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March 22, 2017

Members of the Committee, thank you for inviting me here today. My name is Gerard Anderson and I am a professor at Johns Hopkins University Schools of Public Health and Medicine. I am not here representing Johns Hopkins University, but testifying in my role as a Professor.

Currently, I am working on the issue of drug pricing with a team of faculty from Johns Hopkins as part of a grant from the Arnold Foundation and the Commonwealth Fund. I have not received any funding from pharmaceutical companies, drug wholesalers, health insurance companies or any other entities involved in the pharmaceutical supply chain.

Last December, I had the opportunity to testify at the Senate Aging Committee on how certain off - patent drug companies were raising their prices when there were no competitors. Your committee had Martin Shkreli and others testify on similar issues.
http://www.aging.senate.gov/imo/media/doc/SCA_Anderson_12_9_15.pdf

In my testimony at the Senate Aging Committee, I focused on three approaches that would create more competition in the generic industry. The overall goal of these three approaches was to deter pharmaceutical companies, such as Turing Pharmaceuticals (Martin Shkreli) from dramatically raising the prices on their drugs.

Since it is the absence of competition in the market place for a particular drug that enables a drug company to get away with exorbitant price increases, my first recommendation was to promote additional competition by allowing the FDA to offer an expedited review process for generic drug companies. My first recommendation was to allow companies seeking to enter the market to get an expedited review path at the FDA, making it more likely that the generic company would indeed enter the market. It would reduce the amount of time that any given company could maintain a monopoly position.

The second recommendation was to allow the original branded company that received the original FDA approval to import the drug into the US. This applies if the original banded company is still making the drug overseas. For example, GlaxoSmithKline (GSK), the original patent holder of the Turing Pharmaceutical drug, daraprim, manufactures the drug in the UK and sells it in the UK for only a few dollars.

My third recommendation is to allow compounding, but only for off-patent drugs that do not have any competitors. However, this only applies in situations where there is no competition and is done by reputable compounders approved by the FDA.

Along with two of my colleagues at Johns Hopkins, Jeremy Greene and Joshua Sharfstein, I published an article in JAMA providing more detail about these recommendations. Greene, Jeremy A., Gerard Anderson, and Joshua M. Sharfstein. "Role of the FDA in affordability of off-patent pharmaceuticals." *JAMA* 315.5 (2016): 461-462.

Senators Collins and McCaskill have adopted some of the recommendations in proposed legislation and the FDA has issued a policy statement stating that they will use expedited review in certain cases (http://www.congress.gov/bill/114th-congress/senate-bill/2615/text).

In preparing my Senate testimony, I became aware of the problems created by off-patent drug companies using limited distribution networks as a way to keep generic companies from copying their drugs and competing with them. However, it was necessary for the Congress to discover additional information using their investigative powers before the seriousness of this issue became apparent.

The Senate Aging Committee released a report that summarizes how certain off-patent drug companies have used limited distribution networks to stifle competition. https://www.aging.senate.gov/press-releases/collins-mccaskill-release-committee-report-of-bipartisan-drug-pricing-investigation. As a result of this report, we began looking into how limited distribution networks are corrupting the distribution process.

Limited distribution networks

Nearly all drugs are sold to patients through retail or nail order pharmacies, hospitals. Large wholesalers like McKesson, Cardinal and Amerisource Bergen distribute these drugs. They compete against each other and, as a result, the actual cost of distributing the drugs is very low. In contrast, specialty distributors are the sole source for certain drugs. They distribute a small, but rapidly increasing, number of drugs. This creates several problems.

In conducting our investigations, the first thing that we learned is that there is very little data on which drugs are distributed by these limited distribution networks. The FDA created the first limited distribution networks to protect patients. However, this original intent has been abused and safety is not the primary objective when some off- patent drug companies now use limited distribution networks.

The Food and Drug Administration Amendments Act of 2007 gave the Food and Drug Administration (FDA) the authority to require a Risk Evaluation and Mitigation Strategy (REMS) from manufacturers in very certain circumstances. REMS is an approach to manage a drug or biological product with a known or potential serious risk in order to ensure that the benefits of the drug or biological product outweigh its risks. In short, REMS is a “safety strategy” to manage known or potential risks. This makes good clinical sense since some drugs can be dangerous without proper handling.

Each Risk Evaluation and Mitigation Strategy is unique and targets a particular drug or drug class. The FDA may determine that a REMS program is necessary at any time, including before or after a drug is approved. All REMS are required to have a timetable for submission of assessments that evaluate the REMS’ effectiveness. In addition to the timetable of assessments, the REMS may contain any

combination of four other components: a medication guide or patient package insert, a communication plan, elements to assure safe use, and an implementation system.

FDA maintains on its website a list of drugs that are required to have a REMS.
http://www.accessdata.fda.gov/scripts/cder/rems/.

The FDA places these drugs on the REMS list for very specific reasons. Many biologics (drugs that mimic the compounds used in the body) are placed on the REMS list because they are often living cells or other compounds that can degrade quickly. Some of them require special handling because, for example, they are heat sensitive or susceptible to microbial contamination. All of this makes clinical sense and the FDA REMS program should be continued.

The problem is that some drug companies have used the REMS concept for their own benefit when they created limited distribution networks. The objective was not safety but profit.

Abuse of the REMS System

A few drug manufacturers quickly learned that selling drugs through limited distribution networks has advantages. In response, wholesalers saw the market opportunity and created limited distribution networks. Many of the large wholesale companies also offer limited distribution networks as subsidiaries.

One of the most visible examples is the way that Martin Shkreli and Turing Pharmaceuticals used specialty distribution networks to keep other companies from copying and manufacturing darapriam, a drug that had been off- patent for over 50 years. A second very visible example is Valeant Pharmaceuticals. Valeant created its own exclusive relationship with the online specialty pharmacy, Philidor, which has been the subject of considerable investigation by Congress.

Examples of other drugs that are less well known, but have seen rapid price increases and also use limited distribution networks are H.P. Acthar Gel (corticotropin injection) and Emflaza (deflazacort).

H.P. Acthar Gel was approved for use in treatment of multiple sclerosis and infantile spasms. It has been off- patent since 1952. There was a drug shortage issue due to manufacturing and stability in the late 90's. Questcor used this shortage to raise the price from $1,650 to $23,000 overnight in 2007 when they purchased the drug from another company. They stated the reason for increase was 'really, our only principle market is infantile spasms."
http://www.nytimes.com/2012/12/30/business/questcor-finds-profit-for-acthar-drug-at-28000-a-vial.html?ref=health
The drug was later purchased by Mallinckrodt, and now the wholesale acquisition cost is over $40,000 per vial.
http://www.fiercepharma.com/special-report/h-p-acthar-gel-questcor-mallinckrodt

The D FDA does not require a REMS for H.P. Acthar Gel. The limited distribution network was seleclted by the company and is only available through limited distribution networks (Acthar Support and Access Program (A.S.A.P.)) and not through traditional distribution wholesalers. After treatment is initiated, prescriptions must be submitted to the Acthar Support and Access Program in order to ensure an uninterrupted supply of the medication.
https://www.pparx.org/prescription_assistance_programs/hp_acthar_gel_patient_assistance_program

The FDA recently approved Marathon Pharmaceutical's steroid deflazacort (brand name Emflaza) with orphan drug designation for treatment of Duchenne muscular dystrophy.

Patients had been importing this drug from the UK for approximately $1,500-$2,000 annually for many years. Marathon planned to launch the drug with a list price of $89,000 annually, defending its price by pointing to the prices of other orphan drugs that often exceed several hundred thousand dollars annually.

The distributor for deflazacort is expected to be LGM Pharma, another specialty distribution network. http://lgmpharma.com/product/deflazacort/
The drug has not been distributed in the US yet because Marathon delayed the launch of deflazacort after widespread outrage over their pricing plan, including two Senate requests for justification of the exorbitant list price.

Details on this relationship can be found in these WSJ articles:
https://www.wsj.com/articles/marathon-pharmaceuticals-to-charge-89-000-for-muscular-dystrophy-drug-1486738267

https://www.wsj.com/articles/lawmakers-probing-firms-decision-to-charge-89-000-for-muscular-dystrophy-drug-1487006652

Problems Created by the Limited Distribution Networks

Perhaps the biggest problem is that some drug companies have used limited distribution networks to prevent generic drug companies from getting access to the drug and developing another generic version to increase competition. Essentially, they accomplish this by allowing only one wholesaler to distribute the drug. The wholesaler then makes sure that competing companies do not have access to the drug and so they cannot copy it. As a result, they are unable to submit an abbreviated new drug application (ANDA) to the FDA.

There are other concerns with limited distribution networks. One is access to patient information by the drug company. Placing a drug on a limited distribution network provides the drug company additional information about each patient taking the drug. Because there is only one distributor, it is possible to track every single patient using this drug and find out detailed information about that specific patient. Patient privacy is compromised since the drug company can have access to personal information about a specific patient. With multiple wholesalers, this is not possible.

The limited distribution network does allow the drug company to help patients who cannot afford the drug to receive financial assistance. The advantage of this is that the patient with limited financial means can more easily obtain financial assistance. The problem, however, is that financial assistance programs can steer patients to more expensive or less effective drugs. This undermines the efforts of PBMs, health plans, and corporations to steer patients to the most effective and least costly drugs.

There are other problems created by these limited distribution networks. For most drugs, there are a multitude of wholesalers that can provide the drugs 24/7. For hospitals and physicians immediate access to certain drugs is essential to the health and safety of the patient. However, many of these limited distribution networks do not operate 24/7 and so there is a lag in obtaining access to these drugs that

can have devastating implications for patients.

In addition, placing these drugs in a limited distribution network prevents competition, since there is only one supplier. Suppliers and PBMs compete against each other to get the lowest prices, but when there is only one limited distribution network, there is no competition. The drugs placed on limited distribution networks typically have higher distribution costs.

Government programs and limited distribution networks

The Medicare program contains certain provisions that limit the ability of drug companies to exploit limited distribution networks. Part D plans may not restrict access to Part D drugs to only specialty pharmacies in such a manner that restricts access. Part D plans are permitted to use restrict distribution networks when it is necessary to meet FDA limited distribution requirements or ensure the appropriate dispensing of Part D drugs (i.e., when the drug requires extraordinary special handling, provider coordination, or patient education, or when such extraordinary requirements cannot be met by a network pharmacy). If the drug is part of a limited distribution network in the 340B program operated by the Public Health Service, then the Public Health Service needs to be told about this in writing.

Challenges To Overcome

There is a lack of federal guidance regarding which medications can be a part of a limited distribution network; the decision is primarily at the discretion of the pharmaceutical company. Aside from the drugs that are part of the REMS program there is no federal guidance on which drugs can be placed into limited distribution networks. The problem is that some drug companies are placing drugs into limited distribution networks to maximize profits not to maximize safety.

We simply do not have all the data we need to identify all of the problems that limited distribution networks are creating. There is little empirical data on how many drugs are affected by limited distribution networks because this data is not routinely collected. We do not know how much this adds to the price of the drugs. However, we can see from the few examples with Turing Pharmaceuticals, Valeant, Mallinckrodt and Marathon that the magnitude of the price increases is significant.

As part of our research we are assembling an inventory of drugs that are dispensed in limited distribution networks and the characteristics of these medications. We are examining whether prices increase when the drug is placed in a limited distribution network. Finally, we are examining the restrictions that are imposed on limited distribution drugs and how they affect other generic drug companies, hospitals, physicians and ultimately patients. Hopefully we will be able to provide the Committee more information at a later date.

Policy Options For the Committee to Consider

We have three policy recommendations for the Committee to consider:

1. The most restrictive is to limit the drugs placed on limited distribution networks to REMS drugs.

2. A less restrictive alternative is to require drug companies using limited distribution networks to sell their product to all competitors
3. The least restrictive alternative is to require drug companies using limited distribution networks to announce this when they submit the new drug applications to the FDA

We are also looking at different alternatives. One possibility is to create a non-profit drug company that would manufacture off- patent drugs that did not have any competitors. We are working with a group of large hospitals and managed care plans to set up a non-profit drug company to manufacture a limited set of drugs. The non-profit company would specialize in manufacturing off-patent drugs without any competitors where there have been unjustified large price hikes.

I am happy to answer any questions