Patient Enablement Programs for Clinical Trial Adherence

Introduction

“Drugs don’t work in patients who don’t take them”. This statement is pertinent not just for the drugs launched, but also for test drugs in a Clinical Trial setting. Patient adherence is a critical component in a clinical trial as it directly impacts validity of the clinical trial data. It also plays a pivotal role in deciding the outcome of clinical trials - in determining the drug’s efficacy and in receiving regulatory approval to launch the drug after establishing dosing guidelines. Patient adherence affects not only pharmaceutical manufacturers from a spend point of view, but also the scientific and regulatory community.

This paper aims to analyze the mechanisms of non-adherence in a clinical trial scenario, its implications on the trial outcome, and HCL’s role in designing trial-specific Patient Enablement Programs (PEP) to combat non-adherence.

Challenges in Clinical Trial Adherence

Clinical trial adherence can be defined as the “level of correspondence between protocol-required behaviors and participant behavior”. This includes - following treatment regime (right dose at right time, under right conditions), regular visit attendance, assessment completion, and reporting as required (including self-reporting through patient diaries and in-person reporting at sites), etc.

According to the New England Journal of Medicine, “the average adherence rates of clinical trials are only 43% to 78% among patients receiving treatment for chronic conditions. Non-compliance costs pharmaceutical companies USD30Bn in lost revenues and $8Mn to $40Mn per drug trial. It costs an average of $6533 to recruit a patient for a trial, and three times more to recruit a new patient if one is lost due to non-compliance.”
Clinical trial non-adherence could lead to one or more of the following:

a. Increased trial cost due to:
   • Increase in the recruitment of patients to maintain adequate sample size - 20% decrease in medication adherence may result in the need for >50% increase in sample size in order to maintain equivalent power\(^2\)
   • Increased time to complete a trial with 50% mean compliance could require approximately five times as many participants as a trial with 100% compliance\(^3\)
   • Additional resources needed in terms of medicine, labs, personnel, and processing
b. Inaccurate and usually underestimated efficacy of new drugs - Non-adherence creates ambiguity around data collected during trials and the decisions concerning the next phase of drug development.
c. Limited accuracy and cost-effectiveness of Pharmacokinetics and Pharmacodynamics analysis.

Patient Support/ Enablement Programs: An Industry Perspective

Pharma companies have woken up to address the issue of non-compliance to drugs/medications through effective Patient Support Programs (PSP) for some of their drugs, post launch\(^4\). Reports indicate that the industry spends close to 3% on a PSP that could potentially manage revenue leakage due to non-adherence\(^5\). Pharma companies embark on PSPs after the drug is launched only for chronic and slowly progressive diseases, with the availability of measurable outcomes and clear availability of evidence-based clinical practice guidelines. A PSP is designed to enable patients to self-manage and self-monitor their disease. Diseases, for which self-administrable medications are prescribed, are better suited for PSP programs because these patients visit the healthcare practitioners only during complications or exacerbations. Common diseases covered by PSPs led by leading pharma companies include hypertension, diabetes, coronary artery disease, migraine, Asthma, and multiple sclerosis.

Only phase-2 and phase-3 studies will be chosen for PEP since phase-1 studies are in-house studies and patients are under direct observation of the principal investigator. The ease of drug administration from a patient’s self-management and self-monitoring perspective is a common link that connects a PSP post drug launch and PEP designed for trial adherence.

HCL’s Patient Enablement solution for Clinical Trial Adherence

HCL observed that the pharma industry lacks a dedicated support program for ensuring “Clinical Trial adherence”. There is an imminent need for a dedicated PEP that addresses needs of all the industry stakeholders such as clinical trial investigators, patients/ care-givers, and sponsors/ CROs. Needs of these stakeholders are summarized below:

1. Investigators/ site coordinators:
   a. Enable site visit compliance and medication adherence through reminders to patients, analytics on visit completion status, and medication adherence
   b. Enabling assessment adherence (data capture) through QoL (Quality of Life) observations, real-time data capture through eDiaries/mPROs (online and offline), and associated analytics
   c. Providing Help-desk support for handling trial and safety queries

2. Patients/ care-givers
   a. Help-desk support for visit and medication reminders, follow-up calls, and capturing patient-reported outcomes

3. CRO/ sponsors
   a. Site-wise enrollment status, risk assessment, and comparison of trial sites based on adherence levels
There is a need for the PEP provider to partner with pharma companies right at the time of clinical trial design, so that the PEP framework can be incorporated as part of the study protocol and necessary FDA approvals obtained for a roll-out.

HCL’s PEP architecture is depicted below:

HCL’s Integrated PEP comprises of the following key components:

- **A CRM system** that enables:
  - Patient onboarding
  - Risk stratification of trials at a study level
  - Risk stratification of trials at a pharma/ CRO level
  - Flexibility to capture information through different systems feeding into the enablement platform. These vary from lab data, EMR, EHR data, and data from wearable medical devices such as BP monitors, blood glucose monitors, and devices that feed patient monitoring data directly into the enablement platform. Such integration for data capture will have to be disclosed in the Clinical Trial Protocol during Clinical Trial Design and necessary regulatory approvals need to be obtained.

- **A portal** with application services that includes one or more of following:
  - Wireless transmission of medication information through “Smart Labels” medication adherence tracking
  - Reminders
  - QoL tracking
  - Adverse event tracking and alerts

- **A KPO help-desk** that follows up with patients on medication reminders, and also functions as a 24x7 help-desk for handling queries on trials. The help-desk also has language localization capabilities for Safety Query handling and Adverse Event reporting.

- **Patient enablers**: A core team of expert doctors and statisticians working on patient profiling, stratification, and collecting real-time compliance data, to correlate compliance with outcomes and dosing. The team churns data for predictive modeling and analytics for assessment adherence/ protocol adherence.

- **Integration with patient eDiaries or ePRO** to collect information on patient compliance on a real-time basis. This step is subject to regulatory approval as part of the study protocol.

- To cater to a wide range of population, PEP supports multiple reach modes such as voice, email, web, text messaging, eFax, direct mailing, smartphones, and custom devices. The communication stream should be selected at the design stage of the trial and incorporated in the Study Protocol.

- **Robust Datawarehouse** platform backend, with capabilities to automatically collect adherence metrics, summarize, and report in real-time.
Conclusion

Patient enablement programs will definitely be the way forward as one of the crucial steps for ensuring trial adherence. HCL has experience in successfully running Patient Support programs for leading Pharma majors in various therapeutic areas and most of the components described in the whitepaper have already been developed while some are earmarked for future development. HCL is actively working with clients and partners to take this initiative to fruition.

References

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About the author

Sangeetha has 8+ years of experience in Pharma R&D IT, and close to four years of Life Sciences research experience. She is a trained and certified LIMS expert. At the Pharma Business Solutions Group, her role involves building business propositions in the Pharma R&D space by analyzing emerging pharma trends and validating them with pharma customers. She is involved as a SPOC in the Clinical Transformation initiative that delivers end-to-end clinical solutions in the pharma space. Prior to HCL, Sangeetha has worked with leading IT companies as a Business Analyst and Domain Consultant. She holds a Masters in Forensic Science and an MBA.

About HCL

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