

ROMANIA: Pharmaceutical Sector Analysis



Executive Summary

Romania has a pharmaceutical market of 5.47 billion Lei (1,550 million Euro) in 2006, where the market for prescription drugs was about 4.58 billion Lei, of which 80% are financed by health insurance. Market growth has been more than 20% p.a. over the last years, but per capita drug consumption is still low with an average of 75 Euro per year. Consumption is higher in urban and lower in rural areas, in line with income differences and access to providers (prescribing physicians and pharmacies). Fifty percent of the population lives in rural areas, but only 20% of doctors and 30% of pharmacists practice their profession there. The drug market is growing mainly due to the introduction of new, expensive drugs, although generics are dominant in volume terms. Several of these new drugs have made it under the top 20 in terms of sales, although there are only a small number of patients benefiting from them. Access of drugs to the reimbursement lists (providing 90%, 50% or full reimbursement depending on the classification of a drug) is based on a commission recommendation. The commissions in charge are dominated by the medical profession; commission members are not financially accountable for the impact of their decisions. The health insurance house uses budget caps for pharmacies as a rationing tool, which creates patient dissatisfaction and keeps drug reimbursement issues in the public debate. Pricing and reimbursement decisions are not well coordinated between Ministry of Public Health (MOPH) and Health Insurance House. Stakeholders also complain that procedures are not sufficiently transparent and that unethical practices can influence decision making, promotion and utilization of drugs. Prescribing practices of physicians are not informed by clinical guidelines; abuse is likely. There is no information system that would allow real time and systematic analysis of the prescribing practice of individual physicians.

The report outlines options for steps to address deficiencies identified by the MOPH and other stakeholders. Main issues that should be addressed in the near to mid term are:

- Clarifying criteria for inclusion of drugs in the reimbursement list (Annex 1)
- Modifying pricing and reimbursement rules so that price setting becomes simpler and more transparent and costs can be better contained (Annex 2)
- Considering a modest flat dispensing charge to discourage over-consumption
- Establishing a coordination group of technical experts from MOPH and CNAS
- Upgrading the CNAS information system so that prescribing behavior of physicians can be monitored (Annex 3)
- Tackling prescription fraud by better monitoring of physician-pharmacy interaction

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Glossary of terms

ANM	Romanian Medicines Agency
CNAS	The Romanian Health Insurance House
EMA	European Medicines Agency
EU	European Union
GDP	Gross Domestic Product
INN	International Non-proprietary Name
MOPH	Ministry of Public Health
nCADREAC	New Collaboration Agreement between Drug Regulatory Authorities in Central and Eastern European Countries
OTC	Over the counter (without prescription)
PPP	Purchasing Power Parity
RON	New Romanian Lei
USD	US Dollars
WHO	World Health Organization

Introduction

Romania is the largest country in Southeastern Europe and has a population of more than 21 million. Since 2004 it is a member of NATO and since 2007 EU member state. During the last years, economic development has been positive with one of the highest growth rates in Eastern Europe and a decline in unemployment. GDP per capita was 9869 USD (PPP) in 2006. Health expenditure was at 6.3% of GDP in 2005¹, of which about two thirds come from public sources. Annual per capita spending for health was 232 USD. For comparison, countries in the Euro-Zone spend on average 10% of their GDP on health, with annual per capita spending of 2969 USD (2004 data).

Population size and economic development make Romania one of the more interesting regional pharmaceutical markets from an industry perspective. Government policies have been more liberal than in other countries in the region, allowing easy market access and access to funding with relatively high reimbursement rates for new drugs. This creates pressure on the financing system (health insurance), which has to absorb increasing drug costs at a rate beyond the growth rate of the overall economy. This report analyzes the current situation and makes suggestions how the system can be adjusted in order to maintain access to effective medicines for all - while considering the limited resources available in an economy that is still far behind the EU average.

Although there is no acute crisis in the sector, it appears that Romania is struggling for years with many unresolved drug policy questions. The market is growing very fast and so is public drug expenditure (although from a low level). The growth comes mainly from new, expensive drugs and does not equally benefit the entire population. A National Drug Policy was drafted around 2002/2003 with WHO assistance but never adopted. Major actors such as the MOPH and CNAS are not well coordinated; their technical people rarely interact with each other. Several external advisors have made recommendations to introduce more systematic procedures as well as better monitoring and control tools, but lack of capacity and disagreements between stakeholders has limited progress so far to a series of small changes and patchwork reforms. The fast economic growth during the last years allowed increases in the drug budget that may

¹ Espicom Business Intelligence; WHO reports 5.1% in 2004

have prevented financial disaster and reduced the necessity to control spending more effectively.

Nevertheless, there has been stepwise institutional progress compared to a decade ago. Romania today has a basis for the integration of pharmaceutical policies towards a more strategic approach once political will is strong enough – or pressure from growing expenditures reaches a level painful enough to force better collaboration across different interest groups.

The report represents the view of the author and perspectives of stakeholders that were interviewed during the visit in Romania; it does not represent an official World Bank position. Given the short timeframe available for its preparation, this report does not claim to be a comprehensive analysis, rather a contribution to an ongoing discussion that can be amended at any time by additional data and expert insights that were not available or accessible at the time of the initial analysis.

The pharmaceutical market in Romania

Romania's pharmaceutical market has been very dynamic in recent years, in particular in the outpatient and OTC sector, while growth in the hospital market was relatively slow overall. A sharp increase in 2004 coincides with an election period. It has been reported that prior to elections restrictions on drug spending sometimes are lifted by the ruling party in order to gain popularity. Tables 1 and 2 show the market development over the last three years.

Table 1: Romanian pharmaceutical market in million Euro (includes retail sales, hospital sales and OTC drugs; at retail prices)

Year	2004	2005	2006
Total market retail in million Euro	960	1270	1550
Growth over previous year	28.0%	18.0%	19.2%

IntelliNews – based on Cegedim data

Chart 1: Total Pharmaceutical Market in Romania (million Euro)

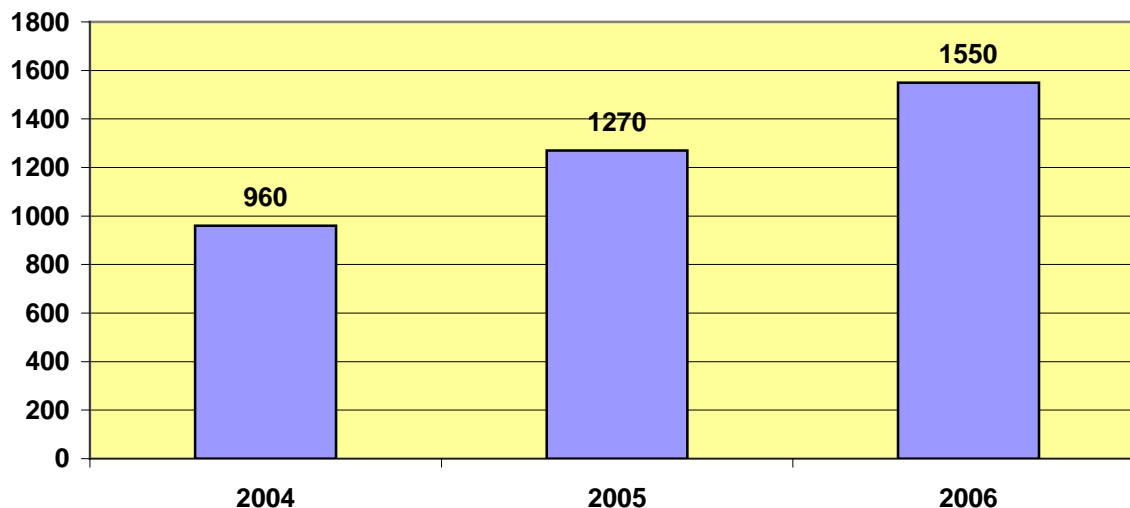


Table 2: Romanian pharmaceutical market in million RON (at retail prices)

Year	2005	2006
Rx market (retail)	2750	3445
Growth over previous year	18%	25.2%
Hospital market	1120	1134
Growth over previous year	12%	1.3%
OTC market	732	897
Growth over previous year		22.6%

IntelliNews – based on Cegedim data

The hospital pharmaceutical market appears stagnant in local currency terms, but growth rates are also influenced by currency fluctuations. In 2006, the RON appreciated against USD and Euro, which made imports cheaper. Expressed in Euro, the market grew faster than in national currency.

The market growth continues to be dynamic in particular in the outpatient sector, with OTC sales in the first quarter 2007 already growing by 30% over Q1/2006 and a projected CNAS drug budget increase of 15% for reimbursable prescription drugs.

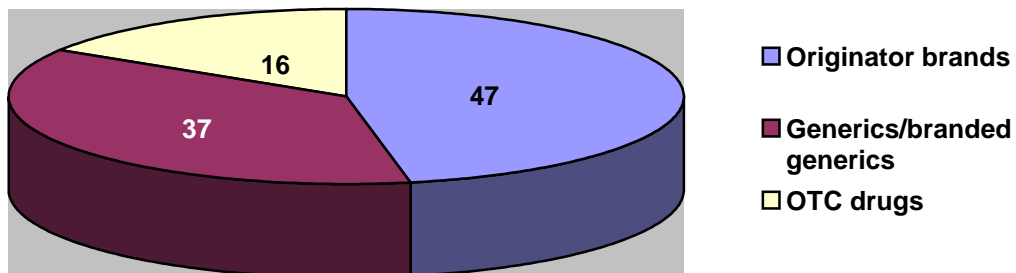
The pharmaceutical market in Romania is dominated by imports, which make up 80% of total sales value. However, these 80% represent only 20% of the volume of drugs consumed, due to the fact that imports are mostly patent protected and expensive medicines while the drugs manufactured by Romanian companies are older low-cost generics. The share of imports has increased from 1996 to 2006 from 45% to today's 80% of market value. This suggests that the modernization of the drug portfolio, combined with marketing campaigns by manufacturers for the prescription of these new drugs, is one of the key cost drivers in Romania. The top twenty list of drugs according to CNAS spending confirms this trend – many of these drugs are very expensive biologicals for use in certain rare conditions, others are expensive brands that could be replaced by cheaper generics.

Table 3: Top 20 list according to CNAS spending in 2006

Rank	Brand, INN Name, Manufacturer	CNAS Expenditure 2006 (million RON)
1	Neorecormon, erythropoietin Beta, Roche	70.1
2	Pegasys, peginterferon Alpha, Roche	62.6
3	Zyprexa, olanzapine, Eli Lilly	50.8
4	Tertensiv, indapamide, Servier	33.6
5	Copegus, ribavirin, Roche	28.5
6	Sermion, nicergolin, Pharmacia Upjohn	27.4
7	Lipanthyl, fenofibrat, Fournier	24.8
8	Detralex, diosmin (comb), Servier	24.8
9	Plavix, clopidogrel, Sanofi-Aventis	22.6
10	Xalatan, latanoprost, Pfizer	21.7
11	Prestarium, perindopril, Servier	20.6
12	Remicade, infliximab, Schering Plough	20.3
13	Solian, amisulprid, Sanofi-Aventis	20.0
14	Aricept, donepezil, Pfizer	19.8
15	Pegasys, peginterferon alpha, Roche	19.7
16	Preductal, trimetazidine, Servier	19.4
17	Indapamid, indapamid, Labormed	16.9
18	Fosamax, alendronate, Merck	16.7
19	Bilobil, Gingko Biloba extr., Krka	16.6
20	Neorecormon, erythropoietin beta	16.5

Chart 2 shows that the market is dominated by branded originator drugs, although the generics share is significant in value. In volume, generics make up about 70% of the business of this company, as they have much lower average unit prices than originator brands.

Chart 2: Sales data from a major distributor, in % of total sales value



In line with the overall market development, the top ten list of manufacturers in Romania is led by six multinational, research based pharmaceutical companies, who together have a market share of close to 40% (see Chart and Table 4). However, Romanian companies or global generic manufacturers with a manufacturing base in Romania are catching up and show rapid increases in sales and market share over the last years.

Chart 3: 2006 Market share of major pharmaceutical companies in Romania

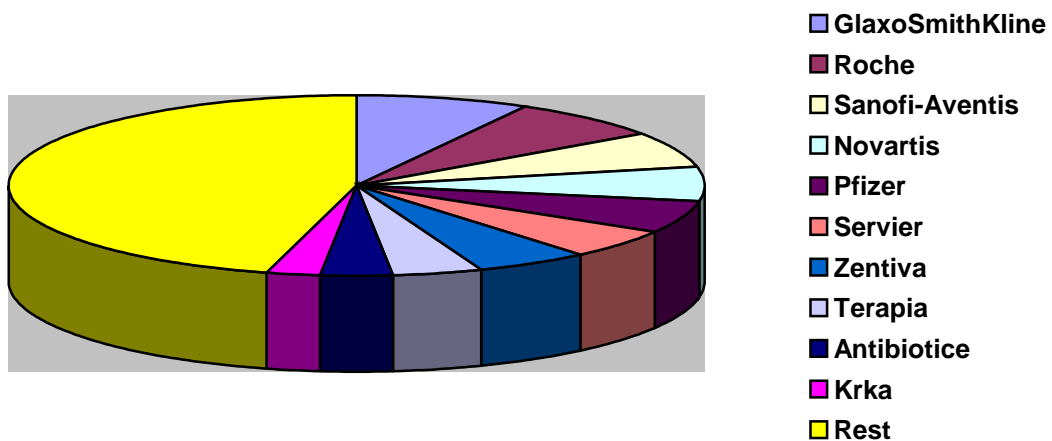


Table 5: Manufacturers on the Romanian market ranked by market share

Rank	Company	Market share 2006	Market share 2005
1	GlaxoSmithKline	8.1% ↓	9.1%
2	Roche	7.1% ↑	6.7%
3	Sanofi-Aventis	6.4% ↑	6.3%
4	Novartis	6.2% ↓	6.4%
5	Pfizer	5.9% ↓	6.0%
6	Servier	5.2% ↑	4.7%
7	Zentiva	5.2% ↑	4.7%
8	Terapia	4.3% ↑	3.4%
9	Antibiotice	3.2%	3.2%
10	Krka	2.6% ↑	2.2%

IntelliNews – based on Cegedim data

Legal and regulatory environment

The pharmaceutical legislation in Romania and the derived regulatory framework has been drafted with reference to European directives, with the latest amendments becoming effective early 2007 with EU accession. As a result, Romania has a modern drug law. Rules for market access are compliant with the EU centralized procedure (easy market access for drugs that have a positive EMEA recommendation), and patent protection for drugs is in line with EU regulations including data exclusivity with a provision that generic competitors can access data for preparing a registration file two years before exclusivity ends (meaning that generics can get on the market immediately after exclusivity of the original brand expires).

The administrative authority in Romania is the Romanian National Medicines Agency (ANM, www.anm.ro). It is a fully developed drug agency with 300 employees, responsibilities for the safety of drugs and biologicals, pharmacovigilance, approval / supervision of clinical trials and coordination with EU institutions and other nCADREAC country authorities. The financing of ANM comes from fees; the registration of a new drug in Romania costs between 3000 and 7000 Euro depending on the type of procedure. Financial independence is required in the case of ANM because otherwise salaries would be limited by law to official public sector salaries and not sufficient to

retain qualified staff. ANM is expected to qualify as an agency that can act as reference agency for the decentralized European registration procedure in 2008.

Responsibility for enforcing regulation is shared between the MOPH and ANM. The inspectorate that controls the trade in pharmaceuticals is under the MOPH, centralized in Bucharest for the entire country. According to trade representatives, there can be significant waiting times before the inspection required to earn a license for opening a pharmaceutical wholesale or retail business is performed. On the other hand it is less likely that inspectors are subject to community pressures or bribery if they come from a different part of the country and are not familiar with the business they inspect. In terms of post-marketing surveillance, there seem to be no effective controls of the drugs in circulation, such as regular sampling from wholesalers or pharmacy shelves and lab tests to identify counterfeits and out-of-date drugs. Given the large number of wholesalers (of which many are small and may have profitability problems) there is a risk that criminals take advantage of the lack of controls and bring counterfeit drugs in circulation. Many countries in the region have been exposed to counterfeit drugs and unfortunately those drugs usually are only found and identified if authorities specifically look for them. In Romania, international manufacturer do occasional test purchases of their own drugs and check for the appearance of counterfeits or illegal imports. At present, there are no reports of counterfeits from such voluntary "market sweeps".

Pricing regulation, drug prices

Prescription drug prices in Romania are controlled by the MOPH. Prices for OTC drugs are not regulated. For imported drugs (single source), the MOPH establishes a price "usually" based on the lowest price of a number of reference countries. The language of the regulation is somewhat unclear, leaving discretion to the officials in charge of administrating the price setting process. For locally manufactured drugs, manufacturers submit a proposal for a price; prices are set in a negotiation process that takes into account prices of comparable products in other countries. In general, drug prices of locally manufactured drugs appear relatively low, although there are no data from systematic price comparisons. Some manufacturers are threatening to withdraw from the market or stop making certain products, because the current process does not allow them to operate with a reasonable profit margin.

Prices are regulated as ceilings, meaning that drugs can be sold legally at prices lower than the regulated price. Wholesale and retail margins are regressive, meaning that lower price products have higher margins. The drug pricing regulation is currently being updated. An import margin of 8.5% that is somewhat anachronistic is supposed to be eliminated in favor of a single distribution margin between 7.5 and 12%, depending on the value of the drug. Retail margins are suggested to be set between 4 and 20%, with a cap at a certain absolute level expressed in RON so that pharmacists do not have windfall profits from very expensive drugs. If implemented, Romania would have relatively low retail margins compared to other European countries. This is possible mainly because pharmacies make a significant share of their profits from cosmetics and OTC drugs.

Table 6: wholesale and retail margins

Wholesale price in RON (CIP ¹)	Maximum wholesale + pharmacy margin
0 – 2,00	24%
2,01 – 5,00	20%
5,01 – 7,50	15%
Over 7,50	12%

Drugs that require prescription bear 9% VAT, whereas OTC bear 19% VAT.

Financing of medicines and payment system

Total CNAS spending for drugs is detailed in Table 7. Drugs account for nearly 40% of CNAS spending (including drug expenditure hidden in hospital expenditure), which is a very high value. However, per capita spending in Romania is about 75 Euro per year from all sources and including the OTC segment. This is still relatively low compared to other countries (about half of the Hungarian spending and a quarter of the spending of the top consumers in Europe). Local observers state that there is a significant difference in per-capita drug expenditure between rural and urban areas, the latter ones being much better supplied with medical facilities and pharmacies, whereas in small rural towns and villages the overall provision of care lags behind.

As the figures above suggest, out-of-pocket spending for prescription medicines is less prevalent in Romania than in other countries. Estimates range between 20 and 40% for prescription drugs. Comparing total sales with the drug budget of CNAS including

¹ Carriage and Insurance Paid; the price of the good arrived in customs before any duty is paid

hospital drugs confirms that about 80% of expenditure for prescription drugs is covered by CNAS, 20% come out of pocket for co-payments and purchases of drugs once the monthly cap is used up. One possible reason for the differing estimates is that there may be some leakage of the CNAS drug budget due to fraudulent practices: Doctors can relatively easily write prescriptions that are never dispensed - colluding pharmacists share the income from CNAS reimbursement for these prescriptions with the doctors. Sometimes there is collusion between patients and pharmacists; patients don't ask for the prescribed drugs but request instead cosmetics or other products. Insiders estimate that these forms of fraud could be responsible for up to 10% of total CNAS outpatient drug expenditure (which would be in the range of 200 million RON or 70 million Euro), although there is no way currently to verify this number.

Table 7: CNAS Drug expenditure and out-of-pocket expenditure (million RON)

Year	2004	2005	2006	2007 est.
Outpatient	1138	1757	2007	2316
National Programs	738	821	1153	1284
Hospital	636	637	421**	
Total	2512	3215	3580	
Growth rate %		28	11	
Total market Rx		3870	4589	
Out-of-pocket Rx		655	1009	
Out-of-pocket %*		16.9%	22.0%	

*Not considered in this calculation are the CNAS expenditures for hospital drugs, hidden in the total hospital expenditures (which would lower the percentage for out-of-pocket), as well as potential fraud with CNAS drug reimbursement (which would increase the percentage for out-of-pocket).

**This may be a preliminary value, due to the fact that not all bills have been paid yet (to be confirmed)

The CNAS drug budget is allocated to districts with a fixed amount per province. District CNAS offices break down their budget into monthly allocations to individual pharmacies. This system is cause for a lot of complaints: the allocation means an effective income cap for pharmacists and therefore all pharmacists try to increase their share of the total allocation. Allegations of irregularities in allocating the budget are common and understandable in such a system. The criteria for defining the allocation are based on historic sales figures of a pharmacy, meaning that existing inequalities are prolonged into the future and competition between pharmacies is reduced. A major pharmacy chain has modified the system for their outlets, pooling the entire budget and making the total amount accessible for all outlets as long as funds are available. A CNAS model for

an integrated software package that will allow monitoring drug prescription and dispensing in real time includes such a fund pooling for the entire country. With the realization of such a system the current allocation issues would likely be solved. Resistance can be expected from pharmacies that due to “good relationships” or historical conditions have benefited from relatively high allocations.

For the patients, the budget cap for individual pharmacies means that after a certain number of days into the month, they may be turned away by the pharmacy that has exhausted its budget. They can try their luck in other pharmacies until a few days later all pharmacies have reached their cap and the patient has the choice of either paying for the drug out of pocket (usually in acute cases, prescriptions are valid only 24 hours) or waiting for the beginning of the next month (possible with prescriptions for chronic drugs that are valid for 30 days). In reality however, some pharmacists dispense drugs in urgent cases and post-date the transaction so that it counts against the following month’s budget. More recently, CNAS has introduced a model in which 15% of the monthly budget is being held back and released only after the 20th of the month, trying to mitigate the situation. There have also been extraordinary budget allocations for CNAS in the past to cover arrears accumulated by pharmacies that kept dispensing drugs above the cap, encouraged by generous payment terms from distributors. This has to be seen on the background of the political pressure that can be orchestrated, in particular during election periods, based on perceived inequalities or shortages of funding for medicines. There are anecdotal reports that the budget recently appears to last longer in some pharmacies than in the beginning, which could be due to effective feedback from pharmacists to physicians in their area. The pharmacist has to deal with frustrated and protesting patients face to face and may have ways to influence doctors so that they are more cost conscious in their prescriptions. Previous attempts to make doctors directly responsible for the budget cap have failed due to the resistance from the professional associations.

Private health insurance is not yet developed in Romania. Offering private supplementary insurance is seen by some as a way of generating funds for medicines that are not necessary from a public health view but are on the reimbursement list because there is popular demand and pressure from interest groups. Once supplementary insurance is available, such drugs could be removed from the list, which

would slow down the rapid growth of drug expenditure. However, this requires insurance companies that are willing to take on the risk of insuring a drug benefit program in a situation in which consumption cannot be controlled – there are doubts that private insurers would accept such risks.

Reimbursement of medicines

Drug reimbursement by CNAS is based on three INN based lists with different reimbursement levels:

- The A List consists of drugs (mostly generics) that are seen as important and cost-effective, with a reimbursement rate of 90%
- The B List includes drugs that are judged as less essential or less cost-effective; the reimbursement rate is 50%
- The C List is divided into three sub-lists, all of which enjoy 100% reimbursement
 - C1 for specialty drugs, mainly for severe and chronic diseases such as diabetes, certain severe heart and liver diseases, malignant tumors, neurological and psychiatric disorder and several others
 - C2 for drugs that are reimbursed as part of national treatment programs delivered only through hospitals and outside the budget ceiling for pharmacies. These programs cover conditions such as HIV/AIDS, certain tumors, tuberculosis, multiple sclerosis, diabetes mellitus, renal insufficiency, osteoporosis, transplantation etc.
 - C3 for certain drugs from the A and B list plus some additional drugs, but limited to children, students and pregnant women

Certain drugs on the C lists can be prescribed by specialist physicians only; others require a pre-approval by the local CNAS office. However, the means of verifying the accuracy of the diagnosis are limited and it is assumed that certain expensive drugs are used outside their approved indication (for example in cases that are milder and could be treated with older standard treatments).

Doctors have to prescribe using the generic name of a drug; the pharmacist is supposed to dispense the cheapest brand and the patient has to be informed about alternatives. If there are several alternative brands for one molecule, the lowest priced option sets the reimbursement limit (provided that this option is actually available in the market at

sufficient volumes to ensure supply). Patients need to pay the difference to the reimbursement limit if they choose a more expensive brand. In reality, pharmacists who own their business or are paid based on sales have an incentive to recommend drugs that have prices higher than the minimum because their profit increases with higher prices (although the margins are regressive).

The composition of the A, B and C lists is defined by a three-layered commission system convened by the MOPH (the minister has the power to elect commission members). The first layer consists of experts that come together in specialist commissions and prepare their “wish lists” (usually fairly broad and inclusive). The second layer is the Therapeutic Strategy Commission that has to integrate the various wishes. This commission is large and includes a small number of CNAS and MOPH experts as well as observers from industry and trade. Finally, a transparency commission clears the decision document and passes it on the minister for his signature. Independent observers are not represented in any of the commissions. Criteria for decision making are defined (Box 1), insiders however describe the process as not very transparent and rather permissive in a sense that chief physicians have the tendency to mutually accept their recommendations. The professional support for the commission is provided by two technical experts in the MOPH on top of other tasks, which is not sufficient to allow for a good preparation of files with independent analysis of the arguments provided. The process relies to a large extent on data submitted by the manufacturers and the limited capacity of commission members to read and digest these data. Commission members are not accountable for the economic or public health impact of their decisions. Systematic assessment of pharmaco-economic data or arguments does not take place. As a consequence, it is hard to understand for outsiders why certain drugs are added and by which criteria the reimbursement level is assigned. The entire process currently can last significantly longer than the 90 days demanded by the EU Transparency Directive.

Box 1: Criteria for inclusion of drugs in the reimbursement list (there are also some criteria for non-inclusion and exclusion)

1. New chemical entity, with new therapeutic indication and bringing a major clinical benefit
2. Known chemical entity, with new therapeutic indication and bringing a major clinical benefit
3. Chemical entity with superior effectiveness than other chemical entities in the same therapeutic group / subgroup, demonstrated in controlled clinical studies

4. Chemical entity with enhanced safety compared to other existing chemical entities in the same therapeutic group / subgroup, according to the data presented by the holder of the authorization for marketing / sales within the benefit / risk ratio according to chapter X of MoH Order # 406 / 2005 for approval of guidelines to the procedure to be followed by holders of the authorization for marketing / sales, in actions of pharmaco-vigilance.
5. Chemical entity / associated chemical entities, in the same therapeutic group, with the same therapeutic indication with the scope of existing products for a certain disease, when bringing a decrease of the therapy cost. Therapy cost means the cost of a daily therapeutic dose (DDD).

Governance issues

In all countries, the pharmaceutical sector is vulnerable for non-transparent dealings by special interest groups and individuals who put their own wealth over the public interest. In general, problems can occur where public officials are in positions of power to make decisions that affect income generation for individuals or firms, and rules are ambiguous with lack of transparency and public oversight. Structural weak points are the individuals or commissions that make decisions on registration, licensing, pricing, procurement and inclusion of drugs into the reimbursement lists. Also offices that allocate budgets could be tempted to ask for favors in exchange for a higher allocation.

Bribery can have many form and variations, from cash payments or gift certificates to free usage of company cars or apartments, memberships in exclusive clubs, free trips, payment for domestic services or home improvement work, schooling fees for children, jobs for relatives or consulting contracts that sometimes include affiliations buying services from each other in order to hide the traces of the funding. Low public sector salaries increase vulnerability although there aren't any data showing that increasing salaries alone would have an effect on corruption. Accepting bribes makes officials or experts vulnerable to blackmailing, creating a vicious circle. Honest public servants witnessing corruption become frustrated and leave – or become cynical and join the ranks of the corrupt.

Another potential entry point for corruption or unethical business practices is the supply chain, with wholesalers offering bonuses to retail pharmacies and pharmacists recommending the drugs that are promoted with shared commissions. Or wholesalers deliver certain expensive products directly to the physician, who can hand them out to the patient and send the prescription directly to the pharmacist, who charges the

insurance fund. This is a powerful way of influencing doctors' habits and lowering the threshold against expensive prescriptions. A widespread form of cheating in systems with insufficient control of prescribing physicians is the issuing of fake prescriptions that are not dispensed, but trigger a payment from the insurance that is split between pharmacist and doctor.

Pharmaceutical companies are effective in influencing prescribing physician's behavior in various ways, from high-end and ethical education programs for doctors to blunt forms of bribery such as cash payment for prescriptions, which sometimes is facilitated by the use of patient vouchers – allowing the pharmaceutical representative to monitor and “reward” the prescribing pattern of individual doctors. These vouchers cover the co-payment – eliminating the barrier effect co-payments have against more prescriptions of expensive drugs and leading to a cost increase for health insurance.

Medical experts in university hospitals depend on drug makers to support their research and academic publishing through funding for clinical trials and trips to congresses. These same experts are hired by drug companies on company funded expert advisory boards and by ministries of health for advisory roles that affect drug policy. Conflicts of interest are ubiquitous and not always declared. As a result, any country in which decision making on drug policy is mainly left to medical experts tends to enjoy high acceptance of new technologies with little consideration of cost-benefit relations and overall public health impact.

Many of the practices described above are said to have played a certain role in Romania in recent history. Corruption in all its forms has the potential to undermine any serious reform effort, if not proactively addressed with strong commitment from the top of the government.

A potential ally in addressing corruption are professional associations of industry, pharmacists and physicians that can voluntarily introduce tools allowing for self-monitoring and more transparency even in the absence of “political will” in the administration. An important indicator for the seriousness of such self-regulation efforts is whether outsiders to the profession are invited to participate in the process and share their observations with the general public.

Access to essential drugs

Romanian patients enjoy a higher level of reimbursement and a more inclusive drug list than those in other countries in the region with similar income levels. Nevertheless, drug expenditure per capita is still low in comparison with other new EU members (except Bulgaria). One explanation could be the rural-urban gap in access to and utilization of health services. Only 20% of doctors and 30% of pharmacies are located in rural areas, where 50% of the population lives.

While local access to quality health services is one access barrier, the limited budget is another one. Patients that come with a prescription after the pharmacy has exhausted its monthly budget allocation might be turned away unless they are willing and able to pay out of pocket for their drug. Patients that benefit from one of the several national programs, which are set up to provide expensive specialist drugs under control of experienced doctors and within a defined cost envelope, may have difficulties accessing the center in which such drugs are dispensed. Long travel times and the need to wait in line in order to receive the prescription may discourage many patients. Recently, diabetes and oral anti-cancer products were switched from a program delivered in special centers to one that is delivered through retail pharmacies, in order to improve access and avoid a situation in which patients have to travel long distances in hot weather with their insulin supply for a month. As a consequence, program costs have exploded. Higher utilization may be one reason; another one is that the new program includes several additional drugs as well as more convenient modern insulines, which of course are also significantly more expensive than the old ones.

Hospitals have limited budgets and are independent in their drug procurement. This raises the question whether there is sufficient oversight to ensure good procurement practices and efficient use of funds. There are reports that hospitals frequently run out of stock for certain inpatient drugs. In this case, patients or relatives are sent to a nearby pharmacy with a prescription and have to buy these drugs for cash.

Nevertheless, in summary one can conclude that the entitlements for pharmaceutical therapy for patients with acute and chronic disease are satisfactory, in some cases maybe even better than in countries with higher income. Access barriers affect mostly poorer people who don't know how to use the system or live in rural areas. Addressing

these equity issues should have preference over further expansion of general entitlements and it may even mean that some current entitlements have to be limited in order to create financial space for better service provision to underserved populations.

Local industry and trade

Romania has about 40 national manufacturers, who are making generic or OTC drugs. Only a handful of companies are of significant size. Tightening of legal requirements for manufacturing standards required significant investments for these companies. About 40 companies that were not able to meet EU GMP standards had to close in recent years. At the same time, Romania's accession process to the EU improved the investment climate. Glaxo Smithkline Beecham acquired the Romanian generic manufacturer Europharm 6 years ago. Foreign multinational generics companies such as Ranbaxy, Actavis and Sandoz/Lek as well as some regional players such as the Czech Zentiva and Hungarian Gedeon Richter took advantage of this constellation and acquired major Romanian manufacturers. This is consistent with a global trend towards consolidation of the generics drug business, in which large volumes and efficient supply chains define profitability. The injection of foreign capital and know-how has led to significant market share gains for some domestic manufacturers in the generic market. Romanian companies are also exporting drugs. With the foreign acquisitions the share of exports is expected to grow, as local manufacturing sites will increasingly be integrated into global supply chains. There is also a trend towards forward integration – manufacturers are buying wholesalers and setting up their own logistics chain.

The wholesale sector is still fragmented with about 100 companies, although there is a clear trend to consolidation that has led to the development of some major players with national presence. This trend is likely to continue this year as all distributors have to comply with Good Distribution Practices in 2008. Wholesale margins are currently in the range of 10-12%, higher than in more advanced countries because of lower efficiency and lacking infrastructure. Wholesalers also integrate forward by setting up, buying or partnering with pharmacy chains.

Romania currently has about 5000 pharmacies. 30% are chain pharmacies, with an upward trend as chains are aggressively competing with small owner-run pharmacies. Many pharmacists decide to sell their pharmacy to a chain and continue working on a

salary. There are rules that limit the number of pharmacies based on population, but exceptions from these rules are generously granted, leading to a very high density of pharmacies in some urban neighborhoods. Retail margins are lower than in other countries, encouraging integration of wholesale and retail business. One way to increase profitability is to push OTC sales (visible in the steep growth of the OTC market, +30% in the first quarter 2007). In addition, there are somewhat less transparent ways of enhancing profitability: rebates offered by manufacturers and passed on partially by wholesalers create additional margins for pharmacists, as they get the full reimbursement value from CNAS although they did not pay the full price for the drugs sold on prescription. Pharmacy chains are offering rebate cards with a discount of 5-7% for regular customers, passing on some of the discounts at least to the patient. Manufacturers use such rebates to increase market share in the generic market, if there are several brands with similar prices that are all reimbursed at the same level. Overall profitability of the retail sector including such unofficial (but legal) income is said to be in the range of 20% of sales. This does not account for illegal transactions that are possible in a system that does not systematically control whether prescriptions paid for by CNAS were actually dispensed to the patients.

Box 2 – Observations in a chain pharmacy outlet in a central residential neighborhood in Bucharest

:

The pharmacy is medium size, patients are served by a staff of three assistant pharmacists and one pharmacist. Clients only see cosmetics, nutrition products, vitamins and some common OTC drugs. Prescription drugs have to be hidden (legal requirement). The pharmacy turnover comes to roughly 60% from OTC drugs and cosmetics and 40% from prescription drugs. The pharmacist receives a salary from the owner of the chain, but buys and sells cosmetic products as an independent business. In this case, there is no bonus or other incentive that would potentially bias the pharmacist towards recommending more expensive alternatives in cases in which several equivalent drugs are available. Doctor's prescribe using INN names, but in several cases prescription forms also contain a brand name suggested by the doctor. The average number of drugs per prescription is 3-4, but several prescriptions go to the limit of 7 drugs (4 from the A list and 3 from the B list). Patient number, physician number and prescription number are entered into the pharmacy's computer system by hand. The chief pharmacist controls consistency of the entries. Reports are sent on a monthly basis to the chain headquarter, where they are consolidated and submitted to CNAS. However, datasets do not identify the drugs that were prescribed (only the value per prescription). Therefore manual analysis of the prescription forms would be necessary to monitor doctor's prescribing behavior. The pharmacy dispenses partial packages if the pack size does not match the prescription or the patient does not have enough money for the co-payment for the entire prescription. Patients are informed of

the choices they have if there are more than one equivalent alternative brands. The majority sticks with the cheapest available brand.

Rational use of medicines

Romania has not yet been successful in establishing clinical practice guidelines for treatment of common diseases, despite some attempts and repeated suggestions in this direction from external advisors. Doctors practice medicine based on their education, medical traditions and personal experience. No effective oversight of prescribing behavior is in place. The health information software used by CNAS does not allow for a central aggregation and analysis of data in a way that would allow recognizing individual patterns of uneconomic or non-rational use of drugs. Doctors are therefore not being held accountable for drug expenditure caused by their prescribing. The legal income of a physician is only about 500 Euro per month. Therefore the temptation to accept offers from drug companies for participating in studies or providing consulting services is significant – vehicles to channel funds to doctors and create loyalty with certain brands or change habits in favor of prescription of new expensive drugs.

Insert data on rational use of drugs if available from CNAS

Conclusions and options for future actions

Romania is an example for a health system that has been rather permissive in allowing the pharmaceutical market to play according to the interests of the providers, although within a regulatory framework that ensures drug quality and professional standards of the providers. This framework is not yet quite at the level of the “old” EU countries – capacity for enforcement is clearly underdeveloped – but the main issues for drug policy are in the areas of governance and economic management, not technical and regulatory oversight. There is no official drug policy document that could provide guidance for all players in the sector. Overall drug spending is not high on a per-capita basis, but growth has been very fast without improving equity or making a significant impact on health outcomes. Certain very expensive drugs appear to be used without critical needs assessment. If this trend continues, Romania will have doubled its pharmaceutical market in a few years and still have large parts of the population underserved.

Behind the rapid and hardly controlled increase of drug expenditure, there are a few key policy and management issues that should be tackled in order to improve control:

- Lack of technical capacity in the administration
- Lack of transparency in core administrative processes
- Disconnect between decision making power and financial accountability
- Expert bias in all sector decisions with little or now civil society participation
- Potential for corrupt practices and system abuse with potentially significant financial impact
- Lack of provider oversight and inadequate management tools at CNAS,
- Lack of guidelines for evidence based medicine, no accountability of doctors for the cost impact of their prescriptions

Addressing all these shortcomings is a task that requires time and resources, in addition to “political will” and strong leadership. However, there are some options for short term improvements that can be seen as “low hanging fruit” and may pave the way for more systematic reforms. It should be mentioned here that most “old” EU countries are struggling with increasing drug costs and complicated technical dilemmas as well; pharmaceutical policy is never easy - every change in policy is countered by adaptive behavior of market participants.

Potential short term priorities for addressing the issues mentioned above could be:

- Clarifying the criteria for inclusion of drugs in the reimbursement list, leading to a more rational approach to reimbursement (see Annex 1)
- Modifying pricing and reimbursement rules so that rebates currently offered by manufacturers to wholesalers and pharmacies are captured by CNAS, price setting for patented drugs becomes simpler and more transparent and costs for expensive drugs can be better contained through volume controls (Annex 2). In addition, it would be possible to realize immediate savings from following the example of other countries and introducing therapeutic groups under one reimbursement ceiling, for example for all proton-pump-inhibitors or all statins.
- Introducing a flat dispensing charge high enough to discourage over-consumption, but low enough to not create a barrier for poor people (may need to be combined with a small increase in social benefits for the poorest or a voucher system for chronically ill. Alternatively one could test a system in which the pharmacist has the right to waive the flat charge for 10% of their transactions; pharmacists usually can identify poor individuals relatively well.)

- Establishing an informal coordination group with monthly meetings of technical experts from MOPH and CNAS, to exchange perspectives and discuss day-to-day management issues. CNAS should seek more engagement in discussions on pricing and reimbursement, as these decisions have immediate impact on the CNAS drug budget.
- Upgrading the CNAS information system so that prescribing behavior of doctors can be monitored “in real time” and parameters for rational prescribing can be established and possibly linked to financial incentives (Annex 3)
- Tackling prescription fraud by better monitoring of physician-pharmacy interaction (with a software that flags certain suspicious patterns) and controls of pharmacy inventories or controls on patient level whether prescribed drugs were actually dispensed (Annex 3).

In the longer term, it would be useful if major stakeholders could agree on some basic guidelines for drug policy, such as for example:

- The entire population has access to good quality essential drugs
- Within economic limits, people with serious diseases can also access more expensive treatments through public funding - if they are proven to be effective
- Technical and professional oversight of the sector is in the hands of competent experts, transparent for civil society, and protected against political and commercial pressures
- Effective controls and prosecution are discouraging illegal commercial activities; the circulation of unsafe, illegal or fake drugs is minimized
- Public funds are used in a way that is guided by public health priorities and not by commercial interests; decisions that affect spending are made on the basis of neutral scientific evaluation and assessment of the financial impact
- Adequate purchasing practices ensure that prices for multi-source drugs are formed in a competitive market environment
- Utilization of drugs is monitored and instruments are in place to improve adherence to evidence-based drug therapy
- The general population is educated about their rights and informed about the basics of evidence based drug therapy

Such a list of core objectives allows developing a simple score that expresses how big the gap between status quo and the desired status is. Policies then can be drafted to close these gaps. In order to strengthen policy making and technical capacity, institutions need to be built up with more specific expertise. A priority should be to develop pharmaco-economic expertise, for example in an institute that is supporting MOPH and the secretariat of the Therapeutic Strategy Commission in preparing reviews of drugs submitted for inclusion into the reimbursement list. At the same time, clinical guidelines should be urgently developed, if necessary forcing national medical associations to agree to a common platform by setting a deadline after which automatically guidelines from another major country are implemented if they can't agree.

Documents used for the preparation of this report

1. IntelliNews Romania Pharmaceutical Report 2005, 2006, 2007
2. WPM Outlook – Pharmaceutical Market Romania, 2006
3. Various WHO mission reports
4. Translations of relevant Romanian laws and ordinances
5. EU Directive 89/105/EC
6. CNAS data, reports and presentations

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Annex 1: Options for improving transparency of the process for selecting drugs for the reimbursement list

EU regulations require (1) that a decision on reimbursement is made within 90 days and (2) that criteria are transparent. The decision making process has to define not only whether a drug is included on the list, but also

- What percentage of the price is reimbursed
- For which indications it is reimbursed and how use is controlled (for example by pre-approval through specialists)

There should also be room for negotiations with the manufacturer about potential price concessions in exchange for reimbursement or risk sharing agreements (for example in a form that the manufacturer agrees to provide drugs for free once a certain agreed sales volume has been reached). Such negotiations cannot be made by a large committee; they require a dedicated team of experts, normally under the leadership of a health insurance expert with medical and/or pharmacy background. The decision can be a temporary one; usually new drugs come with limited evidence of long term treatment outcomes and costs. Therefore it could make sense to review a drug again after a certain period of time and potentially change reimbursement status. An interesting approach is the one taken by Austria, which puts all new medicines into a temporary status for one or two years (description below from a WHO document):

“In 2003, negotiations were initiated by the BMGF (the Austrian ministry of health and family affairs) with various interest groups (pharmaceuticals industry, wholesalers, pharmacists and physicians) with the aim of agreeing on a new package of reforms in the medicines sector. The focus was on a structural reform of the pharmaceutical sector and cost-containment measures. The main result was the presentation towards the end of 2003 of a new reimbursement codex for the social insurance system to overcome structural defects in the distribution and market access of innovations and generic drugs. The new reimbursement codex is characterized by a box system.

The red box contains (for a limited period of time) all new medicines; the financial reference point is the average EU price, which cannot always be calculated immediately according to the criteria published by the BMGF. For the physicians prescribing them, these medicines are subject to a new form of medical approval (authorization by “head physicians”, see Section 4.3 on outpatient health care). Quantity controls refer to the medical requirements of patient groups, special indications and stages of illness as well as to the incidence and prevalence of the condition. The yellow box contains all medicines with an essential additional therapeutic benefit, which are available for

specific medical indications and thus for specific patient groups. Price-fixing mechanisms, such as quantity discounts and price grades, will be introduced. As in the case of the medicines in the red box, the products in the yellow box are subject to medical authorization and quantity controls by the social health insurance system. The light-yellow box contains medicines for specific uses, for groups of illnesses for example. These are not subject to approval by head physicians. The green box lists those medicines which can be freely prescribed by contracted physicians. The regulation of prices after the expiry of the patent on a pharmaceutical product stipulates that the price of the original product is then reduced by 30%, and the price of the first generic is 25% below the price of the original product. The second generic has to be reduced by 15% below the price of the original product; the third generic by 10%. There are no price regulations for further generics which enter the market. If there is no generic drug on the market, the HVSV can put the active substance of the product out to tender.

Medicines used for treatment in hospitals, as a prophylactic or contraceptive are not assigned to any of the boxes ("no box"); for these pharmaceuticals reimbursement is only offered in exceptional cases. The new reimbursement codex leads to a reduction in the price levels to the EU average for medicines which require the authorization of a "head physician" (red box). It also provides for a time-limited and transparent admission procedure of pharmaceuticals to the yellow and green boxes, and it ensures that patients are guaranteed a regular supply of important therapeutic innovations (yellow box). The reduction of prices after the expiry of patents has the effect of opening up the market for generics. This is designed to increase prescribing of these products from currently fewer than 10% to over 20%.

(source: http://www.euro.who.int/pharmaceuticals/Topics/Overview/20020430_9)

In order to support decision making on inclusion into reimbursement lists, several countries have established specialized institutes for pharmaco-economic assessment of new drugs. Romania does not yet have such an institute and will not have resources for a while to establish one. However, what should be possible is to establish a small scientific office (either at the MOPH, at CNAS or, in order to reduce dependence from political influences and enable more competitive contractual terms, at an academic institution). This office would be staffed with pharmacists, medical doctors and health economists, whose task is to review files submitted by industry for reimbursement and collect information from international sources. This information should be structured in a standardized format, ideally as a scorecard that allows prioritization of certain drugs.

An important criterion for the Romanian decision could be whether a drug has been accepted for reimbursement in other European countries, and to what extent it is reimbursed. For example, one could select five countries that are using some sort of pharmaco-economic assessment as a means to decide on reimbursement, and give two points for each of them that provides highest national reimbursement level, one point of

each that provides some form of limited reimbursement, and zero points for those that do not reimburse a drug. This assessment may have to be made for each indication separately if a drug has multiple indications.

The scorecard can then be completed with some parameters that can be assessed by consensus specifically for Romania, such as:

- The disease has a high importance for public health in Romania
- The new treatment is not more expensive than current standard treatments in Romania
- The new treatment has clear clinical advantages over older treatments in a way that patient's wellbeing, functioning or life expectancy are improved in a significant and relevant way
- It is possible to deliver the new treatment according to good practice in the Romanian health system (diagnostic tools available, control instruments available etc.)
- Out-of-label use can be contained easily

For each of these parameters, a clear positive answer yields two points, a negative answer no points, and an intermediary answer one point.

This scorecard is applied by the above mentioned small professional expert team, which has to be shielded from industry influence beyond the official submission. It is important to have a dedicated team of people do the assessment in order to get consistency of the assessment quality. The experts can consult with clinicians and public officials to come up with their best personal assessment of a fair answer. They develop the scorecards for each product and provide the file with the scorecard and background summary documents to the commission in charge of putting the list together.

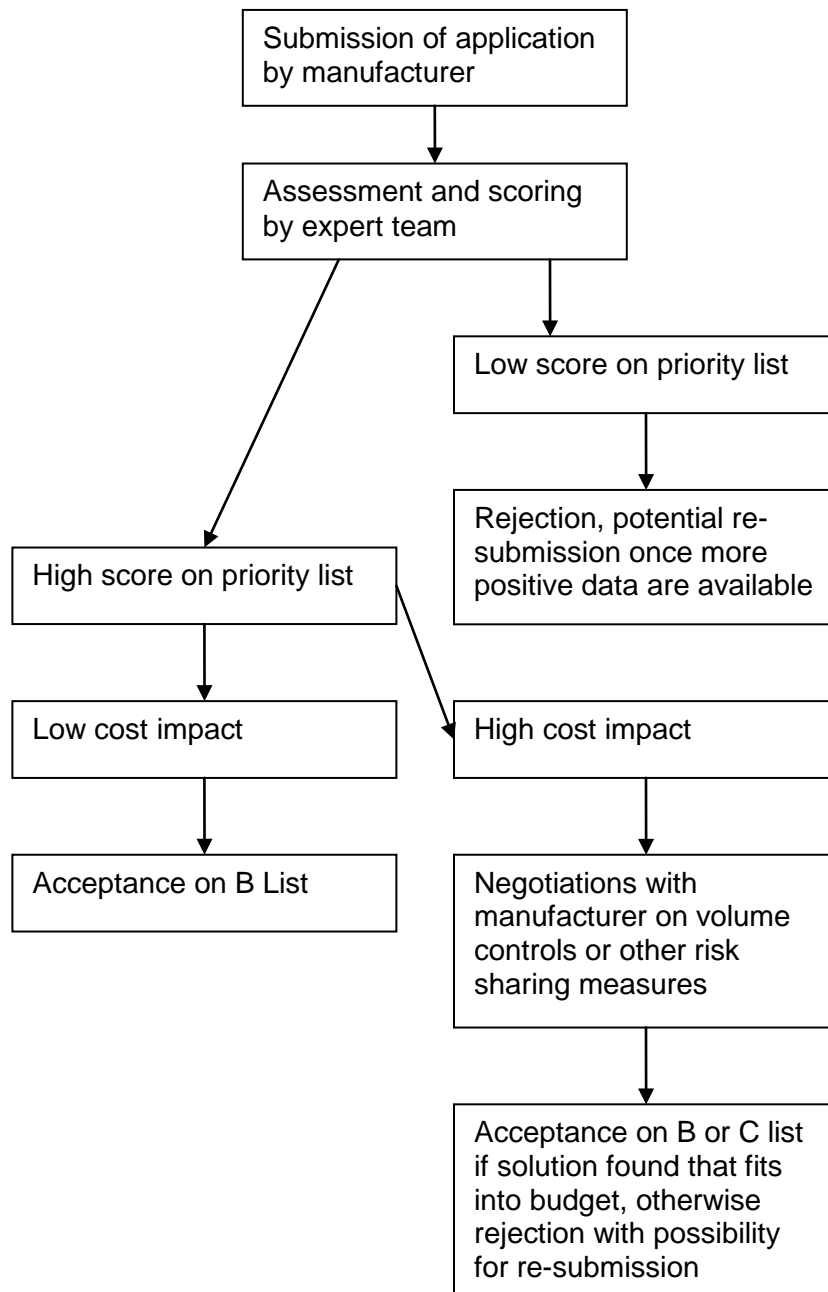
A typical scorecard could look like this:

Assessment of bifanulepil for the treatment of acute ischemic stroke within the first 60 minutes		
•	<i>(Description of the drug, mechanism of action, claims by manufacturer, comparable treatments if any, price per treatment in comparison with current treatment if available)</i>	
•	<i>(Documents used for the neutral assessment)</i>	
•	Decisions by other European authorities:	
○	Netherlands: no reimbursement	Score 0
○	UK: restricted reimbursement, pre-approval	1
○	Sweden: restricted reimbursement, pre-approval	1
○	Portugal: restricted reimbursement, only 5 hospitals	1
○	France: unrestricted reimbursement	2
•	Additional parameters:	
○	Public health priority: medium	1
○	Cost compared to current treatment: much higher	0
○	Clear clinical advantage for patient: yes in 10-20% of cases	1
○	Delivery of treatment possible in Romania: yes	2
○	Containment of out-of-label use: medium difficult*	1
Total score:		10 out of 20
(* 60 minute limit for application would be hard to control)		

If this scoring is done for each drug, all drugs can be listed in sequence of their scores, which would define an order of priority for consideration. Additional information needed to make a final decision is:

- Total cost impact on the CNAS budget
- Possibility to negotiate specific conditions with the manufacturer, such as
 - a volume cap above which additional treatments would be provided for free (see Annex 2 for more details)
 - an agreement to pay only for defined clinical outcomes
 - any other package that limits the budget risk for CNAS

The process to reach a final decision could be organized as shown below:



To develop such a system, it is recommended to recruit an external expert who can work with Romanian counterparts with hands-on experience in the process for a few weeks. Then the approach should be tested for a while before it is adopted in the by-laws.

Annex 2: Options for modifications of the pricing and reimbursement systems in Romania ..

..that would (1) increase competition in the generics market, (2) make pricing for patented drugs more transparent and (3) limit financial risks associated with introduction of expensive new drugs

Increasing competition in the generics market

Fixed reimbursement ceilings for generic drugs on the A List reduce price competition, in particular if patients are not well informed and pharmacists have an incentive to recommend more expensive branded generics because they are more profitable. In the Romanian market, manufacturers use volume bonuses to distributors in order to push their branded generics and “crowd out” competition. A distributor might for example get 30 packs of a certain products for free if he buys 100. He uses these free drugs to reduce the price to pharmacists or offer pharmacists 15 free packs for each 100 they buy. The pharmacist then recommends this brand to patients as one of particular quality. Health insurance pays only up to the reimbursement ceiling – in this case there is no immediate damage for the insurance. However, the patient has a higher co-payment than if the pharmacist would have correctly recommended the lowest cost generic and both wholesaler and pharmacist have extra profit.

Such a system does not encourage manufacturers to lower their list prices. Lowering official prices would lead to a reduced reimbursement ceiling once the currently lowest price in the market is undercut. Manufacturers therefore are better off with the bonus system, which maintains the reimbursement level and ensures increased volume.

It is in the interest of health insurance and patients to benefit from increasing economic efficiencies in drug manufacturing and decreasing international price levels for generics and not leave these benefits to distributors. One way to claim such efficiency gains is to create a clear market advantage for the manufacturer that offers the lowest price. Similar to a tender based procurement, in such a system the position of “preferred generic” is offered and awarded to the lowest bidder. This position is associated with a higher reimbursement rate than for all other equivalent brands of the same generic.

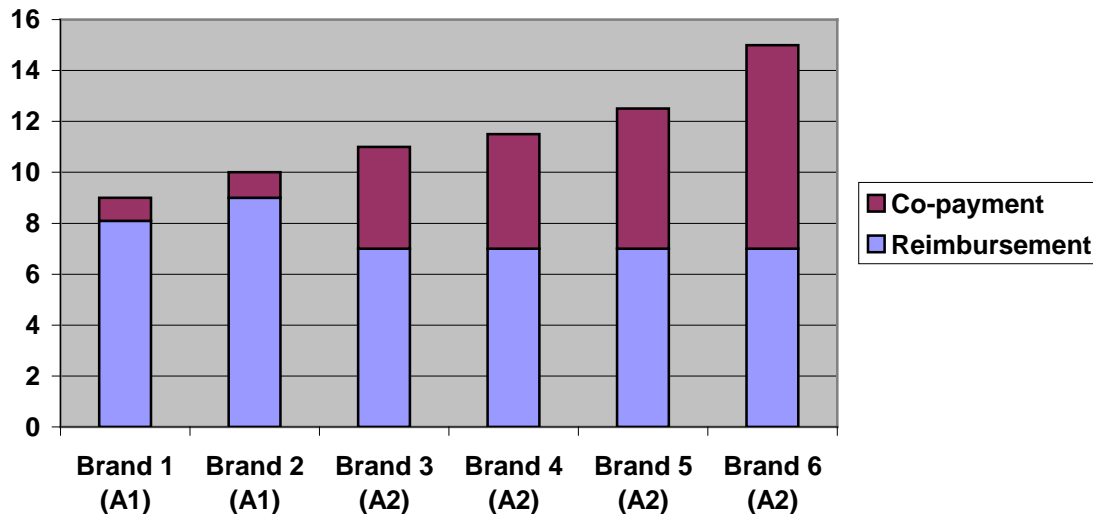
Example based on the Romanian system:

The current A List is split into an A1 and an A2 list. All existing A list drugs go automatically on the A2 list but will in the future only be reimbursed with 70 or 80% of the reimbursement ceiling defined by the lowest cost brand.

On the A1 list, drugs will be listed **with a specific brand name**; for each generic on the A2 list, only one brand (except if the lowest cost brand cannot provide enough volume) can be listed on the A1 list. All brands on the A1 list are reimbursed with 90% (or 100% if a flat dispensing charge is introduced). Manufacturers are invited to bid for the slots on the A1 list. Bids are processed in a transparent way, ideally as an electronic reverse auction (bidder see the current lowest bid and can enter a lower bid until the auction is closed, but they don't see who the other bidders are). Bidders have to submit data on their production capacity in order to be allowed to participate in the auction. Every year, tenders are opened again, so that a manufacturer who was not able to win has another chance. Organized in this way, the approach is not anti-competitive.

It is conceivable to start such a project with only 10 or 20 high volume drugs from the current A list as a test. It might be necessary to include more than one brand in the A1 list if the winner does not have enough capacity to supply the entire market. In this case, one would pick the second lowest bidder in addition to the first one and so on, until enough brands are listed on the A1 list to ensure 100% supply. The price that has been found through this process becomes automatically the basis for the new reimbursement ceiling for all brands of this generic, including those on the new A2 list. If more than one brand is included on the A1 list for volume reasons, the highest price on the A1 list becomes the basis for the reimbursement ceiling for A2.

The chart shows an example in which it is assumed that the volumes of Brand 1 and 2 together were needed to satisfy the entire forecasted market. These two brands get 90% reimbursement of their price that was defined in an auction. All other brands get 70% reimbursement of the price of Brand 2.



In this model, there is a clear financial benefit for patients to obtain the cheaper brand(s). Co-payments go up steeply if they decide against one of the preferred A1-Brands. Manufacturers of Brand A and B will automatically get high market shares and have no more incentive to give volume bonuses to wholesalers. Manufacturers 3-6 will consider coming in with lower bids at the next auction, until the price optimum is reached. Once such a system works, there is no more need for any price regulation for generic drugs.

Setting up a transparent and low-maintenance reference pricing system for patented drugs

Currently, prices for patented, single source drugs (which are imported into Romania by multinational companies) are defined according to a reference system that leaves flexibility in terms of the countries selected and stipulates that “usually” the lowest price found in these reference countries is relevant for setting the Romanian price. The small team of experts in the MOPH maintains its own database, which is updated regularly. If this system is found acceptable by all stakeholders, in line with EU Directives and manageable by the MOPH, then there is no need to change it. If, however, there are frequent disagreements about the methodology and the quality of the data, it may be

worth considering alternative options. One option would be to use a standard set of price data from an independent provider, who uses a defined methodology to obtain price information with adjustments for national particularities. One such provider, who uses data from government sources (there are others that use industry data) is the Austrian Health Institute OEBIG (www.oebig.at). It is possible to define a basket of reference countries (for example Hungary, Bulgaria, Greece, Spain, Austria and Lithuania) and get the prices of a new drug for all these countries from OEBIG's database. This is not free, but the costs could be paid by the manufacturers in exchange for a fast and transparent decision. Based on the comparative data, one could either pick the lowest price or the average, or for example the average minus 10%, the second lowest price etc. There is room for discussion with industry, whether companies are willing to offer risk sharing deals in which they provide certain drugs for free once a volume or budget ceiling is reached for a fiscal year, in exchange for having a formula that delivers a slightly higher official list price. Ideally, the pricing model should be so simple that the price can be calculated by a machine once the data are entered.

Volume controls and sharing of budget risks with industry

New drugs are usually introduced with limited indications. Once reimbursed, companies have all reasons to push the indication limits and try to increase patient numbers beyond the original forecast that was used to assess financial impact. In order to limit such behavior, several countries are experimenting with various forms of risk sharing deals. Depending on the characteristics of a drug, the delivery system and the payment system, such deals can have different formats. In Romania, certain expensive drugs are delivered through national programs. Some of these programs have a specific cap that limits the number of treatments. If a drug is given first in a hospital, that receives it within the cap, the patient might end up paying for it out-of-pocket once he/she is released. Alternatively, patients have to travel to hospitals that may be able to provide follow-up treatment – not a convenient and cost-efficient option. In such cases, companies could be asked to provide the drugs for initiating treatment to hospitals for free or at a discount, while the budget cap is used to cover outpatient treatment for patients whose treatment has been initiated in hospitals but who live too far away to continue being treated there on an outpatient basis.

In other cases treatments are initiated already in the outpatient sector. Before agreeing to include a drug on the reimbursement list, a budget ceiling could be agreed with the

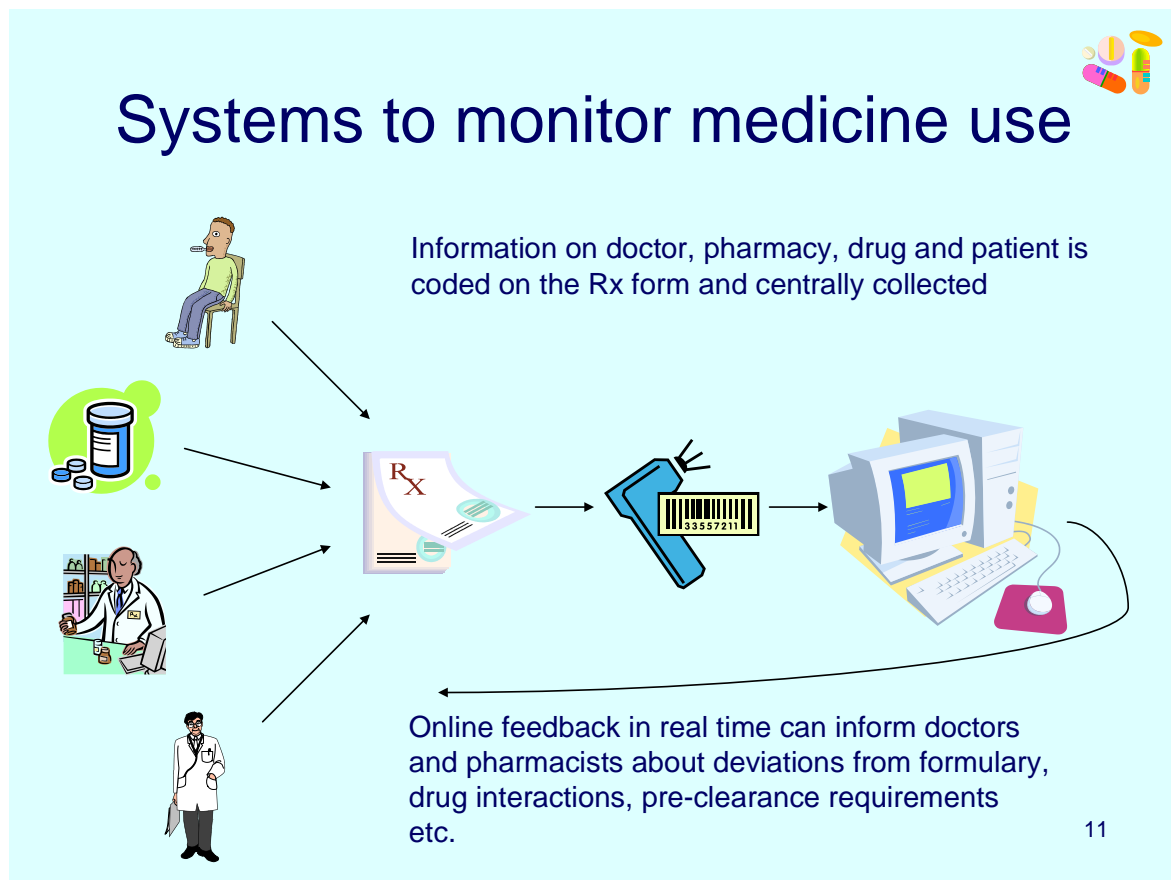
manufacturer on the basis of the available funds and the likely need – manufacturers have data on disease incidence and numbers of actual patients even if the public sector does not have this information. If the agreed budget ceiling is reached, the manufacturer would be contractually obliged to keep providing the drug for free.

A third option exists for rare diseases with specific disease progress parameters that are measured routinely to monitor patients. In this case, the manufacturer of a new, expensive product that promises to modify the disease could be asked to provide disease progress data for each patient and could be paid for success only. Patients that do not respond are treated at the manufacturer's expense. There is no need to establish causality – even if the reason for failure is non-compliance the manufacturer has the risk. Modifications of this model would be a cost split, for example a payment of 50% of the drug price only, the rest being paid once treatment success has been proven. Such a model would create a strong incentive to avoid out-of-label use, or use of expensive treatments with fairly low or inconsistent treatment effects.

Annex 3: Developing a system for monitoring of drug prescribing and dispensing and linking it with incentives for rational use of drugs.

The current system in Romania enables CNAS to compile data on drug expenditure, but it requires manual work in order to match expenditure with specific data on prescribing practice of a selected physician or group of physicians. Therefore there is no simple way to create an overview of prescribing practices of physicians or to search for patterns of physician/pharmacist interaction that suggest abuse of the system or deliberate fraud.

Several countries have introduced systems that collect prescription data at the pharmacy level with a direct link to a central server at the insurance fund. The graphic below illustrates how such systems work. Usually data are entered in the form of bar codes, which facilitates data entry and avoids mistakes.



The system in this example collects four data sets: unique identifiers for patient, prescribed drug, pharmacist and prescribing physician. If necessary, a dataset for the institution (hospital, clinic) can be added. The software can be set up in an interactive way that supports pharmacists in their work. For example, if a patient comes with a prescription for penicillin, the system can warn about an existing penicillin allergy. Other deviations from indications, guidelines or good practice could be flagged as well, such as:

- Patients getting a second prescription for the same or a similar drug although they should still have sufficient supplies according to previously dispensed amounts
- Children coming with prescriptions of drugs that are only indicated for adults
- Prescriptions for diseases that do not match the gender of the patient
- Prescriptions of drugs that can lead to interactions

Centrally the system can be used to look for patterns of abuse, for example if certain doctors prescribe expensive drugs and it is always the same pharmacist who dispenses these drugs. Spot checks at the pharmacy and with patients (whether they actually received these drugs) can be made in a targeted way. Technically, a link with a pharmacy inventory management system would be possible. In the general retail sector (food, consumer goods), such systems are routinely used to automatically organize re-supply. It is likely that pharmacy chains are already using such system or will introduce them in the near future. If such a link is established, fraud can be detected easily if physical inventories do not match inventory in the books.

As doctors' prescribing behavior becomes transparent, it is possible to identify doctors that generate high treatment costs per patient and offer them special counseling on rational and evidence based use of drugs - a measure that has proven useful in other countries. Feedback can be provided that allows doctors to see where they stand in general and in terms of prescription costs for selected indications. As a next step, the system can be used to establish individual goals for more rational use of drugs. Savings from increased efficiency could be paid back to doctors in forms of bonuses, or bonuses could be paid from a general increase in budget allocation (there might be political and economic reasons to raise fees in the future, given the low physician income in Romania). As an example, CNAS could focus on treatment of hypertension and

establish a rule, that in general practice 90% of patients should be treated with first and second line generic antihypertensives, while 10 % can receive more expensive, branded drugs such as the “sartans”. Depending on their current usage, contract physicians are offered a defined bonus if they move their prescribing behavior closer to this ratio.

Example: A physician who currently prescribes 50% expensive drugs may have to reduce to 30% within a year. Another physician who currently only has 20% of patients on these drugs has to reduce only to 10% within the same timeframe. Similar objectives can be set for other drug classes, for example antibiotics (which are typically over-prescribed) or for the use of injections. Once there is more experience with the system, scores can be developed that cover a wider set of parameters, improving the management of prescribing physician behavior in a way that moves reality closer to the ideal of cost-effective, evidence based use of medicines.