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MAKING IT COUNT

*Using online data for effective monitoring and
evaluation of harm reduction activities in Yunnan Province, China*

A HAARP Positive Practice Study:

In collaboration with Yunnan Provincial HIV/AIDS Prevention and Control Bureau
and Yunnan Public Health Bureau

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Abbreviations

AIDS	acquired immunodeficiency syndrome
AusAID	Australian Agency for International Development
ARHP	Asia Regional HIV/AIDS Project
CP	country program
HAARP	HIV and AIDS Asia Regional Program
HIV	human immunodeficiency virus
M&E	monitoring and evaluation
PMO	project management office
SPSS	Statistical Package for the Social Sciences (software)

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1. Positive practice in monitoring and evaluation: The Yunnan database

1.1 Introduction

In June 2008, the newly established HIV/AIDS Asia Regional Program (HAARP) of the Australian Agency for International Development (AusAID) in Yunnan Province, China, set up a database to collect data from its 19 project sites to meet its project management and monitoring needs.

The system has proved to be very efficient at monitoring outputs and is now being used in Guangxi Zhuang Autonomous Region and in the new cross-border sites in Vietnam and Burma (Myanmar). As the database cost only US\$3000 to develop, it is cost effective.

This Positive Practice study was commissioned in April 2010 to look into the Yunnan database and its management, focusing in particular on its design and setup process, lessons learned, and the potential to replicate it across other HAARP sites and HIV programs.

Box 1. HAARP in Yunnan

The HAARP China Country Program (CP) commenced in June 2008 following a six-month transition from the Asia Regional HIV/AIDS Project. Its aim is to reduce the transmission of HIV associated with injecting drug use in Yunnan Province and Guangxi Zhuang Autonomous Region in southern China.

The CP is being implemented under the management of the National Centre for HIV/AIDS, which coordinates the response to the epidemic across China. The Yunnan Public Health Bureau serves as the main provincial counterpart agency, while county and city centres for disease control and public health implement activities at the site level in close collaboration with county offices of Public Security.

The China CP operates in 19 sites in Yunnan. In the second half of 2009, 3502 people who inject drugs received harm reduction services as part of HAARP in Yunnan. Over 300 000 clean needles and syringes were distributed and 228 000 safely collected. In addition, more than 44 000 condoms were handed out across the province.

1.2 The need for good data

The importance of monitoring and evaluation (M&E) in assessing the impact, outcomes and outputs of HIV prevention programs is critical. Not only can an effective M&E system help to track implementation, it can help identify problems early and allow the continual improvement of program quality, design and delivery.

Ensuring data quality is always a challenge, particularly during the rapid scaling up of a harm reduction program. Not only does HAARP work across multiple sites, it also covers thousands of individuals who may use more than one service site at the same time. M&E approaches need to take into account the breadth of services they cover. Using a database to monitor outputs is an important step towards achieving improved and consistent data quality.

1.3 Key features of the M&E database

Key and important features of the Yunnan system are as follows:

- access to and sharing data in real time across counties and the province
- local innovation and resourcefulness
- harnessing the power of the internet and web-based platforms.

While developed with Yunnan's needs in mind, the database will benefit other programs beyond China. The system meets the need for good M&E and offers real-time access to data.

Users do not need to be skilled in information technology to be able to use the system, nor do they need reliable broadband internet access as the system contains an offline module.

2. An identified need from within the program

“The system is not new, but for HIV project management it is new. It’s not about data for data’s sake. Instead it is data put to practical use.”

Duo Lin, Project Manager, Yunnan

In December 2007, AusAID’s Asia Regional HIV/AIDS Project (ARHP) drew to a close and preparation got underway for the scaled-up HIV and AIDS Asia Regional Program (HAARP). For the Yunnan Provincial HIV/AIDS Prevention & Control Bureau, this meant expanding its services from ARHP’s four project sites to 19 counties spread throughout the province, reaching over 3000 people who inject drugs.

Under ARHP, the provincial team had the time to make regular site visits and pick up the phone if they had a query. Taking on a further 15 project sites required a change in their project management style. It was a big challenge, and the team decided to meet it head on by developing a database to enable them to collect data and centrally track the project’s progress across all 19 counties.

The overarching aim of the new database was to understand in a timely manner what was going on at each of the 19 project sites. It was important for local project staff and outreach workers to see current activities throughout their county and be aware of the bigger picture.

While the new system was designed to meet the project’s reporting needs, both within the province and to the National Centre for HIV/AIDS and AusAID, it was initially set up to meet a need identified by the Yunnan project team. Its inception was not externally demanded by AusAID or regional project management staff.

3. Designing and piloting the system

“We designed this system to answer HAARP’s questions five years later.”

Duo Lin, Project Manager, Yunnan

3.1 A clear remit

When designing the data system, the project had three key requirements:

- perform multiple functions
- be simple with no excess data
- meet HAARP reporting needs.

The database and associated website cost US\$3000 to purchase and set up. Support was provided by Australian experts in discussion with the Yunnan team. The technology itself is very simple; the complex part was working out how best to use it.

3.2 Taking time to keep it brief

Designing the database took three months. With HAARP still in its establishment phase, the team tried to figure out what information it would need to collect when the program ended five years down the line.

Each of the four staff members took responsibility for developing two data-collection forms (a full list of forms and reports available on the data system is in Box 2). As all staffers had previously been involved in the ARHP, they were already familiar with AusAID reporting requirements. At regular meetings, the team shared draft forms and worked together to rationalise the number of fields. Simplicity was key; any information that was not required under HAARP was deleted.

The design of the database took into consideration how to demonstrate the outputs and impact of the project. Throughout the three month development process, the team continuously referred back to the project design

document and the memorandum of understanding with the Australian Government to ensure they were reflected in the structure of the new database.

3.3 Testing, testing

Once the team was happy with the design, it began testing the system. The first step was to populate the database using historic data from the four ARHP counties. Then the reports thus produced were cross-checked against the counties' real figures.

The team encountered various problems during testing. One was overlap between data collected at the provincial and county level, in particular when recording training. Training was entered into the system by both county attendees and provincial trainers, resulting in an over count. To avoid these glitches, the developers had to program the system to filter out doubled-up data. A similar problem that occurred when two outreach workers both entered the same client on the system is detailed in section 5.

Following initial testing, the database was piloted in the four ARHP counties during the six month transition to HAARP. In July 2008, the database went live across project sites in Jinning, Yanshan, Chengjiang and Yongde. Project staff received a full day of training from provincial staff before beginning to use the system. Feedback collected during this pilot phase was used to improve the system before rolling it out to the 15 new HAARP counties.

4. What is it?

“The data system is really helpful. Because of the database we know how the project is going, how many activities we’ve done and how many we haven’t done.”

Chen Qionghua, Project Officer, Jinning County

4.1 Web-centred management

From the outset, the Yunnan team put its website (<http://www.ynaidsxm.com>) and new database at the centre of the project. All project information is uploaded to the website – from event invitations and contact details, to training materials and evaluation reports – allowing the team in Yunnan to forego emailing or faxing anything to county sites. Using the website as a project notice board saves time and effort.

The main focus of the website is the portal to the database. Project staff at the county and provincial levels can log into either the main HAARP database or the more recently developed database of the Yunnan Injecting Drug User Cross-Border Harm Reduction Project, which collects information from border sites in Yunnan, Vietnam and Burma (Myanmar) that receive support through the first HAARP cross-border program.

Access rights are set according to whether staff work at the county or provincial level. Counties can enter or edit only their own information but are able to view data across all 19 project counties in Yunnan. The provincial head office can change data at all levels for up to 60 days after

Box 2. List of data records and reports available

- M&E form
- Outreach worker daily log sheet
- Study tour visit record
- Experience-sharing record
- In/out documents registration
- Information, education and communication materials development and distribution
- Project dissemination
- Personnel information
- Meeting and training record
- Cooperation with police academy
- Assets registration.

Automatically produced reports include the following:

- Individual county data review
- 19 counties data collection report
- Core service data collection
- 19 counties supervision times
- 19 counties supervision scores
- Personnel training record
- Overall activities progress
- Client numbers of individual outreach workers
- Client information of outreach workers.

Case study 1. Jinning County Health Bureau

its first entry. This cut-off date was introduced to prevent endless data amendment and emphasise getting it right the first time.

The system uses a number of data forms for collecting information to demonstrate HAARP's outputs.

Key indicators are picked out:

- coverage
- services, e.g. needle syringe distribution and access to methadone maintenance therapy or anti-retroviral therapy
- evaluation and supervision, e.g. frequency of provincial expert visits to county sites
- information exchange, e.g. training, meetings, study tours and papers published.

All forms have been made as simple as possible. Where practical, form fields consist only of multiple-choice tick boxes or number entries. Text boxes are limited to client names or short notes; for example, training must be described in no more than 20 words. The database uses logic checks to validate data and will, for example, automatically reject as too high an outreach worker's record update that shows 100 needles given out during one visit to a drug user.

The database offers several functions to its users. Data records such as outreach worker daily log sheets can be printed out for file management, or data can be exported to Excel for use in county and provincial reporting. Further, the raw data collected over several years can be entered into analytic software packages such as the Statistical Package for the Social Sciences (SPSS), allowing its potential use in the scientific analysis of HIV and harm reduction activities.

Chen Qionghua is a project officer at the Jinning County Health Bureau in the town of Kunyang. She has worked for the bureau since 2008 and is responsible for entering county data each month.

The bulk of the data collected is from the county's outreach workers. Every day they record their meetings with drug users and activities in a notebook. This notebook is then used to fill in hard copies of the outreach worker's daily log sheet.



Twice a month, outreach workers hand in their notebooks and log sheets at the drop-in centre. The centre's management then checks the quality of the log sheet and resolves any discrepancies. It takes about an hour to check each page of a log sheet and ensure the services provided match the data. The log sheets are then passed on to the county office for a further check before the data are entered into the system. It is crucial to get the data right the first time, as the database's internal logic correction will not accept any entries it thinks are incorrect. This makes the entry invalid.

The system helps us to know exactly how many injecting drug users each outreach worker has served. It also allows us to compare counties. I can compare Jinning's progress against project indicators with that of other counties. If we've done a better job, then great. But if we haven't, it's motivation for us to catch up.

4.2 Our services, our data: Getting county-level buy-in

“Up until now I haven’t found any problems with the system. It is comprehensive and covers all aspects of our work.”

Ma Yunfang, Outreach Worker, Jincheng drop-in centre

It took several training sessions to fully persuade counties to use the system. As this was the first time local staff had been forced to use and analyse data, there were concerns that the database would add to their workload. From the outset, the provincial team made clear that it would take into account only those project activities that had been entered into the database. The 10th day of each month is the deadline for entering the previous month’s data.

All county townships have access to the internet, but different project sites have taken different approaches to data entry. In most cases the county offices upload data, but some counties have used the village doctor or local computer whiz kids to enter data. Provincial management took a flexible stance regarding methods of data entry, as long as end results were correct.

Following the rollout of the system, some counties complained that their slow internet connection caused their session to time out repeatedly, forcing them to continually log in during their monthly data entry. In response, the head office developed a module that allows local offices to enter all data offline and then connect to upload it in one go.

A key to achieving local buy-in was to ensure the collected data were relevant to and useful in their daily work. As the project counties became more accustomed to the system, they began to guide and improve their services. In 2009, a new outreach worker’s report was introduced at the request of the counties. It enables counties to pull out data on a specific outreach worker’s activities, including the number of clients reached, frequency of visits, and number of needles and condoms distributed.

Box 3. Daily log sheets

The outreach worker daily log sheet is filled in every time a service is provided to a drug user. Outreach workers fill in a paper copy of the form. The sheets are then handed in to drop-in centre management at least once a month for entry into the system.

The log sheet covers the following key information:

- Basic data: time and date, client identification, age and sex
- Materials distributed: number of needles collected and handed out and condoms distributed, etc
- Information, education and communication materials and health education materials, with all Yunnan-produced materials provided in a list
- Referral, which must be backed up by a feedback document to prove a client received service at the point of referral.

Case study 2.

Wuhua Center for Disease Control and Prevention

Jiang Jiayun, the chief of the HIV section in Wuhua Center for Disease Control and Prevention, enters all data for his county.

At the very beginning I thought “it’s big”, so we asked for capacity building from the province on how to use the data. Each month I have to enter between 700 and 800 items on the database, and if I make a mistake I have to delete the whole item.

The outreach workers thought it was a bit complicated at first. They thought it would add to their workload as they had never used such a thing before. I told them it was a project regulation, and after 2–3 months they got used to it. But sometimes mistakes can’t be avoided.

It’s very helpful to have a system that can identify the weak and strong points in our daily work. We are now designing a similar system to use on another, smaller German-funded HIV peer education project.

4.3 Using data to monitor performance

The database was created in response to the need for scaled-up project management. But, has it met that need? The answer appears to be ‘yes’. The Yunnan team clearly understands that it could not have taken on an additional 15 project sites without it.

The database allows the head office to monitor project performance across all counties. Staff are able to see which sites are making

good progress as well as those that need to ‘pull their socks up’. The provincial management team also uses the system to ensure that each county receives its fair share of supervision by tracking, for example, the number of visits from provincial experts and of trainings held.

In October 2009, one county in southern Yunnan ceased activity following the relapse of two outreach workers and the arrest of the remaining two. Although the county lead did not report the problem, the Yunnan head office noticed no monthly data had arrived and sent provincial- and prefecture-level experts to help resolve the issues. The

last quarter of 2009 saw 14 separate visits made to the county, but activities did not restart. After three months without data, the county’s funding was cut off. By April 2010, the break in funding had the desired effect, as services had resumed and were beginning to build towards original coverage levels.

The database has simplified project reporting, as information for annual reports is easily accessible and can be exported to an Excel spreadsheet at the touch of a button. More importantly, the provincial team needs not bother the counties for data, which is routinely collected and uploaded.

Box 4. Who uses the database?

The database is used at all levels of HAARP in Yunnan Province:

- Yunnan provincial project management office
- provincial health authority
- provincial experts
- local/county project staff
- outreach workers.

5. Keeping the data clean

5.1 Good information in, good information out

In addition to the monthly checks by counties and provincial management, the data are verified a further three ways:

- quarterly spot checks on daily log sheets
- monthly control of outreach workers' records
- biannual inspection of detoxification centres.

HAARP Yunnan contracted the Statistics Department of Kunming Medical College to control data quality. Every quarter, four counties are randomly selected and asked to send to the college all their daily log sheets for the previous month. The paper copies are crosschecked with the data entered into the system. Mistakes are highlighted in a report to the county. Annually, the Statistics Department provides a detailed analysis of why data mistakes have been made, and all 19 project sites are brought together to receive feedback and further training.

Every month, all county sites are required to confirm that their log sheets are correct by selecting two log sheets and checking them with the relevant workers(s) that completed them. Provincial experts use technical support visits to spot-check the county database and verify that collected data can be backed up by actual paper records.

Final quality control takes place twice a year in detoxification centres. Prefecture-level experts visit the centres and take paper records from a sample of 30 clients receiving HAARP services; this information is then cross-checked with that entered into the database. This inspection is important for ensuring the quality and coverage of each county's services in detoxification centres. In 2010, Yunnan doubled its budget for prefecture data checks.

Box 5. Detoxification and rehabilitation centres

As many drug users reside in detoxification and rehabilitation centres for considerable periods of time (a minimum of 1–2 years), it was agreed that HAARP Yunnan would provide harm reduction training and peer education inside these centres. Activities are organised by HAARP county officials, who are responsible for entering data into the database. Detoxification centres do not themselves have access to the database.

5.2 The importance of client confidentiality and identity

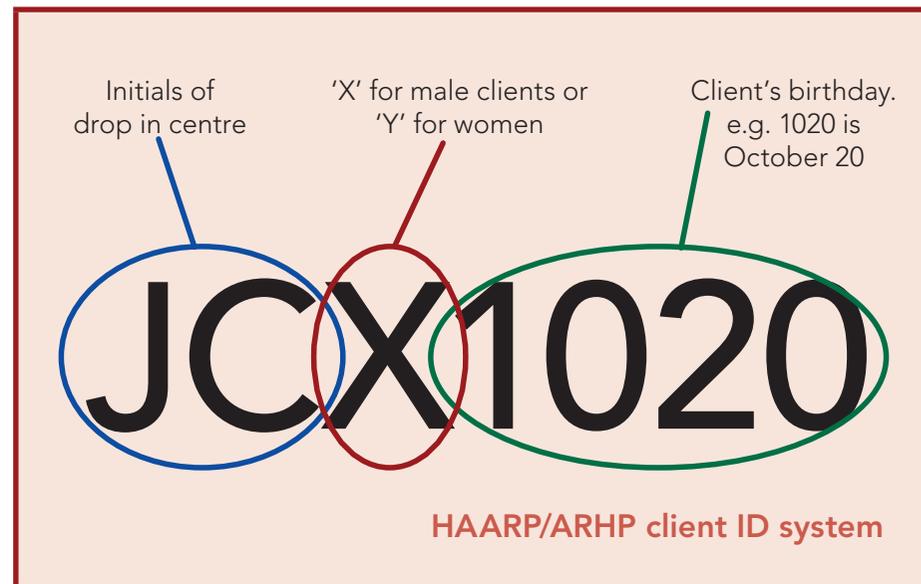
With drug users risking two years in detention if caught by the police, anonymity is essential for clients at drop-in centres or when accessing needles and syringes and other services. At the same time, monitoring quality and coverage demands that service providers can differentiate clients and get a sense of the reach of services and the individuals accessing them.

HAARP Yunnan inherited its identification (ID) system for drug users from the previous project, ARHP. All project clients are assigned an ID consisting of the drop-in centre's name and the client's age and sex (Figure 1).

Although this ID system is easy for the computer to read, it is not without problems. Outreach workers often confused the letters identifying the client as male or female, and they would record birth dates using both the lunar and the solar calendar. These discrepancies made it harder to identify cases in which the same client had been assigned to more than one outreach worker.

Training and guidelines were provided to outreach workers, but the system still did not lend itself to easily distinguishing between new and existing clients. At drop-in centre meetings, outreach workers used nicknames to differentiate clients, but drug users often go by different names in different situations, which further complicated the system.

Figure 1 All project clients are assigned an ID consisting of the drop-in centre's name and the client's age and sex.



5.3 How Kunming taxis helped resolve the identification problem

The Yunnan team knew that getting the new database to function required them to find a better system. The solution came from a rather unlikely source: taxis in the provincial capital, Kunming.

To help customers remember which vehicle they travelled in, Kunming has assigned each taxi with a picture of an animal and a two-digit number (Figure 2). The assumption is that passengers are more likely to remember flagging down 'Butterfly 46' than a long, complicated registration number.

From July 2008, Yunnan produced sheets of 1000 logos that combined a picture with a number (Figure 3). Outreach workers then assigned to each of their clients a logo and matched it up with the existing ID number in a code book. To help clients remember their logos, outreach workers distributed small gifts such as toothpaste from two to four times a year with the logos stuck on them.

When the new identification system was introduced the biggest problem encountered was the over-distribution of logos. In retrospect, staff felt that training did not sufficiently emphasise the importance of 'one client, one logo'. In Wuhua District, this led to outreach workers' distributing all 1000 logos. Drop-in centres did not sufficiently record which logos had been handed out or by which outreach worker.

Figure 2 Kunming taxis are identified with an easily remembered animal and two-digit number, inspiring a better way to identify clients.



To ensure that each client is correctly identified, the Yunnan team now uses all three systems simultaneously. The logos and nicknames are used for day-to-day identification, while the corresponding seven-character ID code is used when entering client data online.

Overall, the logo system has tackled the issue of identifying drug users and reduced the instance of outreach workers' double-counting clients. It is notable that the introduction of the system was followed by a 20% reduction in the number of clients recorded in Yunnan's project counties.

Figure 3 A sheet of Yunnan logos, with one logo inset.



With more logos distributed than clients reached, the provincial team realised there was a problem. Further guidance was given on the mechanics of the logo system, and now county teams understand how to use logos and the importance of monthly checks for double-counted clients.



Case study 3.

Data in practice at Jincheng drop-in centre

Jincheng drop-in centre in Jinning County has five outreach workers covering three townships. Monthly they reach almost 100 people who inject drugs.



Ma Yunfang (left) and Cui Yun (right) participate in an outreach worker meeting in Jincheng.

Ma Yunfang, Outreach Worker

Ma Yunfang has four years' experience and is responsible for training new outreach workers.

"Before the daily log sheet we used a notebook to record all the information received from injecting drug users—for example what kind of needles they prefer to use. There was no standard information.

Before HAARP introduced the logo system, we used only the ID number, and this caused a problem with overlap. If two women were born on the same date and lived in the same county, their ID would be the same. With the introduction of the logo system, even when ID numbers are the same the pictures are different. So we can tell our clients apart.

The best thing about this system is that the log sheet records the number of times each person accesses a service, and the logo system records our exact number of clients. The database and logo system are both important components in the training given to new outreach workers."

Cui Yun, Outreach Worker

Cui Yun recently returned as an outreach worker, following a year's detention in a detoxification centre.

"The daily log sheet helps me to have a very clear picture of the number of clients I cover.

The main problem we had at the beginning was that many clients didn't want to tell us real information about themselves, such as their age. They were concerned about safety, as they didn't want to be discovered by the police. Many of our clients weren't sure what the new logo was for and were worried it was a clue for the police to trace them.

At first I didn't show anyone the log sheet. I kept it at home. I would talk to my clients, and during the conversation I would get the information I needed for the log sheet. I would later record what the client said in my notebook and then use this to fill in the log sheet. But gradually my clients realised the benefits of taking part in the program, and now they actively provide information."

6. Lessons learned

“The biggest lesson is that you must be realistic, rather than ambitious.”

Duo Lin, Project Manager, Yunnan

The HAARP Yunnan database enabled provincial managers to scale up the number of project sites from four to 19 in six months. As they faced implementation challenges, establishing the new system was a risky enterprise but one that has largely paid off.

With the database, the Yunnan management team can monitor project statistics in real time and discover weak points as they arise. From another perspective, the system can identify successful project sites and use performance indicators as criteria for awarding additional funding. Project information is accessible wherever there is an internet connection.

There is a real focus on collecting quality data. All data on the system must be traceable back to original paper records, and, after a 60-day grace period, provincial staff cannot change the data entered. HAARP Yunnan notes that its client and coverage figures dropped as a result but is confident that its reporting now more accurately reflects activities in the province.

The biggest achievement of the database has been getting outreach workers and drop-in centres to use it. The key to this has been making the data and reports relevant to daily work at the

local level. Collecting data simply because it is interesting would not have worked. Instead, design had to take into account local needs, keep forms simple and, above all, create a system that people would like.

Room for improvement? The Yunnan team recognise that the database was a little overambitious at first and that future projects could simplify it. The following list details key lessons learned and possible improvements.

- **Training.** Training has been crucial to ensuring that the database was rolled out as smoothly as possible. In some cases, more explicit training could have helped to avoid early mistakes in implementation by, for example, emphasising assigning only one logo per client, which did not happen in the beginning. Training must be ongoing, both to ensure that new staff are fully up to speed with the system and to troubleshoot data issues as they emerge. The database is added to the agenda of each Yunnan county training session.
- **Correcting data.** A fully functional database requires that the entered data be carefully checked. Again, training is key. Not only should outreach workers understand what data to collect and why (for example, to distinguish clients), but those filling in the database need to know what mistakes to look for. Regular monitoring and spot checks should be carried out to verify data.
- **Meeting local needs.** While the data collected by the system is unchanging, the interface has been adapted to respond to local needs. The option to update the database offline has helped to overcome problems arising from poor internet connectivity.

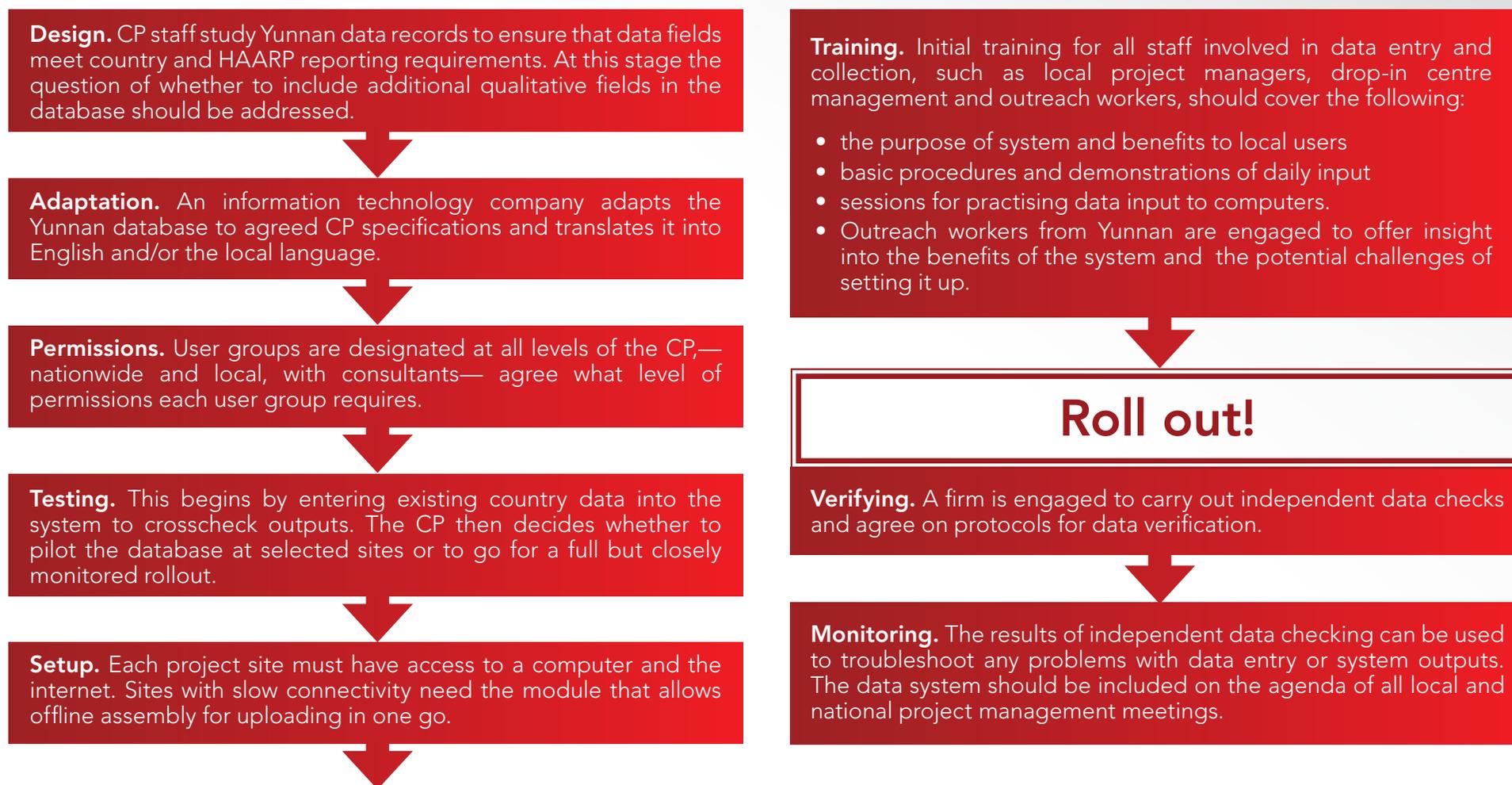
In addition, the Yunnan team has added different output formats in response to county requests for different reporting templates.

- **Statistics are not everything.** Since the introduction of the database, some counties have become overly reliant on statistics. Whereas in the past project managers had a general understanding of how they performed, many are now too focused on the figures. Counties tend to perceive high numbers as good performance, without taking into account other factors. Provincial management has had to emphasise the need for soft information in reports in which counties explain what is behind the data.
- **Quantitative and qualitative.** The Yunnan data system was set up to record project outputs, not outcomes. Without negating the importance of systematically recording data across such a wide area and from numerous clients accessing multiple services, future databases should consider methods to generate outcome data. One consideration is to revise the system to include fields that record qualitative and narrative data, though this would compromise the simplicity of the existing database. It is perhaps more advisable for the database to be considered one piece in a bigger M&E puzzle, and for qualitative data to be collected using more appropriate methods such as field visits and qualitative surveys.

7. Steps for implementing the database at other HAARP sites

The Yunnan database can easily be replicated in other HAARP countries and has already been extended to cover the Yunnan-managed cross-border sites in Burma (Myanmar) and Vietnam.

The following diagram is a suggested roadmap for rolling out the system in a HAARP country program (CP).



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