TRANSFORMING THE MODEL OF CARE FOR TREATING TUBERCULOSIS IN THE REPUBLIC OF ARMENIA

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Summary: Reforms to treat tuberculosis (TB) patients undertaken in Armenia have actively moved away from traditional modalities of service delivery, and are rather based on modern service delivery models informed by evidence-based guidelines, with clearly developed pathways, more appropriate use of resources (human and physical), and revised roles for hospitals. In the context of limited public resources, measures were introduced to change the model of care to deal with the growing burden of multidrug-resistant and extensively drug-resistant forms of TB. These measures included changing the hospitalization and discharge criteria for TB patients and reorganizing TB services while aligning provider payment mechanisms.

Keywords: Tuberculosis, Health Services Delivery, Health Financing, Armenia

Introduction

Although ongoing reforms have resulted in large reductions in tuberculosis (TB), morbidity and mortality rates over the past years’ TB remains a major public health threat in Armenia. The TB incidence rate (including HIV+TB) per 100 000 population in 2014 was 45.8 compared to 62.4 in 2005. TB services, including outpatient and hospital services for the entire population, are fully covered by the Basic Benefits Package (BBP), which is funded from the public budget. However, the rise in the number of multidrug-resistant and extensively drug-resistant forms (M/XDR) forms of TB poses serious public health and social challenges for the country.

* TB morbidity was 34.7 per 100 000 inhabitants in 2014, compared with 62.4 in 2005. The TB mortality rate for the same period was reduced from 5.2 to 1.6 (1).
Prior to the 2013 TB infrastructure optimization reform described here, there were 72 outpatient and 9 inpatient TB care facilities in Armenia, of which 21 outpatient and 2 inpatient facilities were located in the capital city Yerevan. More than 65% of TB patients in Armenia were diagnosed at inpatient TB care facilities, where around 95% of all TB patients received their intensive course of treatment. In 2013, 82% of public funding was allocated for hospital facilities and the remaining 18% for outpatient services.

An evaluation of the ongoing TB reforms, conducted by a team of WHO experts in 2014, identified both achievements and existing shortcomings, such as the need to emphasize the role of intersectoral cooperation for successful implementation of health sector reforms, to adopt a strategy for the integration of vertical programmes (including TB) into primary health care, development of a unified health information system and reform of hospital infrastructure. More specific recommendations with regard to TB were to improve training of TB providers, to increase their awareness about performance-based incentives at the primary care level and to ensure more flexibility for the Ministry of Health in managing budget allocations by consolidating numerous budget programs. While some of those recommendations are not yet fully implemented and need further consideration by the Ministry of Health and other stakeholders, others were addressed with specific steps described below.

Transforming the TB model of care

Prior to 2014 most hospitalized TB patients did not meet the WHO criteria for hospitalization, undermining the potential role of outpatient facilities in diagnosing, treating and preventing TB. The reorganization that followed the 2013 reform included all aspects of TB services: human resource management; administrative procedures and financing mechanisms.

In 2014, new criteria for admission and discharge of patients with TB were implemented in line with the WHO recommendations. The introduction of specific hospitalization and discharge criteria directed clinicians to avoid hospitalization except for diagnostic purposes or smear negative TB patients.

To further increase the efficiency of the system, a recommendation was made by the Ministry of Health working group to close inpatient facilities that were serving only a limited number of patients annually and to revise the structure of outpatient TB facilities in Yerevan.

This resulted in the reduction of the number of outpatient TB facilities in Yerevan from 21 to 9 in 2014 (the number of facilities in the regions remained the same – 51), while their human resources and technical capabilities were further strengthened. With the support of the Project “Strengthening tuberculosis control in Armenia” (funded by a grant from the Global Fund), all TB providers in Yerevan (i.e., doctors, nurses, lab technicians) were involved in training opportunities. Premises providing TB services in two Yerevan polyclinics were also renovated. Three regional-level inpatient facilities were closed due to low workloads bringing the total number of inpatient TB facilities to six – two in Yerevan and four in the regions.

Alignment of financing mechanisms to transform TB care

It is important to mention that public funding for TB services (both outpatient and inpatient) was increased during the same period. In Armenia, the medical services covered by the BBP are funded from the public budget through the State Health Agency (SHA) of the Ministry of Health which acts as a single purchaser of services. Prior to the 2013 reform, payment mechanisms included “per capita” payments for outpatient and “fee per case” payments for hospital services. However, some types of inpatient services, including the treatment of TB patients prior to 2014, were reimbursed through a combination of fee per case and fee per bed/day mechanisms, such that hospitals would receive a fixed fee per case for each discharged patient for a pre-defined length of stay. If the actual length-of-stay was less than the normative number of days, then the reimbursement was calculated according to the actual number of bed/days multiplied by the fee per day.

During 2012–2013, the National Tuberculosis Control Office, in collaboration with SHA, conducted a comprehensive evaluation of TB service delivery and financing in the country. Based on the findings, recommendations were to modify the financing mechanism for outpatient services from being based purely on per capita calculations and to introduce financing mechanisms that were based on a combination of per capita and performance based payments. For inpatient services recommendations included shifting from the previously mentioned mix of fee per case and bed/day approach and introduce a combination of guaranteed funds for facility maintenance (fixed) costs plus remuneration for variable costs (drugs, other medicine and food). Measures aimed to implement financial incentives for health care providers to incentivize early interventions, successfully treat TB cases, reduce the number of unnecessary hospitalizations and average length of stay, and overall, promote higher productivity and cost effectiveness.

Armenia has had a performance-based financing (PBF) mechanism for primary care providers in place since 2010. In 2014, two additional indicators related to early detection of TB (one for adults and another for children) were added to the existing set of PBF indicators. New financing mechanisms for inpatient TB services were introduced in October, 2014. While 2014 was marked by a transitional period for the implementation of new financing mechanisms, 2015 saw the first full-scale post-reform reporting period. Further data comparisons will be drawn between 2013 (the baseline year)
and 2015. During the 2013–2015 period, total public funding for TB services increased by 16.6%. Table 1 shows that public funding for outpatient TB services increased by 28.6% while funding for inpatient TB services increased by 14.0%. This is also reflected in the increased outpatient/inpatient ratio of public funding (80% for inpatient services in 2015 and 20% for outpatient).

Table 1: Financing TB services in Armenia, 2013–2015

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2015</th>
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<tbody>
<tr>
<td></td>
<td>Number of cases</td>
<td>Number of bed/days</td>
</tr>
<tr>
<td>Hospital TB services</td>
<td>6 513</td>
<td>144 582</td>
</tr>
<tr>
<td>Outpatient TB services</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Total</td>
<td>1 520.1</td>
<td>1 772.6</td>
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Source: Database of State Health Agency, Ministry of Health, Armenia.
Notes: AMD – Armenian Dram; n.a. – data not available.

Preliminary findings

While assessing the impact of comprehensive reforms will require a longer term perspective than is currently available, initial achievements have been encouraging. Continuous annual monitoring and evaluation of the outcomes in order to identify necessary adjustments in a timely manner is ensured through a set of 33 indicators covering inputs, processes and outputs (some indicators also will be monitored on a quarterly basis). First assessment results are expected by May 2016 (after this article was sent to press). Overall, the success of the reform on TB care in Armenia seems to have hinged on the clarity of definitions for models of care and the alignment of the incentives and financing mechanisms to underpin those changes towards a more sustained transformation.

The total number of hospital TB cases dropped by 32.7% from 2013 to 2015 while the number of bed/days was reduced by 31.4%. These changes resulted in an increase in the average cost per discharged patient by 69.4%, while total funding of inpatient services increased only by 14% during the same period, as mentioned above. This, in turn, has led to improved quality of care and higher satisfaction of both providers and patients, since TB facilities received additional resources to invest in improvement of both service delivery and working conditions for their staff. At the National Anti-Tuberculosis Dispensary, which manages approximately 80% of all hospital cases, average monthly salaries increased by 20–25% in 2015 compared to 2013; this represents a 21.5% increase for doctor salaries, and a 26.7% increase for nurses salaries.

References

- WHO country data for Armenia: Tuberculosis profile. Available at: https://extranet.who.int/sree/Reports/Top-Repl?&name=%2FWHO_HQ_Reports%2F201%2FcountryProfile&ID=1502&AM%26LAN=EN%26outtype=html
- National Centre for Tuberculosis Control of Armenia. Internal data.