The Climate is Right to Accelerate New Drug Development for Neglected Diseases

Wade A. Russu*

In the last decade the alarm has been raised that a renewed effort must be made in the understanding and treatment of neglected diseases [1-3]. Neglected diseases are those that are most often associated with poverty in both developing and developed countries, where the affected are unlikely to receive or are unable to afford current treatments. The alarm is well received and understood. The facts that current drug treatments for these diseases are not always efficacious for various reasons, may have severe side-effects and therefore safety concerns and no new drugs have been developed nor are guaranteed to be developed beyond those that have been used for many decades, conspire to give concern. New drug development stagnation for neglected diseases is largely due to simple economics, namely, and understandably, there is no sufficient return on investment (ROI) for pharmaceutical companies to justify the commitment of resources to such diseases. However, recent avenues to facilitate research and development activities, coupled with corporate social responsibility make it possible for all of the pharmaceutical industry to participate in new drug development for neglected diseases.

Corporate social responsibility is a self-governing philosophy and ethics by which a corporation acts responsibly to the benefit of its stakeholders, community and environment. Pharmaceutical companies’ stakeholders not only include stockholders, employees, health professionals, communities in which they operate, and patients that their drugs treat, but also future patients that their future drugs may treat. A significant portion of pharmaceutical products and ingredients are manufactured in developing countries or countries that have large populations affected by neglected diseases. It is in the vested interest and responsibility of these companies to participate in the betterment of the health and welfare of these communities to ensure an able and educated workforce, improved economy and relief from the cycle of disease and poverty. Controversially, benchmarking of the pharmaceutical industry’s corporate social responsibility as a way to foster inter-business competition has been discussed [4]. Studies have suggested that altruistic and philanthropic motives may be more dominant than economics in engaging in corporate responsibility activities [5]. Indeed, such corporate social responsibility is practiced by pharmaceutical companies in various ways through multi-national agencies and partnerships. Many of these companies also have philanthropic foundations. However, new drug development for neglected diseases which can also be viewed as a corporate responsibility, has lagged. While it is not reasonable to expect a pharmaceutical company to expend the amount of time and resources to develop a drug, to treat a neglected or rare disease, which will most likely never create enough revenue to recover the investment, it is reasonable to expect some contributions to such new drug development projects. One can argue this point from the humanitarian perspective, while recognizing that programs exist to facilitate and enhance such contributions.

In the past decade several avenues have emerged in order to incite contributions to new drug development for neglected diseases from pharmaceutical companies. Collaborative research relationships, such as product development partnerships (PDPs), aim to reduce financial burdens associated with drug development activities through cost and resource sharing [6]. Organizations such as Drugs for Neglected Diseases Initiative, Global Alliance for TB Drug Development, Institute for One World Health, and Medicines for Malaria Venture, provide opportunities for pharmaceutical and biotech companies, academic, government, and other organizations to participate in new drug development for neglected diseases. The US National Institutes of Health (NIH), Therapeutics for Rare and Neglected Diseases (TRND) program aims to bridge the gap between discovery and Investigational New Drug application by providing pre-clinical development support for viable new drug candidates. Economic incentives for the development of new drugs for neglected diseases have also been introduced. In the US, Priority Review Vouchers (PRVs) are available to companies once their new treatment for a neglected disease wins FDA approval [7]. The PRV allows priority review of any of the company’s new drugs. The PRV compliments the already existing Orphan Drug Act (ODA) under which many new drugs to treat neglected diseases would qualify. Repurposing existing drugs may be a faster and cheaper way to find an effective treatment for neglected disease. The US Food and Drug Administration (FDA) created a database of drug repurposing to stimulate new repurposing ideas. Another reason for pharmaceutical companies to enhance drug development efforts for neglected diseases is that these diseases are a public health concern worldwide and not just in developing countries.

Neglected diseases exist in both developing countries and developed countries around the world. For example many neglected diseases, such as helminth infection and giardiasis are prevalent in some poor communities of the US [8,9]. While some neglected diseases may be endemic to certain areas in developed countries others may be imported by global travel and immigration, or their incidence may be intensified by natural disaster or climate change. Recently Chagas disease and dengue have become concerns in the US [10,11].

Neglected diseases are truly a global health concern. While the majority occur in poor and developing countries it should not be forgotten that these diseases can and do affect people in primarily poor communities in all countries. The potential for the spread of these diseases through travel, immigration, climate change, natural
disasters, and the sometimes inadequate nature of current therapies, and the emergence of drug resistant infectious agents should spur efforts to accelerate development of new drugs for these diseases. It is my opinion, since there are now numerous avenues to participate available, that it is time for all pharmaceutical and biotech companies to commit to new drug development for neglected diseases, whether as a part of the main business of the company or through its philanthropic arm.

References

Author Affiliation
‘Department of Pharmaceutics and Medicinal Chemistry, Thomas J. Long School of Pharmacy and Health Sciences, University of the Pacific 3601 Pacific Ave, Stockton, CA 95211, USA

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