Innovative Direct-to-Physician Retrospective Chart Review Approach: Synthesized Learnings From Completed and Ongoing Studies

Poster No. SA5

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Background

- Natural history studies or studies of real-world drug utilization, safety, and effectiveness are frequently executed using electronic medical records data.
- Retrospective chart review is a study methodology widely applied that aims to collect retrospective real-world data from medical records when existing structured healthcare data sources are not available, appropriate, or relevant.
  - These studies traditionally are site-based, which involves operational management.
- **Challenges to site-based retrospective chart review studies:**
  - Start-up timelines, site burden, and funding requirements.
  - Costs of operationalizing the study (i.e., site fees, large study team needed)
  - Though single-country studies are typically more efficient/less complex than multi-country studies, single-country studies still face the above challenges, with associated risks for delay.
- **Potential solution for site-based challenges:**
  - In some countries, these challenges may be addressed by using a direct-to-physician chart review methodology.

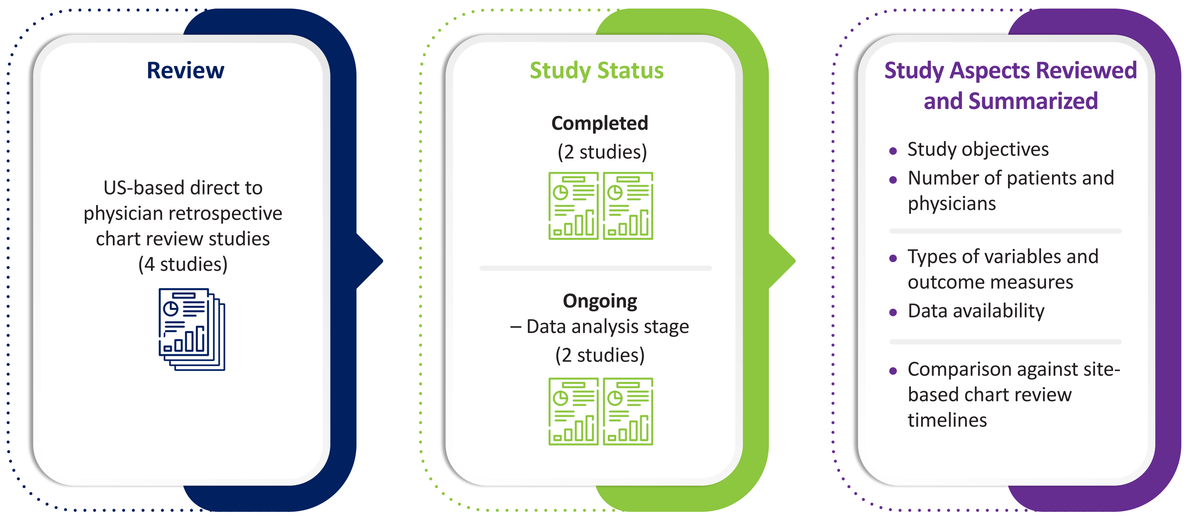
Objectives

- To describe recently undertaken direct-to-physician chart review studies to inform researchers on appropriate use-cases, study design considerations, and share synthesized metrics and learnings.

Methods

- We performed a review of the four US-based direct-to-physician chart review studies recently conducted within our organization.
- The summary of study status and key evaluations conducted are presented in **Figure 1**.

Figure 1. Descriptive caption



Physician Network and Methodology

- The pool of physicians for potential participation was mostly taken from PPD's proprietary network of healthcare professionals (HCPs).
  - PPD's HCP network is stratified by geographic location, practice setting, patient caseload, and specialty.
- Physician eligibility was assessed via a short survey capturing patient caseload (based on study-specific eligibility criteria), physician duration in practice, and willingness to participate in the study.
- Following physician eligibility assessment, medical chart abstractions according to the study design were performed by the HCPs.
  - Each study specified a maximum number of patient charts that each physician could abstract, to minimize physician-level biases in treatments or outcomes assessments.

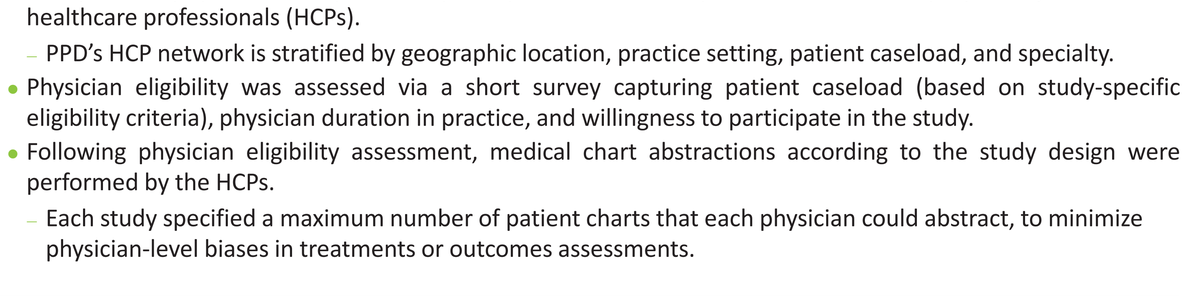
Results

Table 1. Overview of Study Types, Populations, and Key Variables/Outcomes

Study Type	Study Population and N	Therapeutic Area	Type and Approximate Number of Physicians	Study Description	Key Variables/Outcomes
Drug utilization and effectiveness	Pediatric patients, n=119	Oncology	Hematologists and oncologists, n=24	To describe the utilization and effectiveness of a treatment for a rare oncology indication	Demographics/medical history, treatment patterns, clinical outcomes
Natural history study[1,2]	Pediatric patients, n=14[a]	Nephrology	pediatricians and nephrologists; n=2[a]	To understand the feasibility of data collection in a rare pediatric indication	Demographics/medical history, treatment patterns, clinical outcomes
Natural history study	Adult patients, n=103	Oncology	Hematologists and oncologists, n=36	To understand the patient profile, treatment patterns, effectiveness, and safety of patients in pre-specified lines of therapy and to identify perceived physician-reported challenges with disease management	Demographics/medical history, treatment patterns, clinical outcomes, adverse events of special interest, physician-level challenges and burden
Drug effectiveness/ safety	Adult patients, n=122	Oncology	Hematologists and oncologists, n=23	To describe the patient profile, treatment patterns, effectiveness, and safety of a specified drug to treat a rare oncology indication	Demographics/medical history, treatment patterns, clinical outcomes, adverse events of special interest

[a]In an additional country outside of the US, sites were included for a site-based data collection approach for additional patients

Figure 2. Key Data Availability Considerations for Direct-to-Physician Medical Chart Abstraction



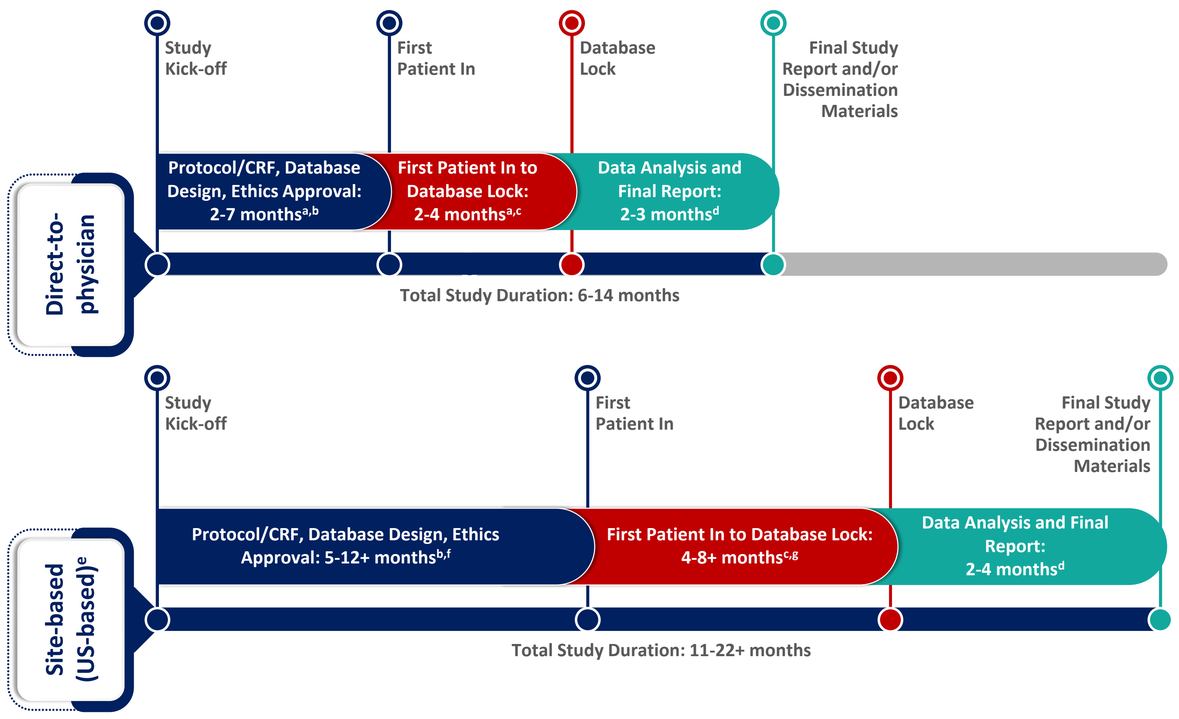
Results (cont.)

Table 2. Key Strengths and Limitations of Direct-to-physician Chart Review Studies when Compared to Site-based Studies

Considerations	Direct-to-Physician Study	Site-based Chart Review Study
Data Collection and Study Methodology Considerations		
Data abstraction is conducted by	Treating physicians	Site clinical research staff or treating physicians
Case report form length per patient	Streamlined (≤ 1 hour)	Flexible (1-2+ hours)
Electronic data capture system	Proprietary	Flexible based on country, outcomes and study needs
Sample sizes	≤approximately 150-200 patients and flexible number of physicians	Flexible for number of patients, with potential limitations for number of sites
Geographies	US	Global
Variables and Outcomes Considerations		
Ability to provide data on treatment patterns and clinical outcomes?	✓	✓
Ability to provide data on safety outcomes?	Potentially; if patient charts have sufficient data	
Potential retrospective follow-up duration	Up to 3+ years, but may be limited by case report form length restrictions	Up to 5+ years, with the limitation being the number of years of historical data at sites
Ability to collect survey data from treating physician?	✓	Potentially; may vary by site
Operational Considerations		
Ethics approval included as part of the study	Central ethics committee	Central and local ethics committees, as applicable
Feasibility (to find patients and identify physicians/sites)	Conducted quickly through broad outreach to physician network, or using existing in-house data	Conducted through longer duration site outreach procedures
Contracting with physicians or sites	Physicians already part of the network already have contracts	Sites likely need study-specific contracts developed

- Direct-to-physician chart review studies have varied timelines based on patient population and outcomes of interest, along with additional aspects noted in **Figure 3**.
- Efficiencies in timelines compared with site-based studies primarily stem from physician-level instead of site-level feasibility, contracting or start-up, having centralized ethics submissions, and being able to start data collection across all physicians at the same time

Figure 3. Approximate Study Timelines for Direct-to-physician Chart Review Studies, versus Site-based Designs



Abbreviation: CRF = case report form.
[a]Timeframes are based on the ranges from the four reviewed studies.
[b]Partially dependent on protocol and case report form/electronic data capture review cycles
[c]Partially sample size and eligibility criteria-dependent
[d]Direct-to-physician timelines are based on the two reviewed studies that have completed final reports. Timeframes are partially dependent on outcomes, types of analyses and types of reports
[e]Site-based timelines are based on completed studies from the past 3 years
[f]Partially dependent on electronic data capture system chosen, country and sites (number of sites, site contracting and start-up)
[g]Partially dependent length of case report form and time to get all sites activated

Conclusions

- From the four direct-to-physician chart review studies, this design was time-efficient for:
  - Generating real-world evidence in the US about the rare disease of interest or condition management (such as patient characteristics, medical history, and clinical outcomes).
  - Providing information to understand treatment utilization and benefits/risks of treatments.
  - Providing information on perceived physician challenges managing patients with specific disease indications.
- Based on the summarized experience, this study design may be applicable in the future in the US, where real-world evidence is needed from (somewhat limited numbers of) physicians and patients, with a medium-long recall period.
- Understanding the methodological considerations is important when deciding if a direct-to-physician study design is appropriate in the selected country

References

1. Mountcastle, et al. Baseline characteristics and treatment of US/UK pediatric patients with anemia of chronic kidney disease (CKD) on dialysis (D) or not on dialysis (ND) treated with erythropoiesis-stimulating agents (ESAs: a retrospective chart review. Pediatric Academic Societies, USA, April 27-May 1, 2023.
2. Mountcastle, et al. Longitudinal availability and frequency of Hb measurements in UK and US paediatric patients with anemia of chronic kidney disease (CKD) on dialysis (D) or not on dialysis (ND) treated with erythropoiesis-stimulating agents (ESA): a retrospective chart review. UK Kidney Week, Cardiff, UK, June 5-7, 2023.

Disclosures

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