

B6: Framework for Calculating Shares Savings Between Health and Non-Health Agencies from Data Linkage for Population Targeting

- Who is this tool for? This document is intended as an implementation tool to support the development of a business case to link population targeting datasets between health and non-health agencies. It lists all of the potential domains to consider, and supports this with two case studies of real-world savings being achieved. It is design to accompany Question 1.6 in the Data Linkage Decision Checklist that forms part of [report link], focusing on whether there is an agreed business case to support the data linkage initiative.
- How was it produced? This framework was produced through an ‘crowdsourcing’ exercise by members of the JLN Learning Collaborative on Population Targeting. To support a problem solving workshop for one of the member countries, all participants were invited to contribute to a spreadsheet of ideas for potential savings that might occur through population targeting data linkage. Over 30 ideas were submitted during a 10 day period, which were then consolidated into the below framework, and refined through a group discussion at the workshop itself. The supporting case studies were drawn up by Valentina Barca, Subject Matter Expert for the Data Linkage sub-theme of this collaborative.

Fragmented data systems and inaccurate or inefficient population targeting systems are costly in the long run: both to the public purse and human lives. Fixing these problems in the short-run, however, can require investment, sometimes significant investments. These savings can appear in unexpected places however, and may not benefit the agencies who had to make the initial outlay.

For this reason, creating a business case to justify data linkage can be challenging, even if the required resources are relatively modest. To support this process, this document sets out a framework for health leaders to think through all of the potential routes by which savings might be achieved from linkage of health and non-health datasets for population targeting, as well as some case studies to show how these have been realised in practice.

Some initial caveats

Before describing the framework created by participants of the JLN Learning Collaborative on Population Targeting, it is important to understand some caveats surrounding its design and use:

1. While the below framework focuses on financial savings to public agencies, it is important to remember that the primary purpose of data linkage for population targeting among health leaders is not to reduce health spending or health coverage, but to maximize health improvement and poverty alleviation. The context of this framework is to support the development of business cases that will release the resources necessary for data integration. These business cases may or may not end up having a net positive value, but it is nonetheless worthwhile to build any savings into the calculations and narrative they contain.

2. The framework was designed in the context of supporting one of the participating countries in the learning collaborative understand where potential savings may occur. While it is therefore titled a 'shared savings' framework, it is a given that in any specific situation some of the domains in the framework may in fact increase in cost after the data linkage is complete. For example, if the health agency is now able to detect and enrol a larger number of people in poverty as a result of data linkage with the social registry, then its costs may go up (albeit for justified reasons).
3. Some of the savings included in the framework might also be possible to achieve without data linkage or integration, via a single agency or system acting alone. For example, reducing inclusion errors through beneficiary list audits can be done even on a single beneficiary registry, so if that is the only aim then data linkage may not be the best tool to use. Some of the savings are therefore 'useful byproducts' of data linkage rather than data linkage being the only means to achieve them.
4. There is one major risk that needs to be taken into consideration when making a data linkage - especially if integrating beneficiary registries. For all the floors of a highly fragmented system of population targeting in which every agency has its own processes and list, one advantage is that if someone is incorrectly judged as ineligible for one program their status for another won't be affected. In a highly integrated system where beneficiary data across multiple social programs is linked, it becomes even more critical that each stage of the population targeting process is robust, or else one mistake in an assessment might inadvertently make a family instantly ineligible for health, cash transfer, educational vouchers and other lifelines.

the time and travel savings in having to register or apply through one application process instead of several, and the time and travel savings (the latter of which can be a major barrier to access) required to avail benefits. Both of these can be major barriers to access for many poor and vulnerable households, particularly if there is a significant distance to travel or substantial waiting times at points of registration or collection.

2. **Reduce inclusion errors:** Linking datasets may allow greater insight into beneficiaries on one or more social programs who should not be there. This may be because they have passed away, are no longer contactable, no longer fit the eligibility criteria, or never fit the criteria but were originally included because of either fraud or impersonation. A broader range of linked datasets will be better equipped to spot these instances and, if beneficiaries are removed as a result, savings will result which can either be reinvested in other beneficiaries or directed elsewhere. Of course, it may equally be that errors of exclusion become apparent through the data linkage, which if there is no waiting list system will result in increased costs - those developing the business case will need to study both effects carefully and factor them into any business case. Small sample linkages can be run to give some idea as to the extent of likely inclusion and exclusion errors that will be uncovered as a result of the linkage.
 3. **Lower administration costs:** Once the population targeting datasets have been linked, there may be significant scope for one or several of the agencies involved to scale back or stop duplicate or parallel tasks and processes. This could create two separate types of savings. The first are direct savings in staff wages, transport costs, consultant fees, IT software and hardware, marketing, beneficiary documentation/paperwork and all of the other direct costs of running separate population targeting processes. The second type are indirect savings to the workers of one or more agencies, with the time released from not having to do eligibility assessments, appeal committees etc redirected to more productive and value-adding tasks.
 4. **Increase revenues:** There were two very different routes by which data linkage might boost revenues for one or other agencies involved. The first was that the health or non-health agency may be better equipped with better quality data on its beneficiary population to advocate for increased public spending or a larger budget allocation. The second category was only relevant for some countries, but for those it was an important factor to consider; many countries with social health insurance schemes face a related population targeting challenge of how to identify the *non-poor* who are legally required to pay into the scheme but do not. The job of finding these individuals can be very difficult, but would in some cases be made easier with a more comprehensive list of those who were *not* required to pay. Coupled with national ID or census data, this improved data on the poor would allow a process of elimination to take place which could then result in a boost to premiums from the non-poor informal sector.
 5. **Reduce the cost of beneficiaries:** The most long-term potential savings route through data linkage was the idea that beneficiaries would become less costly to health and/or other social protection programs over time as a result of data linkage. The thinking here is that if the data linkage results in the existing beneficiaries of one social program gaining access to another, then this may reduce the costs for both. For example, a cash transfer beneficiary gaining access to health coverage may over time be more likely to get out of poverty and no longer need the cash transfer. Or, vice versa, a health beneficiary gaining access to a cash transfer scheme may be less likely to become sick in future. This would be the most difficult savings route to track, evidence or predict, but depending on the previous data available to a particular country it may be possible (e.g. studies showing the benefits of gaining access to a particular program when it was first rolled out, extrapolated to new beneficiaries gaining access as a result of the data linkage). A related potential route included under this theme is that better population targeting data may allow health agencies to better target particular health initiatives that were designed to reduce the long-term costs of care (e.g. preventative programs among low-income children or older people).
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Case studies of real-world savings in practice

With the above framework being deliberately hypothetical, participants were keen to accompany it with some specific examples of savings and efficiencies being achieved through population targeting data linkage. Some of the best of these examples come from Turkey in the creation of its ISAS reform to create a single information portal for 22 public institutions' data on households. This is primarily because the country made a particularly rigorous effort to document these savings during and afterwards, as well as the scheme itself being widely recognised as a success. The benefits measured can be broken down to demonstrate the framework's five dimensions as follows:

- **Reduce costs to beneficiaries:** Beneficiaries benefitted in multiple ways from the ISAS reform. The time required to submit an application decreased from days to minutes, and processing of that application reduced from months to days. The number of documents beneficiaries had to provide also reduced dramatically, from 30 to just one (an ID card or number) - making the process of accessing benefits far quicker and easier.
- **Reduce inclusion errors:** Around 10 percent of benefits were found to be duplicated and so removed from various programs, with many deceased beneficiaries also removed from program registries, resulting in substantial immediate savings. In addition, fraud was also reduced through the introduction of a sentinel system of 260 risk indicators which raised flags and initiated audits if a particular local office spent significantly beyond expectations. While no specific figure has been calculated from this in terms of financial gains from these, similar efforts in 2013 in Peru to remove deceased beneficiaries from its registries generated US\$160 million in savings. Likewise, Thailand's implementation of a national ID number to validate eligibility for its cash transfer scheme again tax and other databass generated between US\$29.7 and 59.4 million.
- **Lower administration costs:** As a result of the integration, the Turkish government estimates that it now processes around 2.3 million fewer documents each month. This and other de-duplication of tasks has resulted in one million person days saved per year among officials and civil servants. In productivity terms, the time required to complete a needs assessment for a potential beneficiary has decreased from 15-20 days to around 1 minute. It is estimated that these efficiency savings amount to around \$39 million per year - much more than the initial development cost of \$13 million for the system.
- **Increase revenues:** This was not an intended aim of the reform, and so no direct benefits have been recorded. However, as a result of the much more up to date linkage between income data, beneficiaries are now much more quickly removed from social program registries following an increase in income above the eligibility threshold. Whereas previously it might have taken up to a year to filter through government systems, it is now updated every 45 days.
- **Reduce the costs of beneficiaries:** Long term data on average cost per beneficiary was not collected as part of the Turkish analysis, however, access to mutually-supportive programs is now more effective. For example, the ISAS system is able to track a citizen's employment status and refer them to job training programs if they become unemployed.

At a cost of US\$1.3 per household on the registry to create, the ISAS system demonstrated clear payback in terms of a business case for data integration. These savings were widely communicated within Turkey, further making the case for improved public information systems and population targeting.



More information on all of these savings and reforms, as well as full references, can be found in World Bank. 2018. *Public Sector Savings and Revenue from Identification Systems: Opportunities and Constraints*, Washington, DC: World Bank.