Current trends and challenges in vaccine production and manufacturing

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A vaccine that modifies the progression of a disease and one that arrives in clinical use too late alters disease progression or save lives. It may be the difference of rapid manufacturing response. A particular process or a particular manufacturing technology is driven by potential which is used to respond quickly for an urgent need and to have an opportunity on a faster time track and to appear on revenue. New rapid developing vaccines need not be waiting for the construction of sophisticated, expensive manufacturing facilities. Many researches and start-up companies rely on disposable bioreactors and processing systems to jump-start scale-up because dedicated pilot plant facilities do not exist. This approach bypasses the build-out of expensive slow-to-construct facilities to make enough material to test in animals or even in phase-II human clinical trials. If scale-up ultimately requires large fixed facilities. The development of robust manufacturing processes will be needed. The forecasting of technologies and implementation strategies is a complex science that seeks to define the paths forward from a point in time. That is no single path is likely to dominate for all disease applications. For the more complex disease targets that face us today neither will a single vaccine nor vaccine manufacturing strategy is universal. Thus, this study focuses primarily in order to increase manufacturing capacity and speed the development of the next generation of vaccines for more effective vaccine manufacturing.

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