

# SUSTAINABLE PROCUREMENT OF DRUGS IN PHARMACIES IN THE EARLY STAGES OF COVID-19

**Jozsef GAL**  
**Greta NEMETH**

***Abstract::** A pharmacy is a health care institution engaged in the activity of providing health care for the supply of medicines, where it provides the medicine and the professional information related to its use directly to patients.*

*A pharmacy can only obtain medicine from an organization that has a pharmaceutical wholesale license. In Hungary, there are 7 large pharmaceutical wholesalers serving the needs of pharmacies, however, each pharmacy is connected to a maximum of 2-3 wholesalers and in addition there is usually only one that delivers twice a day and in case of any order limit. This is done on the basis of an individual agreement or contract between pharmacies and wholesalers.*

***Keywords::** COVID-19, logistics, sustainable procurement, pharmacy, supply chain, health care*

## 1. INTRODUCTION

Today, there are about 2,400 pharmacies in Hungary, which are supplied by pharmaceutical wholesalers. Wholesalers' logistics centers are supplied by medicine, either from pharmaceutical companies or from licensed distributors. Upon arrival at the wholesaler's warehouse or logistics center, the medicines are stored, inspected and systematized according to strict rules. The warehouses store huge quantities of nearly 17-18,000 types of medicines. Some of these are only stored for one day, but there are also those that only spend a few hours on the shelves before delivery. More than a thousand orders are taken daily, where the ordered medicines are prepared and delivered using vending machines. The task of pharmaceutical wholesalers is by no means simple, extremely accurate and precise logistics are needed to execute orders properly on time.

The logistics process for pharmacies is very similar to that of wholesalers, only in smaller quantities. The elements of the process are drug

inventory, procurement, contact with suppliers, ordering, receipt and storage of drugs, complaints, proper warehousing, proper sales order (FIFO or FEFO principle). (Buki et al. 1995)

The operation of a pharmacy is similar to other trades in many respects, but because it is a health care institution, it is subject to much stricter rules. The sales area, named pharmaceutical officina assistant pharmacists issue medicine. There is a lot of professional work going on in the background. One of these is magistral medicine, during which the pharmacist prepares the medicinal product on the basis of the appropriate prescription. Proper storage and expiration date are important because without them, the medicine will be dispensed irregularly. Of course, there are drugs to be prepared that are prescribed more often, we prepare them in larger quantities in advance, so the patient does not have to wait days for the drug to be prepared, patient care is accelerated. Sustainable drug supply is very important during pandemic as well. Fast and contactless service has become a new form of trade technology (Zsótér 2019).

Ordering process: It is a general process that normally the pharmacy always orders from the wholesaler in the morning, which is already shipped out in the afternoon. Of course, you can also order medicine in the afternoon / evening if necessary. They will be delivered early in the morning.

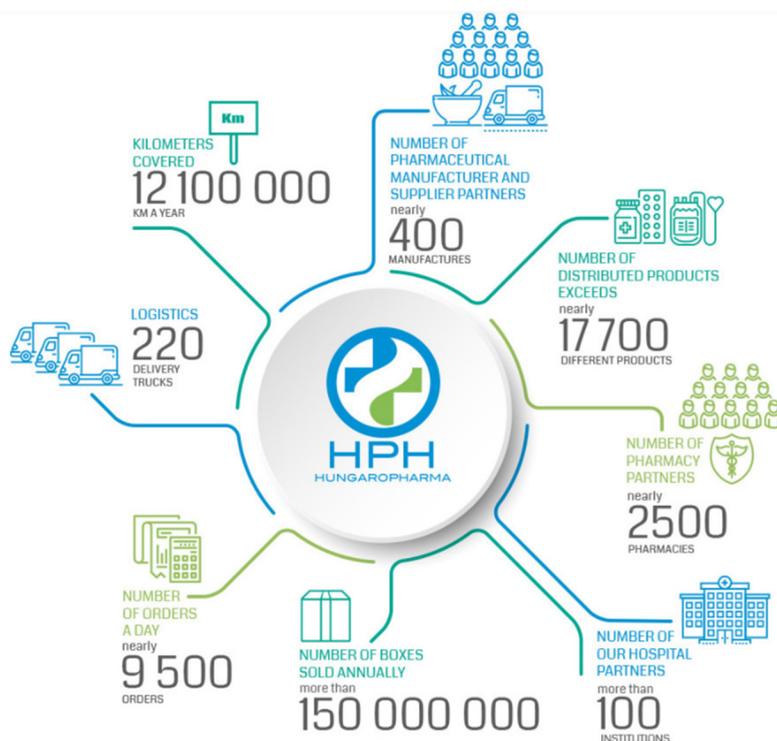
Whether you order in the morning or in the afternoon, there are several ways to do so. It is possible to order by phone through the telephone customer service as well as through a closed online system. After ordering online, you will receive an immediate written confirmation stating whether the ordered product is in stock and when it will be delivered. Along with the ordered products, we also receive invoices online and on paper, so it is easy to check whether the quantity and quality of the invoiced goods are the same as the goods received. (MGYK 2019)

Stocking: Just as an order can be placed in two ways, the wholesaler's current stock can be checked in two ways. By phone or online computers, the patient receives up-to-date / current information about the arrival of the drug. (GYNSZ 2019; Way of medicines 2021)

Pharmacies apply the "less inventory-less inventory cost" principle. This has evolved over many years, for several reasons. Ownership, on the one hand, and the physical limitations of the pharmacy, on the other, that is, the building cannot be expanded and, based on current options, every square foot of the pharmacy is fully utilized. Thirdly, due to the sale, the products ordered at a discount, of which we hold more than the usual monthly quantity. This is possible because the pharmacy receives a discount for a larger number of boxes or gets higher service value. This larger inventory in a pandemic was

favorable because we were still able to give patients much of the medicine that had become scarce because there were more in stock but it was no longer available elsewhere. There are products that are only ordered in individual cases. These are formulations that are usually of high value and are only ordered if the patient requires them. This may include certain painkillers and sedatives, which must be ordered on a separate order form and kept separately. These are shipped separately from other medicines and have a longer delivery time due to multiple-documentation. As their arrival has required more work so far, their procurement has become particularly questionable due to the large increase in turnover during pandemic. (HPH1 2021)

It is therefore clear from the above that pharmacy procurement takes place indirectly, with the wholesaler playing an important, unavoidable role.



**Figure 1** Key values of Hungaropharma Zrt, 2021 (HPH2 2021)

## 2. MATERIAL AND METHOD, SITUATION ANALYSIS

An emergency situation was declared on March 11, 2020, after the COVID-19 epidemic appeared and began to spread in Hungary as well. People panicked and, despite warnings and press conferences, began to buy an astonishing amount of food and medicine. Overnight, crowds rushed down pharmacies to shop and store a variety of medicines. The traffic increased 3-4 times in instant long lines snaked before the opening of the pharmacy until the closing and the waiting time increased to 45-50 minutes. Pharmacies tried to meet the sudden increase in demand, but unfortunately the wholesalers could not fully follow this, so in a few days shortages developed. Key values of wholesalers became more complicated with many partners in the supply chain (Figure 1). It was mainly the antipyretics that were sold out to a large extent and also those that were put to the fore abroad as the epidemic was already more advanced there. In addition, immune boosters, masks, gloves and hand sanitizers, cough suppressants, and throat disinfectants were typical, but many people came to replace their monthly medications, often for 3 months, the reasons for the shortage. Neither pharmacies nor wholesalers were prepared for such an acquisition. The deficit item could not be obtained from anywhere there no other alternative to sources. It also became questionable whether protective equipment and protective clothing would remain for own use?

Neither the pharmacies did not have access to vital products many times, nor other health care institutions such as surgeries and hospitals. There were more and more errors during orders and delivery, which made patients even more panic-stricken. From this, patients noticed that more and more products were replaced or the arrival time of the products was uncertain, but there were also some that were completely out of stock 2-3 days after the declaration of the emergency. This is also why people were scared, so buying became more and more intensive.

In addition to the growing number of shortages, the other big concern was that the wholesalers reduced the frequency of daily deliveries as they were unable to prepare and deliver the formulations due to the sudden high volume of orders.

The next problem with bulk orders was that it was often in vain to confirm which medicine was available because the system did not work properly, so we could not provide patients with sufficiently accurate information about the availability of the medicine.

During the delivery, several serious problems arose: the delivery was delayed more and more, the delivery time became longer and longer, the assembly of the packages became more and more inaccurate, not the ordered

product was included in the package or was not included in the package at all. There was more and more chaos, it was not possible to know which product was available and which was not.

In addition to delivery problems, the wholesalers' online customer system has temporarily become unstable due to high load.

The assembly of the goods was also delayed due to the newly introduced processes. Such precautions included pre-entry thermometry, use of protective equipment, and continuous disinfection of warehouses, delivery cars and crates.

The introduction of certain restrictions in pharmacies has also slowed down patient traffic. Such as e.g. admission of a limited number of patients to the called 'officina', use of disinfectant, etc. (Witte et al. 2016)

The emerging shortage was not really a non-existent problem for most drugs because it is true that the stock ran out of wholesale, but replacement was constantly arriving. However, due to the load, they could not process and resell it at the right speed, there were not enough people and there was not enough capacity. Pharmaceutical manufacturers were able to ship many drugs, but wholesalers were unable to take over the preparations quickly enough. (Lantos, Durgo 2011) This was mostly about drugs, but there was really no supply of masks, gloves, disinfectants. Thus, a hitherto non-existent problem emerged, occurring simultaneously in all pharmacies and wholesalers, developing at different speeds. These problems had to be resolved in such a way that consumer / patient confidence was not diminished and that medicines were received at the right time, bearing in mind both moral and ethical and economic considerations.

### 3. RESULTS AND SOLUTIONS

It was in everyone's interest to solve the problem. Wholesalers and pharmacies have been working hard to resolve the situation. However, the possibilities in the field of drug distribution are very limited, as a drug can only be ordered from a drug wholesaler. Even though the delivery was only once a day, the pharmacy still ordered several times a day because it happened that the product we booked in the morning may not have been able to be ordered in the afternoon because it ran out quickly. In the case of preparations in the other product category, other alternatives were sought and ordered from smaller companies, but as several pharmacies did so, the possibilities soon ran out.

After a week or two, as mass shopping declined, the old 'system' began to recover and wholesale also made up for its shortcomings.

Products that were more sought after due to the epidemic were ordered or accumulated more often and more, i.e. if they could be ordered and were in stock at the wholesaler, they demanded more, but it was taken into account that they could be sold and purchased at a certain time was also appropriate.

For some particularly sought after products, such as gloves or masks, some merchants contacted us and offered products. However, it was worthwhile for these suppliers to look more closely, as companies that did not have all the necessary permits also took advantage of this situation. Increased attention had to be paid to the purchase price and quality. It was also necessary to think that the financial possibilities of the customers are not unlimited either, despite the fact that the product, which has not received much attention so far, has become important and they have not bought it at 5-6 times the price.

However, patients continued to be served to the best of their ability so that their daily drug supply and health would not be harmed by slower and more cumbersome delivery.

In several cases, to ensure that patient care was not harmed, other pharmacies also inquired about certain products and, if necessary, referred the patient to another pharmacy.

You can also find information about purchasing a product on some online professional forums.

Due to the high turnover and the need to cater for the increased number of patients, certain pharmacological processes had to be pushed into the background. One such process was magistral drug making, which was undertaken only in urgent cases or given a long commitment period. In addition, the management of many professional documents was postponed. Such a 'discount' was the documentation of disassembled preparations, the sealing of prescriptions.

In order to provide patients with a faster but adequate standard of work at a fast pace, it also required more patience from customers, which I did not think was a problem.

#### **4. SUMMARY**

This epidemiological situation has put both wholesalers and pharmacies in a very special position. The increased demand had to be met in such a way that the continuity and quality of the drug supply was maintained. None of the branches of the pharmaceutical supply market was adequately prepared for such increased turnover. We believe that most pharmacies have outperformed and made every effort to ensure that supply

was not reduced. In addition to the limited options, we found some solutions that worked at the same time. In the case of other products, these are the search for smaller suppliers, as well as the purchase of a larger number of existing products and the ordering several times a day, telephone inquiries for certain products. We were forced to push some professional tasks into the background, thus making the service of patients continuous.

Of course, the main solution was to reduce the number of patients, so that both the wholesaler and the pharmacy were better able to stock up and stock the right amount.

By the beginning of April 2020, the turnover had decreased, so the turnover of pharmacies and pharmaceutical wholesale had also returned to the original state. From now on, the problem seems to be solved unless another emergency comes again, but we are confident that in this case we will be better prepared for the problem.

Accurate information about the situation would have been very important, as people are being driven by forces that threaten the security of supply processes. Customers also have an important role to play in achieving a sustainable supply chain, so the media has a key role to play and needs to take responsibility. Supply disruptions of pointless accumulation would not have occurred in this case. Pharmacies and wholesalers quickly found a solution on a business basis, but over-purchases also caused additional costs and price increases for some products.

The pharmaceutical sector in Hungary was better prepared for the second and third waves of the pandemic, so stock shortages were no longer typical with the introduction of online prescriptions. The opening hours of pharmacies are not limited even today, so a sustainable supply of medicines has become ensured.

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**NOTES ON THE AUTHORS**

**Jozsef GAL** (Dr. habil. PhD) associate professor; University of Szeged, Faculty of Engineering, Department of Engineering Management and Economics, Mars ter 7. 6724 Szeged, Hungary; phone: +36 30 313 5873; email: [galj@mk.u-szeged.hu](mailto:galj@mk.u-szeged.hu)

**Greta NEMETH** (dr. pharm.) University of Szeged, Faculty of Economics and Management, Kalvaria stg. 1. 6720 Szeged, Hungary.