2011

CRO-PPP Collaborations: Targeting the Bottom of the Pyramid

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July 2011
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Abstract

Recently, the Product Development Partnerships—a consortium of 14 groups targeting neglected diseases and also improved medicines for the world's poor, announced several collaborations with global contract research organizations. While information about the members is not available as yet, all 14 are non-profits and it is known that one of the consortium members is the Medicines for Malaria Venture. The 14 PDPs anticipate funding 128 phase I-IV clinical trials over the next two years 2011-2013. The Bill and Melinda Gates Foundation has committed $10 billion over the next 10 years to help research, develop and deliver vaccines and treatments for the world's poorest countries, with a portion of that commitment directed to these PDPs. The PDPs also receive funding from government agencies, private entities and other sources (Malaria.com, 2011). As of May of this year, Quintiles, PPD, FHI, Cmed Group, GVK Biosciences, and South African CRO Trinclinium had all been selected as preferred providers by the consortium of global PDPs (Payne, 2011). Of interest will be the services offered to the PDPs and the collaboration models employed unilaterally or jointly by the PDPs.

1.0 Introduction

The Product Development Partnerships, a consortium of 14 groups targeting neglected diseases and also improved medicines for the world's poor announced several collaborations with global contract research organizations. As of May of this year, Quintiles, PPD, FHI, Cmed Group, GVK Biosciences, and South African CRO Trinclinium had all been selected as preferred providers by the consortium of global PDPs (Payne, 2011). In this case analysis, the discussion focuses on the possible collaboration models including: a modified version of functional sourcing, the functional sourcing network with CROs jointly working with each other and the PDP consortium as centers of competency—each dedicated to providing a specific service as part of the drug development value chain; flexible sourcing with a CRO selected on a matching basis with individual compounds/projects for the entire duration of the clinical development program; sole sourcing involving an exclusive partnership between a PDP and CRO for its entire clinical portfolio; geography based sourcing with a CRO selected on the basis of its reach into target markets; and the hybrid option with PDPs using multiple models in parallel for their clinical development projects.

2.0 The Partners

PDPs are not-for-profit organisations that emerged as public-private partnerships in the 1990s—addressing diseases that are endemic to some of the world's poorest countries and the lack of incentive to pursue technological innovation for such markets. The partnerships bring together the expertise and assets of the public, academic and private sectors to develop and bring to market products for the diagnosis, prevention and treatment of neglected diseases (Mansell, 2011).
The Bill and Melinda Gates Foundation, supports a total of 17 PDPs. As of 2009, the Gates Foundation had invested more than US$1.9 billion in PDPs. The Gates Foundation has committed US$10 billion over the next 10 years to help research, develop and deliver vaccines and treatments for the world's poorest countries (Mansell, 2011). The PDPs also receive funding from government agencies, private entities and other sources.

As Quintiles—one of the preferred providers has noted, the 14 members of the PDP consortium outsourcing clinical development functions to leverage their combined R&D pipelines and make the most cost-effective use of their research and development dollars. The 14 consortium members that will draw on the experience and resources of the chosen CROs expect to fund 128 Phase I-IV clinical trials over the next two years (2011-2013) (Mansell, 2011). Quintiles will partner with the consortium members by providing one-step access to Quintiles' global clinical development infrastructure and standards, particularly in the area of infectious diseases such as HIV, malaria and tuberculosis (Quintiles, 2011).

PPD is expected to provide a broad range of discovery, clinical development and post-approval services for drug and vaccine development. The company will strengthen local research capacities through program and site management, trial monitoring, specialized laboratory services and training programs. PPD will be in a position to support health initiatives for infectious diseases like HIV, tuberculosis and malaria and for neglected diseases such as visceral leishmaniasis, Chagas disease and Human African trypanosomiasis. PPD has experience with more than 900 government and public health drug development projects in multiple disease indications in Africa, Latin America and Asia during the past 21 years. The company has provided extensive laboratory, clinical development, program management, and training and quality services to government and nongovernment organizations in areas such as infectious diseases, vaccines, biodefense, HIV therapeutics and prevention, and autoimmune and asthma/allergic diseases (PPD, 2011).

In parallel, FHI's forty years of research experience has focused on a multitude of infectious and neglected diseases, such as HIV, HSV, HPV, other sexually transmitted diseases, malaria, and seasonal and pandemic influenza. FHI has strong history delivering the highest quality research in resource constrained settings and has been recognized globally for its leadership in the ethical treatment of trial participants (FHI, 2011).

Cmed Group is expected to provide the PDPs with a wide range of eClinical technology capabilities, such as electronic data capture (EDC) and data management, and CRO services through its two divisions: Cmed Technology, an eClinical technology provider, and Cmed Clinical Services, a full-service CRO (Cmed, 2011).

"Cmed Group feels privileged to have been selected to help the PDPs with the development of new medicines in Third-World Countries," said Dr. David Connelly, CEO of Cmed Group. "We hope to provide a full range of clinical services and our Timaeus on-demand eClinical platform to help perform electronic data capture more efficiently and accurately as well as rapidly communicate and manage data across mobile phone networks or satellites in extremely challenging areas with limited or no Internet connectivity. The end result will be highly rewarding—bringing the prospect of better health one step closer for the world's poor" (Cmed, 2011)

GVK BIO is currently working with some of the PDPs and collaborating with investigators and public institutions in India and Bangladesh to help develop preventive and therapeutic medicines that can be introduced into public health programs with the aim of dramatically reducing the social and economic burden of these diseases (Economic Times, 2011). GVK BIO will collaborate with the consortium as a niche service provider for clinical monitoring, logistics support and safety monitoring apart from overall project management (New Kerala, 2011).

"GVK Biosciences is extremely pleased to support the development of health solutions for neglected infectious diseases in India. We are excited to partner the PDPs in advancing their clinical programs and help address medical and health problems of millions globally," said Manni Kantipudi, Chief Executive Officer, GVK Biosciences (New Kerala, 2011).

Triclinium is a wholly South African CRO, established in Johannesburg around the core functions of clinical trial set-up, regulatory, monitoring, management and auditing across sub-Saharan Africa. Its track-record spans 168 clinical trials for 60 clients of 19 nationalities (repeat business rate 78%) involving more than 40,000 participants at 540 sites across 14 therapeutic areas in Phases I-IV. The company has an extensive database of experienced investigators in multiple therapeutic areas and has also established strong and seamless collaborations with several other specialist and regional vendors, whereby full-service solutions are effectively tailored to specific requirements (ResearchPoint Global, 2011).

"Triclinium is honoured to be one of only 6 Contract Research Organizations (CRO) worldwide – and the only wholly African CRO – selected by the PDPs," says Victor Strugo, founder and Managing Director of Triclinium (ResearchPoint Global, 2011).

"Having already worked extensively with 4 PDPs over the last 8 years, this Preferred Provider status significantly reaffirms our conscious commitment to supporting research focused on the major health issues and neglected diseases of our native continent. We look forward to supporting more PDP research into major global health challenges, in and beyond the 12 countries in which we already have research experience" (ResearchPoint Global, 2011).

3.0 Collaboration Models

Possible collaboration models include:

The functional sourcing network with CROs jointly working with each other and the PDP consortium as centers of competency—each dedicated to providing a specific service as part of the drug development value chain. Functional sourcing involves contracting with a single provider to deliver a single or limited service in support of all anticipated clinical trials (Miller, 2007). Each CRO will be selected based on this competency. This strategy may be used by individual PDPs or in partnership with other members of the consortium. In addition to these links between PDPs, the possibility exists to collaborate with other partner CROs to jointly deliver the selected services. In this case, the functional sourcing strategy will merge with the traditional network strategy involving multiple PDPS and CROs. (Figure 1)

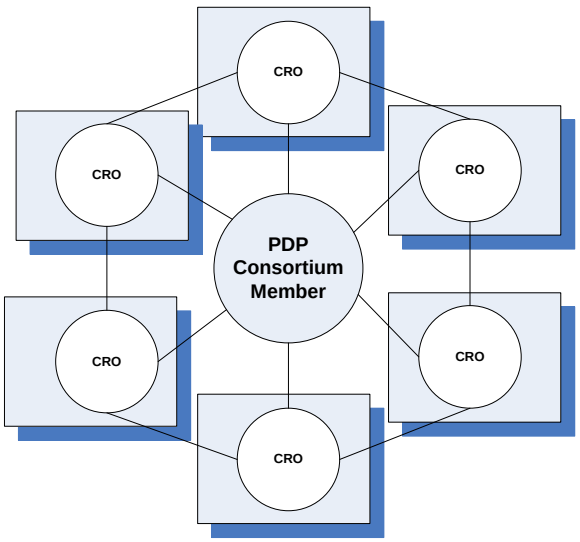

Figure 1: Functional Sourcing Network

Flexible sourcing with a CRO selected on a matching basis with individual compounds/projects for the entire duration of the clinical development program. CRO selection for example, may be on the basis of therapeutic or disease expertise for each

project or set of projects (differing from the sole sourcing strategy-see below). This strategy enables for flexibility in order to meet a variety of therapeutic study designs and compound development needs while ensuring consistency, quality, and timeliness of data and clinical testing (Scheible, 2011). In this case, the selected CRO provides the full suite of services for the designed compound/project or set of projects. The volume-based discounts, process efficiencies and standardization across multiple projects, can permit timing savings, reduced costs, and reduced data as well as process variability required for decision making (Covance, 2009). (Figure 2)

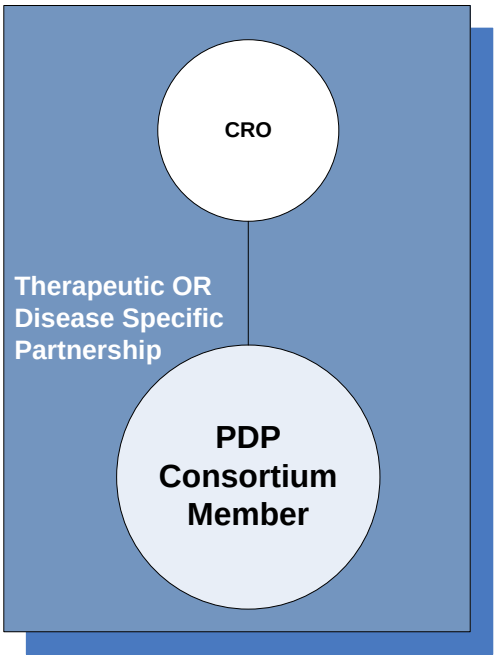

Figure 2: Flexible Sourcing

Sole sourcing with an exclusive partnership between a PDP and CRO for its entire clinical portfolio. In this case, the PDP may opt to sign a long-term agreement with one CRO for the provision of services across the clinical value chain and for the entire PDP portfolio. In this case, the PDP and CRO can collaborate more closely—jointly planning, sharing resources, and engaging in decision-making. This CRO will have stronger incentive to dedicate assets and resources to the clients projects including technology, systems and human capital commitment. The PDP will in parallel enjoy greater control over the clinical testing process and its outcomes, with both cost and time savings anticipated (Covance, 2009). (Figure 3)

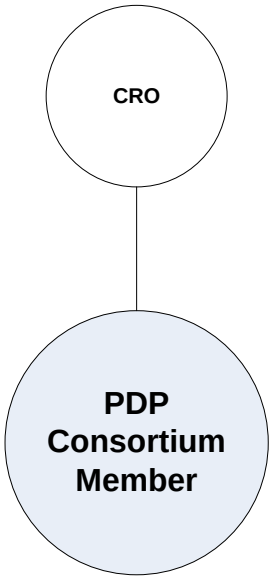

Figure 3: Sole Sourcing

Geography based sourcing with a CRO selected on the basis of its reach into target markets. Obvious examples would be GVK Biosciences' reach into India and Trinclinium's reach into South Africa. Alternatively, any of the CRO's could be selected based on their geographic strengths and location either in isolation or in partnership with other such CROs. For example, aside from its presence in India, Quintiles has a dominant presence in Africa. Quintiles South Africa established offices in 1990. With three offices, Quintiles South Africa is the largest pharmaceutical services organization on the African continent (Quintiles, 2011). One could therefore,

envision a partnership based on the functional sourcing network strategy between a PDP, Quintiles and Trinclinium in South Africa. Equally likely are similar partnerships involving PPD given its reach in India and South Africa, and FHI given its broad reach into both Asia and Africa. (Figure 4)

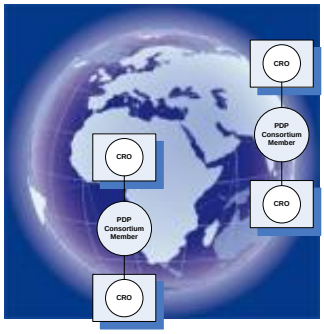

Figure 4: Geographic based Sourcing

The hybrid option with PDPs using multiple models in parallel for their clinical development projects as discussed above with the joint use of the geographic and functional sourcing strategies. In addition, the possibility exists for the use of multi-sponsor strategies to mitigate risk and manage costs of development. Multiple PDPs could collaborate on compound development for a target market using the functional sourcing, flexible sourcing, sole sourcing, or geographic based sourcing strategies.

4.0 Governance Strategy

Forming the right partnerships and teams, as well as managing operational processes will increase the effectiveness of R&D outsourcing and ensure that the associated cost, time and risk-sharing benefits are enjoyed by the PDP Sponsor (s).

The project plan forms the basis of the contract between the Sponsor and the CRO. There needs to be a clear link between the plan and the project contracts that ensures buy-in and open communication between all parties through the drug development process.

Chiesa describes the management of such partnerships as composed of six distinct stages including: 1) defining the goals of the project or product development; 2) selecting partners; 3) establishing the collaboration agreement, defining the objectives, scope and timeline of the collaboration; 4) implementing the collaboration; 5) assessing the collaboration performance; 6) and solving problems (Chiesa, 1997).

• Depending on the type of activity, the goals of the project or product development can be open-ended or explicit.

• Both informal and formal approaches are used to select partners for research and development activities. Partners are selected on the basis of scientific merit as well as the tangible and intangible resources that can be contributed to the partnership. Partner firms can be audited to assess their capabilities.

• Establishing an agreement involves defining interaction rules, the expected results of the partnership, the time and cost requirements, the expected contributions of each partner in terms of tangible and intangible resources and defining performance evaluation criteria.

• Implementing the collaboration involves managing knowledge integration, enabling communication and learning within the partnership. Progress and adherence to the project objectives are continuously monitored.

• The ability to assess collaboration performance depends on the type of activity, research or development, associated with the collaboration. The expected results, time, costs and partner contributions can be objectively measured in development-based collaborations.

• As the collaboration evolves, the need may arise to change objectives, timelines, cost requirements, the resources and expertise required.

Selecting Partners. CROs can be evaluated on the following parameters:
• Overall expertise in the therapeutic arena or domain.
Previous experience in the target market.
• General capabilities including facilities, equipment, human resources.
• Strategic fit with project or product including services to be provided that are specifically relevant to the project or product.
• Cultural fit with the PDP team and its members.
• Organizational structure and operational processes and are conducive/obstructive to partnering.

Team Leadership. The team director is charged with the responsibilities of designing and executing the project plan, enabling coordination of the team and its members, including communication within the team, with the PDP Sponsor and with the appropriate regulatory authorities and identifying solutions to problems as they arise, including new member recruitment. Effective project management will entail the clarification of responsibilities and timelines for the Sponsor and CRO alike. Project management is supported through the use of documented operational processes, project and knowledge management systems as well as contract and financial databases (Gillbe, 2005).

Enabling Collaboration. The creation of a knowledge environment will enable scientists to make new connections between information from diverse sources and to support collaborative and community-building efforts. Knowledge production and dissemination will require the development of common data standards for representing complex biological and clinical information and the establishment of efficient communication and knowledge sharing mechanisms across disciplines and geographies (Carel and Pollard, 2003).

Various repositories can be used to store knowledge. Repositories differ on the basis on content, format and presentation context. Units of knowledge having significance for its users will be classified, indexed, annotated and then stored in repositories for the purpose of retrieval and then manipulation by researchers. The repository will not only store the independent units of knowledge, but will also store the various linkages among the various types of knowledge. Units of knowledge and their relationships should be made explicit and rendered in a machine-readable format enabling scientists to conduct large-scale analyses and make sound decisions in drug development (Zack, 1999; Neumann, E., & Thomas, 2002).

Knowledge management is vital both to the effective working of the project team, but also to the efficient transfer of information to and from the Sponsor as well as to external audiences such as regulatory authorities.

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