Input and output effects on the health of the Australian opioid-dependent population

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The inputs to a health system directly relate to the outputs of the system. The methadone programme in Australia relies heavily on input factors such as finances, policies, people and physical structures to positively impact on its output with regard to the health of the opioid-dependent population. Policy-makers need to review these outputs and make effective changes to address the objectives of the health system.

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There is an increasing use of heroin seen within the Australian population, especially among young adults.[1] Opioid dependence is well recognised as a serious public health issue, not only in Australia, but worldwide.[2] A common way to determine the health of this population is through data collection and statistical analysis, primarily derived from ongoing auditing and reporting by relevant governing bodies, including the National Drug and Alcohol Research Centre, National Opioid Pharmacotherapy Statistics Annual Data and the Australian Institute of Health and Welfare.

Methadone as a treatment option for opioid dependency was first reported in 1969, and is now formally recognised as an effective method of treatment worldwide.[3] The Australian methadone programme (MP) is readily available nationwide, primarily serviced in a community pharmacy setting. Methadone as an opioid-substitute option has been effective for over 40 years.[4] However, the provision of methadone to patients has changed significantly over this period. It is important to highlight the fact that methadone is not a cure for heroin addiction, but rather it allows patients to maintain a more functional life and to operate civilly within the community, and tends to alleviate severe withdrawal symptoms.

There are two streams associated with the MP: withdrawal (or short term) and maintenance (or long term). This report will only refer to the most common type: the maintenance programme, which can last anywhere from months to many years. The primary goal of offering this programme is to reduce the harm associated with drug use, and to optimise overall quality of life for this population cohort. Currently, it is estimated that over 60 000 patients are enrolled in the programme nationwide, an under-representation of the total opioid-dependent population in Australia.[4]

To effectively address this issue, governing bodies reviewed appropriate health measures, by accessing inputs and reviewing outputs of this system. Inputs involve resources in the form of general practitioners/pharmacists, addiction specialists, psychosocial experts, administrative staff, methadone supply, community pharmacies and funding for the programme. Raw materials used in the programme include cost, policy provision, staff, dose administration facilities and time.[5]

Outputs are the results obtained after implementing these services.[5] These include the outcomes of the system's activity that are returned to the environment. In this case, these would include improved quality of life for patients, reduced hospital burden associated with addiction presentations and improved measurable statistical data comparisons; secondary outcomes may include less crime.[6]

This report will focus on the effects of the MP among the opioid-dependent population on the national health system.

Discussion

Inputs

Inputs can be financial, or physical structures such as community pharmacies, personnel and patients. Resources tend to produce products and services, and are extracted from external sources. Health policy, cost, workforce, facilities and time are considered raw materials used to assist the operational management of the programme.[6]

Finances. Finances are a crucial element in public health, as they drive the system toward the goals set out in the policies.[6] Australia tends to finance its healthcare system through three main sources: government avenues (state or commonwealth), public donations/fund-raising and private contributions.

An analysis of the respective contributions by the commonwealth and state governments for the provision of methadone services estimated a total cost of approximately AUD15.25 million in 2012.[1] This expenditure by the states may have also included funds provided by the commonwealth under National Drug Strategy (NDS) funding (AUD4.9 million).[1] Without this commitment, this programme would be destined to fail. This highlights the importance of financial input for the success of health systems.

The MP must be able to manage its own revenue to make sure its objectives are met relative to the growing health needs of the population. The difficulty is seen in the misconceptions about this specific health population. There is stigma associated with drug addiction, with addicts often mislabelled as an inferior group of people in society. People are significantly likely to have negative attitudes toward those suffering from drug addiction. The public may perceive this group as undeserving of funding.[7] The MP programme, therefore, tends to face particular challenges that are perhaps less predominant for other programmes.

Governments obtain a significant portion of the health budget from tax revenue.[8] A health system that faces ongoing financial constraints must explore other options to generate finances; one option is seen with the implementation of cost-sharing/user fees. In the current MP, patients are expected to part-pay for a dosing cost. This is an attempt to raise revenue, and aid in reducing the financial burden of the programme.

Healthcare services cost money, and without adequate funding the entire health system is compromised. The consequences of underfunding the MP may be increased criminal activity (to maintain addiction habits), an increased burden on mental health services and potential overdoses and deaths.

Policies. Healthcare policies pave the way for healthcare practices. A National Methadone Policy was first adopted in 1993, which reported the country's position on the role of methadone, and was promoted to incorporate core operational procedures as a guide to the provision of services.[8] Unfortunately, despite this perceived national understanding, there has been a significant divergence between judiciary systems and service provision among states.

The Australian government currently funds the provision of methadone through pharmaceutical benefits arrangements. State governments manage these programmes, which are run through approved dosing point sites, primarily at community pharmacies, and at a few specialised clinics. The national pharmacotherapy policy for people dependent on opioids was released in January 2007 by the Australian Government Department of Health and Ageing.[8] Each state and territory has specific jurisdictional guidelines and policies for people dependent on opioids.

Policies set the stage for quality care and delivery of appropriate services. For programmes to succeed, investment in strategic management planning processes must be incorporated as part of policy development. Policy-makers need to review the strategic management model of strategic thinking, strategic planning and managing strategic momentum[5] to develop targeted policies, where appropriate.

Infrastructure. Providing a healthcare service needs to include providing accessible facilities to the health population. The MP has been delivered in Australian community pharmacies since 1985.[1] There are over 5 500 community pharmacies throughout Australia, in both rural and metropolitan areas. The effectiveness of pharmacy-based dosing sites is evident, and the demand is increasing.[8] Community pharmacies are given the option of providing this service, and the participation rate of community pharmacies is low, with over 60% of pharmacies electing not to provide this service to patients. The inadequate number of facilities available to meet the needs of the population has led to the development of substitution clinics throughout Australia. These clinics are generally met with protest from their surrounding neighbours. Residents in these areas tend to fear that these clinics attract the wrong kind of people, and worry for the safety of their families.

It has been reported that a revealing number of barriers affect the uptake and success of the provision of methadone in community pharmacies. These barriers include an increased number of product thefts, insufficient cost reimbursement associated with the programme and staff safety concerns.[9] These factors also have profound ethical implications for pharmacy practice. These findings may help to inform future policies aimed at encouraging pharmacists to provide this service, and to address the unmet needs of the ever-increasing number of opioid-dependent clients in the community.

Workforce. For the system to function successfully, a focus on appropriately trained staff should be a primary objective. When discussing this input to the MP, there are three key stakeholder groups that form the central spine of staff involvement: prescribers, addiction specialists and pharmacists. An increasing number of prescribers is predicted to be necessary to meet the demands of the programme in future. Appropriate training for these prescribers is essential, to ensure quality services and uncompromised healthcare to this population cohort.

Opioid dependence requires a multidisciplinary approach to treatment. The simplification of only providing methadone to these patients will be met with continual relapse and failure, if other issues such as mental health and social behaviours are not addressed. The involvement of other healthcare professionals, including assistance from addiction specialists, psychosocial experts and psychiatrists should also be provided, where possible.

Outputs

Outputs are the results obtained after running an entire process, or merely a small part of a process. These include the by-products of the system's activity that are returned to the environment – the goods or services that a system produces.

States and territories use pharmacotherapy data to monitor the resources required for pharmacotherapy treatment, such as the number of prescribers and dosing point sites, and to plan services, and also to monitor prescriber patterns, and cap the number of clients. These reports also assist in the development and refining of policies relating to the treatment of clients with opioid dependency.

There have been many positive outputs associated with the implementation of the MP in Australia. Patients report feeling more stable, are less focused on the addictive behaviour associated with heroin use, admit that the costs are much lower than supporting a heroin habit and acknowledge the risk reduction for HIV/AIDS and hepatitis B/C due to intravenous drug administration.[10]

Hospital emergency departments have reported a decrease in heroin-dependence-associated presentations since the implementation of the programme,[10] which is an important medical and health-system cost outcome.

Conclusion

The inputs to a health system directly relate to the outputs of the system. If resources are not adequately allocated, the system is destined to fail, which will only be detrimental to the people in the health population it is structured to service. Policy-makers need to review these outputs and make effective changes to address the objectives of the health system.

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