Premier Insight 279

Harnessing Critical Experience to Plan and Execute a Dual-Submission Study

Background

Point-of-care (POC) tests offer significant convenience for patients and physicians, as well as cost-savings for payers. Yet, achieving regulatory approval can be daunting. Sponsors not only have to show safety and efficacy, they have to prove that the test is simple and poses an insignificant risk of an erroneous result. Assembling such proof requires thoughtful trial design and data collection.

Objective

A sponsor approached Premier Research with a single-use, multiplexed, molecular, POC test to qualitatively diagnose influenza A and B, by detecting viral RNA in nasal swabs from symptomatic patients. Our task was to obtain sufficient data to support a dual 510(k)/CLIA Waiver submission. To succeed, we needed to develop a clear strategy to ensure that the data necessary to support both 510(k) clearance and CLIA Waiver would be collected within a single clinical trial.

13 sites with required naïve staff

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Exceptional PI training materials

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Dual 510(k)/CLIA Waiver in one clinical trial

D I A G N O S T I C S

Meeting the Challenges

Challenge #1

A study design encompassing both 510(k) and CLIA Waiver specifications is complex.

Our Strategy

Premier confirmed that all sites participating in the trial not only had the ability to perform POC testing on site, but also had staff who would be considered "naïve" per FDA definition. We helped develop the self-guided training materials for the sites, as well as a familiarization experiment to train staff on the POC device before patients were enrolled. Finally, we monitored study results weekly to track the number of positive samples for each naïve user and the number of results overall so that the CLIA criteria of five positives per user and 360 samples tested overall were met.

Challenge #2: Tracking patient data across sites

The sponsor had a slight delay in finalizing the study protocol and manufacturing study devices. Therefore, sites were unable to begin enrolling subjects until late in the flu season. Still, we needed to collect a sufficient number of samples rapidly.

Our Strategy

Premier recommended using regulatory-ready back-up sites which could be up and running within a week's time, if needed. We then carefully allocated devices based on the level of flu activity at the location of each site to ensure that enrollment remained on schedule.

Challenge #3

Sample-collection requirements for the study were complex. Yet, proper sample collection and shipment were imperative to ensure sample integrity.

Our Strategy

Sample collection posed multiple challenges:

- The study required site personnel to use two different types of swabs – a nasopharyngeal swab (NPS) for the comparator device but a midturbinate swab for the investigational device.
- If a subject had any type of swab taken for standard of care, then the research staff had to collect the research swabs from the opposite nostril.
- Study requirements also included testing the midturbinate swab within two hours of collection and storing the NPS swab at 2-8°C until shipment – which had to occur on day of collection.

To ensure adherence to all protocols, self-guided training materials addressed the complexities of swab selection and nostil choice with site staff ahead of study start. To simplify NPS sample organization, Premier created a case report form for tracking information to ensure swabs were stored properly and shipped daily, and then delivered to the reference laboratory.

Challenge #4

While quality results were imperative for approval, the POC setting made daily quality control challenging.

Our Strategy

The results from the investigational device were uploaded via iPhone pictures immediately after testing, enabling the study team to monitor both patient results and ongoing quality controls in real time. We immediately reported any concerning trends among naïve users or device lots to the sponsor to allow prompt troubleshooting.

Takeaway

Dual submissions pose a range of difficulties. Success depends on partnering with a team that has the experience to strategically address the multiple requirements.

Study Description

Dual 510(k)/CLIA Waiver

Therapeutic Area

Infectious Disease

Pulmonary/Respiratory

Geographic Scope

United States

Number of Study Sites

13 CLIA-certified sites

Number of Patients Enrolled

573

Outcome

All specifications to support both 510(k) clearance and CLIA Waiver were achieved within a single clinical trial