CGS MUN

Committee: Special Conference on Global Health Inequalities

Issue: The effect of pharmaceutical patents in research and development

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INTRODUCTION

When a company is introducing a new product, which involves an innovative way of tackling with an issue, the company has exclusive rights for this invention. Hence, any invention that involves an inventive step and is capable of industrial application can be patented. However, a discovery, a scientific theory or mathematical method, an aesthetic creation, literary, dramatic or artistic work, a method for performing a mental act, playing a game or doing business and the presentation of information or a computer program, are not patentable. The patent system applies to the pharmaceutical industry as well. The drug market involves inventing, manufacturing, selling and making drug, and can be characterized by high levels of inequality. More specifically, as a result of high prices, not all people have access to the necessary medication and this leads to inequality in the provision of drugs. We reach the conclusion that this form of inequality has severe costs like the augmentation of deaths in the developing countries and the re-appearance of certain diseases that did not exist before. This can also, indirectly, affect the countries that claim that they are not concerned by the re-appearance of some diseases or by the numerous deaths. All in all inequality in the provision of drugs can create a vicious circle which we are called to deal with.

In light of rising inability to afford medications in many developing countries, in recent reports the UN has called "major changes to the way in which research and development (R&D) of life-saving medicines is funded in order to make them more affordable for patients around the world and fight neglected diseases".

More specifically, the report has argued that "the link between high R&D and high drug prices must be broken" and that "governments should commit to a legally binding convention to coordinate and fund research and development." The United Nations' panel also suggested that countries should alter their laws and drug-maker should disclose some costs with the aim of making the life-saving medicines affordable.

DEFINITION OF KEY TERMS

Patent

A patent for an invention is granted by the government to the inventor, giving the inventor the right to stop others, for a limited period, from making, using or selling the invention without their permission.[1]

Pharmaceutical Patent

A medical patent is a legal protection against market competition that a government grants to the inventor of a unique medical item or process.[2]

Development

Development is the gradual growth and prosperity of something such as a business, an organization or an industry.

Research

Research is the procedure of searching about something and involves studying something and trying to discover facts about it.

[1]"What Is a Patent." The British Library, The British Library, 21 July 2015, www.bl.uk/business-and-ip-centre/articles/what-is-a-patent.

[2]Fontinelle, Amy. "Medical Patent." nvestopedia, 1 June 2018, www.investopedia.com/terms/m/medical-patent.asp.

Research and Development

It is a term used in order to express the work a business does towards innovation, amelioration of current products and methods.

Incentive

It is the fact, the statement, the situation or the person that motivates and encourages someone to try harder, invest in something or do something new.

Intellectual Property

When referring to intellectual property we mean the creative invention or the work that involves innovation. The intellectual property can be protected through patents, copyright or trademark.

Monopoly

When a firm is the only one selling a product, this means that the firm has is a monopoly and the costumers can access this specific product only through the company, the business owner, the enterprise or the individual that is having the monopoly.

BACKGROUND INFORMATION

Pharmaceutical Patents

The pharmaceutical market is a market functioning under its own rules and conditions. In the pharmaceutical market, research and development is a key process, which enables companies to produce and benefit from products, and most importantly to gain competitiveness. The market is characterized by strong use of patents, and thus the granting of temporary monopolies to innovators; thereby protecting and promoting innovation. But when it comes to pharmaceuticals, patents can complicate the timely provision of a drug in an affordable price, and lack there of can di-incentivize companies from even producing the drug to begin with.

One of the basic characteristics of the pharmaceutical industry is the pharmaceutical patents. When a company introduces a new drug for the treatment of an illness, this drug can be manufactured and sold just by this company for a specific amount of time, which varies according to the drug and the country it has been manufactured at and will be sold in. This means that the drug is under patent protection and as result no other company is allowed to produce it or make profit from it. The patent system is a system, which mainly focuses on the protection of the interests of the company that has invented a new drug and indirectly it is a way of encouraging the pharmaceutical companies to do further research and come up with new drugs. This is due to the fact that R&D requires heavy investment, which can't be justified without the presence of a patent to ensure future profits. However, during the time that the drug is under patent protection, the company that holds the patent is given a monopoly and it is allowed to charge the drug at a price higher than market price. Subsequently, due to the high charges, many patients cannot afford the drugs and this leads to inequality in the provision of drugs.

As soon as the patent has expired, any other company has the right to produce the drug and sell it at the market. The drug is now called the generic drug and according to the legislation of each country, it can be similar or identical to the branded drug. More specifically, taking into consideration the guidelines in most countries, including those from the United States Food and Drug Administration, the generic drug must be identical to the branded drug as far as efficacy, safety, usage, route of drug administration, pharmacokinetics and pharmacodynamics are concerned. Once the generic drug is on the market, the monopoly of the patent holder is removed. [3] The high competition among the companies that offer the drug in different prices, results in a drop in drug costs.

[3] "Food and Drug Administration | USAGov." U.S. Data and Statistics | USAGov, www.usa.gov/federal-agencies/food-and-drug-administration.

The drop in the prices leads to life-saving, as well as to the provision of drugs to the general population at reasonable prices.

It is essential to mention, that although the company is supposedly holding a patent for about 20 years, due to the long time that the approval of the drug takes, the company is actually enjoying the benefits and profits of the monopoly for a much shorter time .To be more specific, according to the picture below, a company in the United States Of America that applies for a patent protection in 2004, will be selling the drug in the market in 2017. This means, that the company will be having a monopoly for about 7 years, due to the long time of clinical testing. This is important, as it illustrates the hidden costs behind R&D in a pharmaceutical industry. Such costs can be extremely high, so that firms without patent protection are likely not to invest in the process.

Date	Action	Effective Patent Life Cycle	Years of Lost Patent Protection
2004	Company ABC files a patent application during preclinical research, starting the 20-year patent clock.	20 years	0
2006	Company ABC is ready to begin clinical testing and files an IND, starting the FDA approval process.	18 years	2
2007	The USPTO issues Company ABC's patent.	17 years	3
2016	After 10 years of clinical testing, Company ABC files an NDA.	8 years	12
2017	The FDA approves the NDA and Company ABC can start selling the drug.	7 years	13

It is still possible, though, for the company holding the initial patent to reapply for the patent by forming a new version of the medicine that is different in comparison to the branded drug. Additionally, the patent could be renewed if the drug regulators detect faults in the original drug and remove it from the market. Thus, after the patent expires the company can follow the following strategies:

- Continue the process of production of the drug
- Stop producing it
- Create a new drug that will replace the old one on the market
- Licensing it to competing generic houses

- **Considering prescription to over-the-counter strategies[4]**
- **Apply for a new patent on the manufacturing process**

Advantages of Pharmaceutical Patents

If pharmaceutical patents did not exist, the companies would have no reason to spend a big part of their budget in inventing a new drug, since right after, it would be copied and manufactured by other companies, which would be taking advantage of it. This means that without the protection offered by the patent system, there would be no interest, firstly for the inventor to spend their time, effort or money to the formulation of an invention, since others could so easily replicate it, and secondly an absence of patenting would make inventors protect their ideas through secrecy and non-disclosure.

In addition to the above, economists claim that pharmaceutical patents, positively affect the market and the economy, because they implicitly lead to innovation and research. The reason for this is that companies invest in research and development since the development of technological advancement can offer a significant profit to them. Patenting makes this process very profitable, since it ensures that others do not replicate the product with the aim of gaining a share of the potential profits. As a result, companies tend to spend their money in research and development and this investment leads to technological advancement. It is evident, though, that this procedure would certainly not occur if protections were not provided by the pharmaceutical patents.

Although it is normally not encouraged at all by the process of competition, it has been noted that monopolies, caused by the patenting process, preclude most forms of competition. As a result, most companies, wanting to take advantage of the monopoly a patented drug can offer, want to invest in research and development in order to ensure a significant and relatively long profit.

[4] Editors, Pharmaceutical Executive. "What Happens When a Product Loses Its Patent?" Pharmaceutical Executive Home, 18 Aug. 2017, www.pharmexec.com/what-happens-when-product-loses-its-patent.

Moreover, due to the patent system adopted in the pharmaceutical market, many companies invest in research and development and this results in more jobs being available. At some companies, securing patents can lead to promotions, bonuses, and higher salaries, as well as bragging rights. The wide availability of jobs results, at the same time, in the reduction of unemployment, which undoubtedly is one of the most serious problems that our society is facing. The fact that more jobs are open, as well as the eradication of unemployment, leads to the fruitful functioning of the economy as a whole.

All in all, the application of the patent system in the pharmaceutical market has led to several innovations, further research and technological development.

Disadvantages of Pharmaceutical Patents

The fact that the governments all around the world are allowing this artificial economy, which the patent system provokes since there is no competition between the pharmaceutical companies, leads to huge issues regarding inequality in the provision of drugs. To be more specific, the company that holds the patent for a drug is the only one allowed to sell it, resulting in extremely high prices. It is essential to mention that almost ten million people die each year because they cannot afford the necessary medicine for the treatment of their disease. Furthermore, three billion people all around the world are being at risk from diseases that lack market incentives for drug development.

Pharmaceutical patents and exclusivity, reduce access to lifesaving drugs, and can allow technologies developed with public funding to be purchased and monetized by private entities in developed nations. Furthermore, between one fourth and one third of new drugs originate on public university campuses, but are then bought out by the industry to be monetized.

Though development costs are borne by the taxpayer, the benefits of the research are mostly enjoyed by private parties[5].

Pharmaceutical companies who have rights to make profits on innovative new drugs and those who wish to direct companies to innovate new pharmaceuticals for developing countries have been arguing for the past couple of years. It is noted that during the last 25 years, out of all the drugs that have been developed, only 1% of them are for tropical diseases. The medicines that treat these diseases do not represent a profitable venture for the companies and thus the medicines that are developed in order tackle with diseases of the developing world are limited. Hence, that the patent system is mainly responsible for the luck of necessary medicine in LEDCs.

Another major disadvantage of the patent system is the fact that not all inventions and innovations are patentable. Due to the fact that not all new methods and products can be patented,many company owners and inventors do not try to implement their ideas and as a result innovation is left behind.

Patented Drugs

The table below includes the drugs that are under patent protection along with the date their patent expires.

Drug Under Patent Protection	Expiration Date	Description
Acanya	July 1, 2018	
Adcirca	May 21, 2018	
Ampyra	July 30, 2018	
Apidra	June 2018	At this time, generic Apidra (or any other generic biologic) is prohibited from being manufactured in the

[5] "Food and Drug Administration | USAGov." U.S. Data and Statistics | USAGov, www.usa.gov/federal-agencies/food-and-drug-administration.

		United States. Also, a patent prevents any generic form of Apidra from being made until at least June 2018, when the patent expires.[6]
Cialis	September 27, 2018	
Fentora	March 26, 2019	
Finacea	November 18, 2018	
Follistim	January 14, 2018	There is currently no therapeutically equivalent version of Follistim available in the United States, which means that the generic drug has not been approved yet.
Fortesta	November 9, 2018	
Levitra/Staxyn	October 31, 2018	
Lexiva	June 2018.	
Lotronex	October 5, 2018	
Lyrica	December 30, 2018	Pfizer's Lyrica (pregabalin) for fibromyalgia and neuropathic pain will expire in December 2018. Since 2007, the drug has achieved blockbuster U.S. sales in excess of $1 billion per year. By 2016, that figure had climbed to $5 billion, helped along by its status as a non-opioid painkiller.[7]

[6] Monson, Kristi. "Generic Apidra." EMedTV: Health Information Brought To Life, EMedTV, diabetes.emedtv.com/apidra/generic-apidra.html.

[7] Preston, Juliet, et al. "Which Drug Patents Expire in 2018?" MedCity News, 13 Jan. 2018, medcitynews.com/2018/01/drug-patents-expire-2018/?rf=1.

Makena	February 3, 2018	The protection of the drug is still on. However, illegal generic drugs exist, which are highly unsafe.
Promacta	October 30, 2018	
Rapaflo	December 1, 2018	
Remodulin	June 26, 2018	
Sensipar tablet	March 8, 2018	
Spiriva	July 30, 2018	
Symbicort	September 9, 2018	
Tekamlo	July 21, 2018	
Tekturna HCT	July 21, 2018	
Tikosyn	October 9, 2018	Tikosyn was approved by the FDA however due to the drug patents it is not available at the market. There are many websites, though, that do, illegally, sell the generic drug, but it may have negative consequences in people's health.
Treximet	February 14, 2018	
Tyvaso	November 13, 2018	
Vesicare	October 19, 2018	

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

Food and Drug Administration (FDA)

The Food and Drug Administration is responsible for protecting the public health in the US by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation. The FDA also provides accurate, science-based health information to the public [6]. The FDA is working closely with the U.S. Pharmacopeial Convention (USP) with the aim of maximizing the utility

of the "List of Off-Patent, Off-Exclusivity Drugs without an Approved Generic, which includes approved drug products that are no longer protected by patents or exclusivities.

United States of America (USA)

The United States of America (USA) has one of the well-established patent systems in the world. Bearing in mind the effectiveness of this system, it is the ideal place for a pharmaceutical company to become profitable. "In 2001, 402 new cancer medicines, 123 new treatments for heart disease and stroke, 83 new AIDS drugs and 176 new drugs for neurological diseases", according to the *Timeline of Significant Events in the U.S. Generic,* have been developed. These new drugs were the result of patent incentive with companies expecting to have a return in their investment on the research and development of these new drugs. This shows, that the U.S.A.' s pharmaceutical market bases its profit on the patent system.

Commission on Intellectual Property Rights, Innovation and Public Health (CIPIH)

The Commission on Intellectual Property Rights, Innovation and Public Health (CIPIH) was set up by WHO Member States at the World Health Assembly (WHA) in 2003 to take care of developing countries that, according to the current international and national rules on patent rights, have no access to the appropriate medicine. The Commission reviews the interfaces and linkages between intellectual property rights, innovation and public health in the light of current evidence and examines in depth how to stimulate the creation of new medicines and other products for diseases that mainly affect developing countries.[8] Since the patent system negatively affects the LEDCs, the CIPIH is mainly responsible for the provision of necessary information to the companies that are planning to create new medicines that deal with diseases of the developing countries and simultaneously make sure that the interests of the

[8] IIPRD Blog – Intellectual Property Discussions, iiprd.wordpress.com/tag/drugs-industry/.

developing countries are protected. We realize that the actions of this organization are affecting the situation and may lead to the reduction of inequality in the provision of drugs.

European Medicines Agency (EMA)

The European Medicines Agency is the EU regulatory body responsible for the scientific evaluation and supervision of medicines developed by pharmaceutical companies for use in the European Union[9]. Its role is mainly counseling the experts and supervising the creation of medicines. Also, it has been really active on this matter by providing information to specialists and patients about the designation of new medicine and the scientific research in general. It is not responsible for the pricing of the medicine and the approval of the applications of the patents. In addition to the above, the EMA is responsible for monitoring and supervising the safety of pharmaceutical products within the confines of the European Union. All in all, EMA is the peacekeeper of the European pharmaceutical market.

World Health Organization (WHO)

The World Health Organization is a United Nations body, which has been active upon the matter since 1996. It is responsible for the training of officials from health, trade and industry ministries and patent offices. Moreover, it trains patent examiners from patent offices in developing countries. In addition to the above, for several years the WHO gave technical assistance to countries that were developing or reviewing their intellectual property laws[10]. Being the observer of the TRIPS Council, between 2002 and 2009, the WHO, made several interventions on issues regarding access to medicines. Overall, we notice that this UN body has been really active upon tackling with inequalities in the provision of drugs.

Japan

[9] "The European Medicines Agency (EMA)." European Medicines Agency, 21 Nov. 2017.
[10] http://apps.who.int/medicinedocs/documents/s20168en/s20168en.pdf

After the United States of America, Japan has one of the strongest pharmaceutical industries. After the introduction of the patent system in the pharmaceutical market, an increase in the number of drug products was noted. We could say that the pharmaceutical patents were the reason for the reorganization of the pharmaceutical market. The very largest firms became more dominant while some large firms either left the market or lost shares. Also the patent system led to the increase of the foreign investment in production and research facilities.

China

Along with USA and Japan, China has a very strong pharmaceutical market as well. The patent system was introduced in the country in 1984 and economists had very high expectations. In 1993, China issued patent protection law for pharmaceuticals. The Chinese environment for the protection of intellectual property right is considered complicated by many companies, especially for the small to medium-sized companies.

India

India is one of the top twenty leading exporters of pharmaceutical products, with the top manufacturers directing their business towards the MEDCs. Before 2005, India hadn't adopted the patent system and this meant that medication that treated illnesses such as HIV/AIDS, tuberculosis, cancer, etc., was developed in India and was then transferred to developing countries, where they were used with the aim of treating such diseases. However, later on, India adopted the patent system as well and thus no more drugs for the treatment of diseases similar to the above were manufactured. Today, a large number of generic drugs are being patented in India, including vaccines.

South Africa

In South Africa, each year millions of people die because they are infected by the AIDS/HIV virus. Due to the pharmaceutical patents, the prices for the essential medicine are extremely high and hence most of the people cannot afford them and finally die. In countries like South Africa, there has been illegal

medicine trade in order to provide the citizens with drugs in reasonable prices. After the prohibition of such actions, though, the amount of people dying increased.

TIMELINE OF EVENTS

Date	Description of Event
1970	India adopted a new series of policies in order to ensure self sufficiency in medicines
1984	Drug Price Competition and Patent Restoration Act
1994	1.The General Agreement on Tariffs Trade Uruguay Round in 1994, established an international uniform standard of 20 years for patents 2.TRIPS was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994
1996	In the World Health Assembly, a resolution on drugs was adopted and constituted the first mandate given by member states to the Secretariat of the WHO to work on intellectual property in relation to health
1999	After considering the Revised Drug Strategy, in 1999 the World Health Assembly encouraged the continuation and expansion of work undertaken, especially regarding the impact of trade agreements on access to patented drugs
October 2000	Integrating Public Health Concerns into Patent Legislation in Developing Countries (South Center)
2000	Patent Protection and Access to HIV/AIDS Pharmaceuticals in Sub-Saharan Africa, International

	Intellectual Property Institute (WIPO – World Intellectual Property Organization-)
2002	The Network for Monitoring the Impact of Globalization and TRIPS on Access to Medicines26 was created
2003	1. The Department of Essential Medicines was restructured into two departments: the Department of Medicines Policies and Standards, and the Department of Technical Cooperation for Essential Drugs and Traditional Medicines 2. The Commission on Intellectual Property Rights, Innovation and Public Health (CIPIH) was created in 2003 by means of a resolution of the World Health Assembly
2005	India officially changes its patent laws and starts looking at new patent applications
2007	The WHO submitted a working paper on Patent Issues Related to Influenza Viruses and their Genes
2008	The Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property, which was adopted by the World Health Assembly
December 2017	Food and Drug Administration published an update to the "List of Off-Patent, Off-Exclusivity Drugs without an Approved Generic."
7th of April2018	World Health Day

UN INVOLVEMENT: RELEVANT RESOLUTIONS, TREATIES AND EVENTS

- Guidelines for the Examination of Patent Applications relating to Pharmaceutical Patents, is a follow-up to the previous document, and includes further examples of patent applications and references to the

initiatives of a number of countries that have adopted laws that seek to factor in public health considerations in the examination of patent applications.

- **In November 2005, the Committee on Economic, Social and Cultural Rights issued a General Comment that aimed at the clarification of the relationship between the right to health and intellectual property (IP) rights.**
- **Guidelines for the Examination of Pharmaceutical Patents, published in 2007 as a working paper by the International Centre for Trade and Sustainable Development (ICTSD), the United Nations Conference on Trade and Development (UNCTAD) and the World Health Organization (WHO).**
- **In 2008 the World Health Assembly adopted The Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property.**
- **Report of the 2015 Social Forum, by the Human Rights Council, 18th –20th February 2015. The report is summarizing discussions and recommendations of the 2015 Social Forum. The Social Forum focused on access to medicines in the context of the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, including best practices in this regard[11] .**
- **UN Resolution (A/HRC/35/L.18/Rev.1) on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health in the implementation of the 2030 Agenda for Sustainable Development, adopted by the Human Rights Council , 21st of June 2017**
- **UN Resolution on access to medicines, 1st of July 2017, adopted by the Human Rights Council. The aim of this resolution is to ensure that people especially in developing countries have access to the essential drugs.**

[11] "OHCHR | The 2015 Social Forum." OHCHR | Convention on the Rights of the Child, www.ohchr.org/EN/Issues/Poverty/SForum/Pages/SForum2015.aspx.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

The fact that the patent system is one of the main causes of inequality in the provision of drugs and that it is associated with other problems of our world as well, have led to the adaptation of certain measures and laws. In order to tackle effectively with the issue, the WHO has submitted several resolutions and documents which analyze, inform about and deal with the negative effects of the patent system. First and foremost, the WHO submitted a working paper on Patent Issues Related to Influenza Viruses and their Genes. Also, guidelines for the Examination of Pharmaceutical Patents was published in 2007 as a working paper by the International Centre for Trade and Sustainable Development (ICTSD), the United Nations Conference on Trade and Development (UNCTAD) and the World Health Organization (WHO). In addition to the above, certain governments have been active upon the matter such as the United States' government. The US' government offers grants or other subsidies to innovators at the early stage of medicine research with the aim of rewarding innovation. There has also been an attempt to tackle with the issue by the government of South Africa. Unfortunately the attempt was proven unsuccessful since it had a serious impact on the economy of the country. Furthermore, the government of India tried to deal with the inequality in the provision of drugs that are essential for the treatment of certain diseases by adopting, in 1970, a new series of policies in order to ensure self sufficiency in medicines. Except for the WHO other organizations have taken action such as the FDA, the WHA, the CIPIH and the EMA and the UNHRC. Specifically, the HRC has adopted two resolutions in order to deal with the disadvantages of the patent system and ensure equality in the provision of medicine and the WHA, after considering the Revised Drug Strategy, in 1999, encouraged the continuation and expansion of work undertaken, especially regarding the impact of trade agreements on access to patented drugs. Generally, there have been several attempts to solve the issue but they were not successful enough. Guidelines and resolutions do exist, but they have

not been implemented carefully and thoroughly. We reach the conclusion that it is essential to take action immediately.

POSSIBLE SOLUTIONS

Since the patent system has both a positive and a negative effect on the market and on the society as a whole, each nation should focus on its own policy. It is not up to the United Nations, though, whether this system will be abolished or not. Nevertheless, it is essential to ensure that all people have access to medicine that can treat their diseases. This can be achieved through alterations in the current patent system.

First of all, a very good solution would be to limit the period of time during which a drug is under protection. In order, though, to urge the companies to invest in new medicine, despite of the fact that they will be holding the patent for less time, the governments should reward innovation with ways such as:

- The governments, that can afford so, should limit the taxes they impose to the companies that invest in a new medicine. This reduction will be calculated according to the money the companies need to spend for manufacturing a specific drug, the period of time the company will be working on it and the number of people who will be working for the company in order to manufacture the new medicine.
- The governments should also offer grants or other subsidies to innovators at the early stage of medicine research. This method was adopted by the US National Institutes of Health (NIH), which provides $30 billion annually in government funding for medicine research.
- Additionally, prizes should be offered to the companies and inventors who manufacture new drugs. These prizes will be both financial and honorable meaning that the inventor will receive both money and fame. This would give the company and the inventor a motive to continue their work.

- **The companies will be gaining profit from the other companies that will be selling their drug. This way they will be having a monopoly for less years but their income will be increased since the source of their profit will be the sails of their drug from other companies as well.**

Another way to tackle the issue would be to increase the time during which the company will be having monopoly on the drug, but simultaneously force it to sell the medicine in reasonable prices so that it will be affordable to all people. This way both the company will be holding the patent for more time and will be thus ensuring a long-term income and at the same time most people will be able to buy the drug.

Moreover, it is essential for the Non-Governmental Organizations (NGOs) to create a network of provision of the drugs and prioritize areas which suffer the most from certain diseases. The use of volunteers with the necessary experience would be needed for this action.

Taking into consideration that due to the fact that many companies do not invest in drugs that treat diseases such as AIDS because they have no interest in doing so, company owners should be urged to manufacture products that will be sold in the LEDC's. The World Bank and other relevant organizations must help financially for the implementation of this measure.

Finally, as soon as the patent protection has elapsed, governments should urge all other pharmaceutical companies to manufacture the drug because the more companies produce, the more the competition and this leads to the reduction of the prices. As a reward, the government should fund a part of the production or offer grants or other subsidies.

Certain nations have abolished the patent system, due to the fact that numerous people were dying since they could not afford the essential medicines for the treatment of their diseases. As a result, companies stopped producing new medicine and this led to a pause in the technological advancement of the country. At the same time, the companies closed and many people lost their jobs.

We hence reach the conclusion that abolishing the pharmaceutical patents will be harmful for the economy and the development.

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