needs and concerns. They can provide valuable input on study design, recruitment strategies, and outcome measures, and their involvement can lead to increased engagement in the trial. Engaging patient advocates can also build trust and increase engagement in clinical trials. Advocates can inform patients about the trial, provide emotional support, and campaign for patient interests, leading to better outcomes and increased trust between patients and sponsors.

4. Incentives and rewards

To be effective, the design and implementation of incentives and rewards must be driven by an understanding of human behavior to reduce potential bias and avoid unintended consequences. How incentives are structured must also meet institutional review board (IRB) and independent ethics committee (IEC) standards and guidance.

Best practices from behavioral science can guide building incentives and rewards in clinical trials, including the following:

Align incentives with patient values

Understanding what motivates people to participate in a clinical trial can help tailor incentives appropriately. For example, patients may value access to experimental treatments or the opportunity to contribute medical knowledge or connections to others with similar diagnoses and experiences. A caregiver's motivation may also differ from those of a patient, so incentives need to be tailored to those preferences.

Use non-financial incentives

Non-financial incentives can help to reinforce the value of participation and promote retention. This can include personalized feedback about health status or study progress, digital or other symbolic rewards for completing study activities, testimonials from other patients, and access to information. For example, providing regular updates about study progress or sharing information about the impact of the study may improve engagement.

Avoid undue influence

Incentives and rewards should not unduly influence decision-making or compromise autonomy. This is critical for financial incentives, such as travel reimbursements or participation compensation. While these can improve engagement, incentives should not be so significant that patients feel pressured to participate or make decisions that are not in their best interests. In general, the goal is to provide the right-sized incentives to be motivating but not coercive.

Consider timing and frequency

Incentives and rewards should be timed appropriately to maximize their effectiveness. For example, providing incentives at the beginning of a trial may encourage enrollment, while providing rewards for the completion of different study activities may encourage compliance and adherence. Here we can leverage behavioral science research on reinforcement learning by pairing rewards with actions to drive compliance. Also, behavioral science research on the human tendency to overweight low probabilities suggests that providing even small rewards infrequently or randomly can be very motivating for participants.

Case Studies of successful patient engagement in clinical trials

Reviewing case studies of successful patient engagement in clinical trials can help to identify common approaches that can be combined for a successful strategy. Two key examples are The Parkinson's Progression Markers Initiative (PPMI) and the "All of Us" Research Program:

The Parkinson's Progression Markers Initiative (PPMI): Launched by the Michael J. Fox Foundation in 2010, PPMI is a large observational clinical trial designed to identify biomarkers of Parkinson's disease onset and progression. The study has successfully engaged and retained patients with a 95% retention rate. PPMI used a targeted recruitment program and engaged patient advocates in study planning and implementation[10]. The study also uses patient-centric language in study materials and provides regular study updates to all participants.

The "All of Us" Research Program: Launched by the National Institutes of Health after a 2015 precision medicine working group, All of Us is a precision medicine initiative that aims to build a diverse health database by enrolling one million or more participants across the United States in a longitudinal research study. The program has successfully engaged participants through community outreach and education, personalized health feedback, and engagement of community partners in study planning and implementation[11].

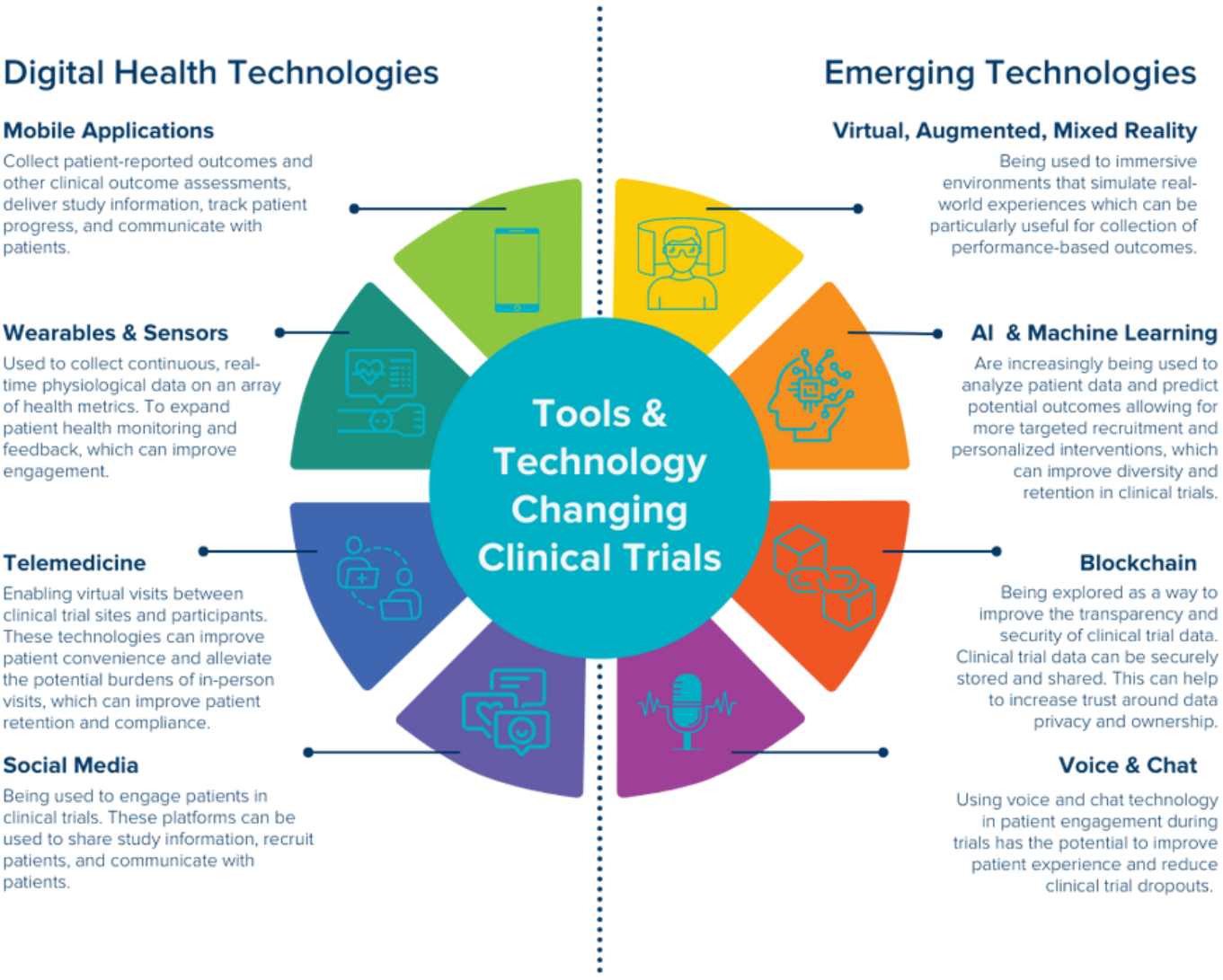
These case studies illustrate that successful patient engagement in clinical trials requires a tailored approach that includes participants in the planning and implementation to incorporate their concerns and preferences. Successful strategies that were common between both reflect many of the recommendations in this white paper, including the use of tailored, patient-centric language in study materials, the provision of personalized health feedback and study updates, and the engagement of patients and advocates in study planning and implementation.

Challenges & Opportunities for Patient Engagement in Clinical Trials

Opportunities for improving patient engagement

1. Tools and Technologies

Digital health technologies present cost-effective and time-efficient strategies to incorporate patient perspectives and actively involve them in clinical research. These strategies, ranging from established to emerging, are evolving the landscape of patient centricity in clinical trials.



2. Regulatory push for patient centricity and diversity

Regulatory bodies have increasingly prioritized patient-centricity in drug development in recent years. For example, the Food and Drug Administration (FDA) has offered guidance for incorporating patients into clinical trials and using patient-reported outcomes (PROs) as key endpoints[12]. The European Medicines Agency (EMA) has also ensured that patient perspectives inform regulatory decisions, creating mechanisms for patient involvement in regulatory guidance, scientific advice, and product authorization[13].

The primary aim of these initiatives is to align clinical trials with patient needs and preferences. The guidelines for including PROs in clinical trial endpoints marked a significant step towards integrating the patient perspective in regulatory decisions. This was reinforced by the Patient-Focused Drug Development initiative[14]. Efforts have also been made to simplify clinical trial information and provide timely access to results for participants, aiding retention and inclusion. Both the FDA and EMA also recognize the potential of digital technologies in patient engagement. The FDA has issued guidelines on mobile medical applications and decentralized clinical trials [17], while the EMA has a Digital Health Task Force for guiding digital healthcare use.

Patient advocacy, advancements in personalized medicine, and technological progress fueled this regulatory emphasis on patient engagement and diversity in drug development. Post-implementation evidence indicates that patient involvement enhances recruitment and retention and leads to more pertinent trials[15]. Additionally, using PROs as primary endpoints in clinical trials results in more relevant outcomes[16].

3. The role of collaboration

Collaboration between patients, researchers, Sponsors, and CROs ensures meaningful patient engagement in clinical trials. By establishing a strong partnership, we can create a patient-centered approach that values the unique perspectives and needs of individuals throughout the trial journey. As the ultimate beneficiaries, patients bring their valuable insights and lived experiences, while researchers and healthcare professionals provide the necessary expertise and guidance.

This model fosters mutual respect, open communication, and shared decision-making, empowering active participation in trial design, recruitment, and study conduct. Studies have shown that engaging patients throughout the research process leads to more patient-centered outcomes and ensures that clinical trials address issues that are most relevant to patients[15] leading to improved patient satisfaction and overall trial success. Similarly, studies have shown that the positive impact of patient-researcher collaborations on recruitment and retention rates ultimately benefits the trial's validity and generalizability[18]. By embracing collaborative approaches, we can create a healthcare ecosystem that values patient perspectives, builds trust, and improves clinical trial outcomes.

4. Greater patient involvement in study design and conduct

Patient-driven study design and conduct empower individuals to contribute their unique perspectives, expertise, and insights throughout the clinical trial journey.

The positive impact of patient involvement in study design and conduct highlights benefits such as increased participant satisfaction, higher recruitment and retention rates, and enhanced data quality[19]. Similarly, studies have shown that patient engagement in trial design resulted in more relevant research questions, improved medication/intervention adherence, and better compliance with study protocols[18].

Conclusion

Summary of key points

By actively involving communities and stakeholders as early as possible, clinical trials can tap into a wealth of collective knowledge and resources, ensuring that research is relevant, meaningful, and reflective of diverse patient populations. Empowering patients to actively participate in the design and decision-making process of clinical trials fosters a sense of ownership and trust, resulting in improved recruitment, engagement, and adherence throughout the study. Effective communication, employing clear language and tailored messaging, enables patients to make informed decisions and actively collaborate with researchers. Incorporating insights from behavioral science, such as understanding patient motivation, incentives, and identity, allows for developing interventions that inspire and sustain engagement.

Moreover, integrating technology in clinical trials offers tremendous opportunities for streamlining processes, enhancing data collection, and increasing access. Leveraging innovative platforms and tools can facilitate remote participation, real-time data monitoring, and personalized interventions, ultimately enhancing the overall patient experience. Finally, establishing robust feedback mechanisms ensures that patient voices are heard, concerns are addressed, and lessons are learned to continuously improve clinical trial design and implementation.

In essence, embracing patient engagement as a core principle in clinical trial conduct can potentially revolutionize the research landscape. By recognizing and valuing the contributions of patients, promoting their active involvement, and employing a comprehensive approach that addresses their needs and motivations, we can foster a more patient-centered and inclusive research environment. Such an approach not only improves clinical trial outcomes but also demonstrates our commitment to supporting patients on their healthcare journey, leaving no one behind.

Call to action

To clinical trial sponsors, Contract Research Organizations (CROs), and sites, the call to action is clear: it is imperative to prioritize and enhance patient engagement at every step of the trial process. By implementing the following strategies, we can collectively improve patient experiences, study outcomes, retention rates, and overall participant diversity.

Six Points to Improve Engagement

Active Patient Involvement

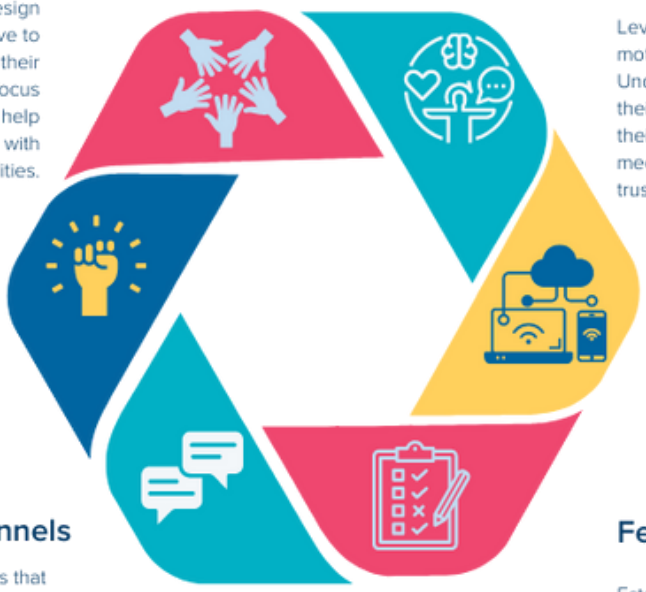
actively involve patients in the study design phase. Seek their input and perspective to ensure trials are patient-centric and address their unique needs. Patient advisory boards or focus groups can provide valuable insights and help shape protocols that are more aligned with patient realities.

Culture of Empowerment

Foster a culture of empowerment by providing patients with transparent and accessible information. Use plain language in study materials, consent forms, and communications to facilitate understanding. Empower patients to make informed decisions by educating them about the purpose, benefits, and potential risks of participation.

Effective Communication Channels

Establish effective communication channels that encourage ongoing dialogue. Maintain open lines of communication between sponsors, CROs, sites, and patients throughout the trial. Utilize technology such as patient portals, mobile apps, or virtual visits to facilitate real-time communication and provide timely updates.



Behavioral Science Principles

Leverage the principles of behavioral science to motivate and reward patient participation. Understand patient motivations, acknowledge their efforts, and provide incentives that align with their values. Consider implementing identity lock mechanisms to protect patient privacy and build trust.

Embrace Technology

Embrace technology to streamline trial processes and improve convenience for patients. Explore options for remote participation, wearable devices for data collection, and virtual trial platforms. This will enhance patient convenience, reduce burdens, and expand access to diverse populations.

Feedback & Evaluation

Establish mechanisms for continuous feedback and evaluation. Actively seek patient input, listen to their concerns, and use their feedback to drive improvements. Learn from past experiences and incorporate lessons into future trial designs.

What The Future Holds

In conclusion, let's imagine a future where patient engagement is fully realized in clinical trials, and research becomes patient-centered, inclusive, and efficient. What value would this create for patients, caregivers, healthcare professionals, sites, and sponsors? By actively involving patients, empowering them, incorporating their feedback, and embracing technology, we will witness improved recruitment, retention, and diversity in clinical trials. This transformative shift will not only enhance the validity and impact of research findings but also ensure that the needs and perspectives of patients are at the heart of medical advancements, ultimately improving healthcare outcomes for all. This is the future we want to create. **Will you join us?**

About The Authors

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Katherine's career has been marked by her commitment to enriching user experiences. She holds a Master's degree in Health Information Science from Western University. As a health services researcher, Katherine has worked directly with patients, caregivers, health care professionals, and other stakeholders to co-create care solutions and services in the areas of digital health, IT, home and community care, palliative and end-of-life care, medical education and cancer care policy and strategy. A strong advocate for patient engagement, Katherine's passion truly shines through her work in enhancing participation in clinical trials. Her broad spectrum of experience has equipped her with a deep understanding of the sector, allowing her to foster better, more human-centered patient interfaces and systems in healthcare.*

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Aedan fervently focuses on enhancing the experiences of patients participating in clinical trials. He brings to his role a rich background in clinical operations and technology gained from previous tenures at Roche, IQVIA, and Merck Serono. Aedan's core mission is to elevate patient needs to the forefront, leveraging his expertise to bridge the gap between business and technology strategy. Guided by an innovative spirit and a keen ear for patient feedback, Aedan ceaselessly seeks ways to revolutionize patient-centric care.*

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An expert in biomedical research, digital health, population health, global mental health, and health policy. Dr. Onakomaiya has experience in leading diverse R&D teams, creating sustainable value for patients, researchers, and stakeholders. She is fascinated by the neurophysiology of trauma, neurological diseases, and mental health and their intersection with technology. Additionally, Dr. Onakomaiya is passionate about using behavioral science and real-world data to address global health challenges and improve healthcare systems worldwide.

** Both Katherine and Aedan's contributions to this white paper come after several years of working on clinical trials related patient engagement projects within Roche. Their views are their own based on their respective experiences and do not necessarily represent the views or position of Roche as an organization.*

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