Does Pfizer Need a Low Cost Low Volume Manufacturing Option?

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A Low Cost, Low Volume (LCLV) approach to clinical manufacturing has previously been proposed[1,2]. The goal of this approach was to provide Pfizer research organizations with an option for initiating first-in-human studies in the clinic for a reduced initial investment. The offer provided 150 g of drug substance for regulatory toxicology studies and approximately 1000 drug product vials for approximately half the cost compared with Pfizer's traditional approach for monoclonal antibody (mAb) programs.

This LCLV approach was recently implemented for a Phase 1 mAb program. The program used a precision medicine approach targeting a new pathway in a specific population for a disease with insufficient treatment options. The goal of the initial clinical study was to demonstrate proof of mechanism. Since the material demands were thought to be low and the cost of entering the clinic was limiting, the program was ideally suited for LCLV.

During LCLV implementation, certain aspects of LCLV were found to be very enabling. Process development was successfully eliminated which significantly reduced the cost to the program. Several regulatory elements were tested including a modular viral clearance approach and reduced DS testing and stability. However, other aspects of LCLV were found to be too restrictive for the program including the amount of regulatory toxicology and clinical trial material that was initially generated.

This talk will discuss the first implementation of the LCLV process. The assumptions of the original approach will be reassessed in light of this first clinical program. Specific aspects of the process that have been successful as well as future areas of opportunity will be discussed. An improved version of LCLV paradigm will be proposed along with the potential implications and value LCLV might have on Pfizer's overall development portfolio.

[1.] Salm, J., Shang, T., Crowley, T., Coffman, J., Moxham, J., (2013, February). Increasing Access to the Clinic with a Low Cost, Low Volume Manufacturing Process, presented at *SBE's 3rd International Conference on Accelerating Biopharmaceutical Development*, Coronado Island, CA.

[2.] Shang, T., Salm, J., Porter, T., Charlebois, T. (2014, May). Accelerating clinical evaluation of biotherapeutics: can cost, speed and throughput be improved without compromising quality? Presented at *CMC Strategy Forum Europe*, Sorrento, Italy.