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Good Practices in Social Security

Good practice in operation since: 2017

Application of actuarial technology in the negotiation of National Medical Insurance Drug List

Certificate of Merit with Special Mention, ISSA Good Practice Award – Asia and the Pacific competition 2018

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Summary

In order to reduce the personal burden of medical expenses and improve the Chinese patients' sense of acquisition, happiness and security, the Ministry of Human Resources and Social Security (MoHRSS) organized in 2017 the negotiation of the National Medical Insurance Drug List (NMIDL). For the first time, 44 proprietary drugs with definite curative effect, clinical necessity, safety and reliability but with high prices as determined by experts' review were negotiated for admission into the medical insurance payment standards, of which 36 medicines were successfully admitted into Category B.

The major objectives of this programme are to significantly improve the security of medical insurance medication usage, greatly reduce patients' personal burden, effectively control the fund expenditure, strongly support the medicine innovation, and achieve win-win results for multi-parties.

In realizing the above-mentioned objectives, the negotiation has achieved great results by applying actuarial technology to analyse the medical insurance big data, evaluating the supporting capacity of medical insurance fund, and scientifically calculating the standard of medical insurance payment. The average price reduction of 36 admitted drugs was 44 per cent, with a maximum reduction of 70 per cent, giving full play to the group purchasing capacity of basic medical insurance.

The issue or challenge

What was the issue or challenge addressed by your good practice? Please provide a short description.

Based on the national medical insurance market, the negotiation of medical insurance drug list is a process of determining the appropriate medical insurance payment standard and incorporating drugs into the medical insurance reimbursement list through negotiation with pharmaceutical enterprises. The key to a successful negotiation lies in the "bottom line", or the "expected price" of both sides. The prerequisite for the success of negotiations comes down to making reasonable decisions on the expected price.

Addressing the challenge

What were the main objectives of the plan or strategy to resolve the issue or challenge? List and briefly describe the main elements of the plan or strategy, focusing especially on their innovative feature(s) and expected or intended effects.

The major objectives of this programme are to significantly improve the security of medical insurance medication usage, greatly reduce patients' personal burden, effectively control the fund expenditure, strongly support the medicine innovation, and achieve win-win results for multi-parties. The main elements include:

- Specifying the objectives and schemes of medical insurance big data analysis:

  We organized discussions among experts from all relevant aspects, such as national medical insurance, medicine, pharmacy and data analysis, and we drew from the

experience of local practices on negotiation. We made it clear that the very essence of drug list negotiation is about price, with the core of trading at lower prices for larger sales volume. We scientifically measured the number of medicine users, the amount of drugs applied, the increased burden on the fund and the reasonable price range of the relevant negotiated drugs. On such basis, we formulated the work plan for evaluating the capacity of the medical insurance fund.

- Classification of the negotiated drugs:

  The negotiated drugs are divided into the following three groups, with the calculation methods and rationale determined respectively:

  - For drugs with definite indications and large numbers of users, data such as fund burden are calculated by the actual number of medicine users and actual dosage.
  - For drugs that cure rare diseases with limited user population, sufficient data of drug usage may not be possible to acquire for the calculation. In this case, epidemiological data can replace the actual number of drug usage for calculation.
  - For drugs with a wide range of indications, such as Chinese patent drugs and traditional Chinese medicine injections, relevant data can be calculated with the usage statistics of their substitutions.

- Database for medical insurance data analysis:

  First of all, we evaluated the medical insurance fund expenditure increase and the market expansion, then we determined the comprehensive factors influencing the drug price and weighted them through medical insurance big data analysis before we proposed the price cuts. Based on the comprehensive consideration of pooling region distribution, management, fund status, drug access to the 2010 edition drug list and data quality, we extracted and verified 3.09 million data from 68 pooling regions, including cost, disease distribution, clinical usage, revenue, expenditure and balance of pooling regions, etc., before we established the medical insurance analysis data base.

- Application of actuarial technology in estimating supporting capacity of fund:

  - We standardized the data in the medical insurance analysis data base and unified the data among all pooling regions. Such standardization and unification have been promoted nationwide.
  - We completed the measurement and calculation by developing corresponding programmes and establishing actuarial data models.
  - We conducted overall evaluation of the medical insurance fund supporting capacity regarding the negotiated drugs by measuring key factors, such as the number of medicine users, annual dosage as well as revenue, expenditure and balance of fund.
  - We formulated the price range of drugs in accordance with the calculation results of different levels of fund supporting capacity.

- Proposing the expected price range:

  According to the measurement and analysis results of medical insurance big data, we determined the price range, clearly pointing out the upper limit price, lower limit price and median price within the range.

Targets to be achieved

What were the quantitative and/or qualitative targets or key performance indicators that were set for the plan or strategy? Please describe briefly.

Through negotiation, we aimed to incorporate the clinically necessary yet expensive proprietary medicines into the medical insurance reimbursement catalogue, and to reasonably determine the payment standard.

Evaluating the results

Has there been an evaluation of the good practice? Please provide data on the impact and outcomes of the good practice by comparing targets vs actual performance, before-and-after indicators, and/or other types of statistics or measurements.

On 19 July 2017, the MoHRSS released on its official website the notice of incorporating 36 drugs into the Drug List Category B of the national basic medical insurance, work injury insurance and maternity insurance, requiring provinces (autonomous regions and municipalities) to conscientiously implement the notice. The *Financial Times*, *People's Daily Online*, *Xinhuanet*, *Reference News*, *CCTV Network*, *Baidu*, *Sina*, *NetEase*, *Sohu* and other domestic and foreign media reported and praised this drug list negotiation and its results.

By the end of 2017, 31 provinces, autonomous regions, municipalities and Xinjiang Production and Construction Corps had fully implemented the above-mentioned notice, and 36 newly incorporated drugs saved 4.025 billion Chinese Yuans (CNY) in total in the fourth quarter of 2017 and significantly improved the medical insurance medication usage security, thereby greatly reducing burdens of the whole society, effectively controlling the fund expenditure and enhancing the sense of satisfaction of the insured. At the same time, the negotiation also helped to provide guidance for rational medical behaviours and to promote development and innovation in the medical and pharmaceutical industry.

Lessons learned

Based on the organization's experience, name up to three factors which you consider as indispensable to replicate this good practice. Name up to three risks that arose/could arise in implementing this good practice. Please explain these factors and/or risks briefly.

The three contributory factors are as follows:

- The first application of the big data analysis of medical insurance in the negotiation of the medical insurance drug list has strongly supported the political decisions.
- Social insurance administrations should make use of the actuarial technology and methods of medical insurance, and give a full role to actuarial technology in the negotiations of the medical insurance drug list.

- Social insurance administrations should mobilize the local medical insurance authorities to be involved in the negotiation of the national medical insurance drug list.

Other social security agencies may draw some inspiration from this experience of China:

- The patent drugs which are necessary for clinical and expensive can be included into the medical insurance drug list through negotiation. This will not only significantly improve the level of health insurance security, but also greatly reduce the burden of the patients and effectively control the fund spending.
- The actuarial technology applied in the negotiation of medical insurance drug list will have a positive effect on the medical insurance fund of both residents and employees.