

The background of the cover is an aerial photograph of ocean waves. A large, stylized graphic of a vortex or cyclone is centered on the right side of the page. The vortex has a red and purple center that transitions into a blue and green outer ring, matching the colors of the water in the background. The text is overlaid on this graphic.

A Public Sector Workforce HIV Prevalence Survey

A Researcher's Toolkit

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Australian Government
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© Introduction

Over time, it has become apparent that the HIV/AIDS epidemic is adversely affecting the South African population. Public servants are responsible for providing services to all sectors of society. In the same way that educators are critical to the schooling of South Africa's youth, health workers are critical to the implementation of a successful public health response to the HIV/AIDS epidemic in South Africa, and yet public servants may be as susceptible to this epidemic as the general population.

In the wake of health care staff shortages in the public sector and increased levels of HIV/AIDS-related morbidity and mortality within the general population, concern over the readiness of the public health sector to deal with increased patient burden prompted stakeholders to assess the impact of HIV/AIDS on public healthcare personnel. The objective of the assessment was to generate information that could contribute to formulating a suitable response and help anticipate future demand for this segment of the workforce.

Our research team carried out a voluntary, anonymous HIV seroprevalence survey among professional and support staff at Helen Joseph and Coronation Hospitals in Gauteng, South Africa. Blood samples were further tested to measure CD4 cell counts. Knowledge of the CD4 cell count distribution provides an indication of what percentage of workers are at increased risk of opportunistic infections, such as tuberculosis, and what percentage of workers have AIDS and are eligible to receive antiretroviral therapy (ART).

The seroprevalence survey at Helen Joseph and Coronation Hospitals was very successful. More than 83 percent of nurses and allied healthcare workers volunteered to participate. Survey results were disseminated widely both among participants and to hospital managers, health department officials, and other interested parties.

The methodology used for the survey can be applied to other health care facilities and many other public sector workforce settings. This research toolkit offers a step by step description of the procedures used during the seroprevalence survey and the lessons learned in our research.

☉ Target Audience

Given the value of knowing the HIV and AIDS prevalence of a workforce, stakeholders and researchers who might find this toolkit on survey procedures very useful include:

- ☉ Stakeholders in public health policy and financing
- ☉ Local, Provincial and National Departments of Health
- ☉ Other government agencies
- ☉ Non-governmental organisations
- ☉ Unions, "HIV at the Workplace" committees, and Employee Wellness Programmes
- ☉ Human resource managers, administrators, and supervisors
- ☉ Institutional CEOs and CFOs
- ☉ Multidisciplinary research teams in public and academic settings
- ☉ Training institutions such as nursing, medical, and technical schools.

☉ Toolkit Objectives and Outcomes

Objectives	Outcomes
<p>To provide users with a better understanding of:</p> <ul style="list-style-type: none"> ☉ How to conduct a HIV seroprevalence survey in a public workforce. ☉ How to determine the proportion of HIV positive workers in different stages of HIV disease based on CD4 cell count distribution. 	<p>Users will be able to:</p> <ul style="list-style-type: none"> ☉ Conduct valid and ethical research, acceptable to the workforce being studied. ☉ Carry out a voluntary, anonymous seroprevalence survey and concomitant CD4 cell count.
<p>To guide users through:</p> <ul style="list-style-type: none"> ☉ Logistical challenges. ☉ Potential pitfalls. ☉ Helpful strategies to maximize participation. 	<p>Users will be able to:</p> <ul style="list-style-type: none"> ☉ Create strategies to overcome common causes of low survey participation. ☉ Foresee and address logistical difficulties.

© What is an Anonymous, Voluntary HIV Seroprevalence Survey?

An anonymous, voluntary HIV seroprevalence survey aims to estimate the proportion of people in a given population, such as a workforce, who are HIV-positive. To do this, biological samples (e.g. oral mucosal transudate or blood) are collected either from everyone in the population who volunteers to participate or from a representative sample of the population. If a high percentage of workers voluntarily participate, the proportion of samples that test HIV-positive will provide a good estimate of HIV prevalence in the workforce being studied.

The type of survey described in this toolkit is:

- © Voluntary. No one is required to participate, and there are no penalties or negative consequences for not participating.
- © Anonymous. No identifying information of any type is collected from participants.
- © Unlinked. The samples collected cannot be linked to the individuals who donated them.

Participants in an anonymous HIV survey can not find out their individual HIV status. It is therefore an essential part of such a survey to facilitate VCT opportunities to participants.

What is the Usefulness of Such a Survey?

The results attained from a successfully executed survey will aid stakeholders in:

- © Preparing for future human resource requirements in the context of AIDS-related staff attrition.
- © Enhancing workplace safety strategies e.g. by reducing exposure of HIV positive employees to opportunistic infections.
- © Planning for the clinical and psychological welfare/health of all workers.
- © Planning for provision of voluntary counselling and testing (VCT) and/or antiretroviral therapy (ART).
- © Planning for the impact of morbidity and mortality of HIV-positive workers in terms of reduced work productivity.
- © Assessing the cost to the employer of morbidity and mortality among its workers in terms of loss of productivity, absenteeism, employee benefits, and replacement.

What Information Does the CD4 Cell Count Distribution in a Population Give Us?

CD4 cell count distribution in a population will inform us about progression of the disease among HIV-positive participants. People with CD4 cell counts under 350 are more likely to suffer infections such as tuberculosis (TB). According to South African treatment guidelines, HIV positive people with CD4 cell counts below 200 are additionally at risk of life threatening opportunistic infections (OIs) and are eligible for antiretroviral therapy.

Knowing what proportion of HIV positive workers have a CD4 cell count below 350 allows for better:

- ⦿ Planning towards making the workplace environment safer for “at risk” workers.
- ⦿ Policy making regarding flexible work place assignments.
- ⦿ Policy making regarding workplace risk responsibility (i.e. who is liable for an HIV positive worker contracting TB at the workplace).
- ⦿ Medical and psychological treatment needs-assessment.
- ⦿ Planning for increased worker attrition due to morbidity and mortality
- ⦿ Planning to increase the pool of student nurses or trainees.
- ⦿ Planning for interventions geared toward increased HIV status awareness through access to VCT services.

© How to Use this Research Toolkit

Once you have identified the need to carry out a seroprevalence survey and have found a motivated and committed research team to assist with the survey, this toolkit will lead you through each step of the survey methodology (including data collection and analysis of your results).

A set of detailed methodology segments, divided into the different research stages, is provided.

Each segment is followed by a *boxed-in* case study narrative that describes in detail our own experience during this project. The case study format will help you understand how the research methodology translates into actions.

We have also added a chapter on how to foresee and overcome common pitfalls.

Finally, annexed to this document, you will find informational material as it was presented to the workforce we studied in an effort to maximize understanding of the survey.

© Methodology

I. Getting Started

- 1) Obtain permission to carry out the survey.
 - © Identify who is directly responsible for allowing the survey to take place at your chosen workplace.
 - © Ask for approval from that person/s, independently of ethics committee approval.

- 2) Identify the research team members.
 - © A committed core research team is key to a successful project.
 - © A lead researcher within the research team should be identified, as the person responsible for coordinating activities, for project administration, and maintaining communication between team members and stakeholders.
 - © At least some team members should be well known and trusted within the workforce to be surveyed. It takes a far greater effort to establish rapport and trust around a sensitive issue such as HIV status and confidentiality at the workplace without a concrete link between the researchers and the workforce.
 - © Additional team members and technical assistance can be brought in according to the project needs. Examples of additional personnel include data entry clerks, statistical analysts and epidemiologists.
 - © Identify a source of additional help for undertaking the survey (i.e. HIV counselors and/or hospital/institutional volunteers or students)

- 3) Write a research protocol.¹
 - © A research protocol is a detailed description of how you plan to carry out a study.
 - © In seroprevalence surveys, written consent by voluntary participants could compromise their anonymity and thus lessen participation. To this end our protocol included extended informational outreach; follow by *verbal* consent only from participants.
 - © Submit the protocol to an appropriate ethics committee.

- 4) Create a budget based on the size of the population to be surveyed.
 - © Key items to include in the budget include the research team's time, unit costs for test kits and laboratory services, and complimentary gifts for participants.
 - © Some additional costs to be budgeted include outside personnel costs (e.g. phlebotomists), dissemination efforts,

¹ Although your survey may not be carried out in an academic setting, the sensitive nature of HIV testing and the need to validate respect for the participants and their anonymity, we suggest to all researchers to submit their protocols to ethical oversight.

comprehensive laboratory fees, secure transport of samples, telecommunications, and data processing.

- ☉ Secure funding for the survey from the commissioning institution, government agency, department, or NGO.

5) Decide on a complimentary gift.

- ☉ We found that handing out a small complimentary gift (a project T-shirt) to survey participants raised participant moral, promoted workplace unity, and motivated high participation rates.
- ☉ Identify what is an appropriate complimentary gift for participants, taking into account local culture, cost, and ethics codes (a focus group discussion with potential participants can assist in determining an appropriate gift)
- ☉ The gift should not favour any specific type of individual (i.e. handing out makeup could deter males from participating in the study; handing out meal tickets could select for less wealthy participants with a different HIV risk, etc).
- ☉ Once an appropriate gift is decided upon, source the provider and ensure the price. Sufficient quantity and timeliness of delivery must be assured.



Box 1 Case Study

Getting Started:

The two study hospitals have a common senior administrative body. The CEO of the hospitals and chief supervisors respectively provided approval for the study. In an effort to maximize participation in the survey, worker's unions and staff supervisors (matrons) also provided approval for the study. The study was approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg.



II. Study Sites and Population

- © Identify your study site/sites.
- © Define which workers are to be included in the survey and which workers are to be excluded from the survey. For example, workers on leave (maternity, study, external rotations, ill health etc) should be excluded from the denominator group since it is imperative to be able to compare survey participation with a denominator group of people eligible to participate. (For example, “80 of 100 workers who could have participated did participate.”) Other reasons to exclude workers from participating are their employment status, for example, volunteers or subcontracted workers are not tracked by human resources rosters and hence can not be reliably added to the denominator group.
- © Should you attempt to survey your entire workforce or a representative sample? If your survey population is too large to test or you have logistical, budgetary, or other constraints, an experienced epidemiologist or bio-statistician can be called in to assess the most appropriate method, minimum number of participants, and least biased sampling mechanism given your specific restrictions.



Box 2

Case Study

Study Sites and Population:

Our study was conducted at two discrete but related public hospitals within the Gauteng Province Department of Health. One of the hospitals provides outpatient clinical care, secondary care, and tertiary care in surgery, orthopaedics, psychiatry and internal medicine. The other hospital provides outpatient clinical care and secondary care in paediatrics, gynaecology, and obstetrics to the same patient base.

The study population included 2032 professional and non professional-level employees. For purposes of the study, “professional staff” included medical doctors, nurses, assistant nurses, nursing students, and allied health workers (pharmacists, psychologists, occupational therapists, social workers and other professionals at the same level). “Non-professional” staff included maintenance, cleaning, and kitchen staff known as general assistants.

Personnel excluded from our study were hospital volunteers and outsourced security personnel as their attendance could not be verified on internal human resources rosters. HIV counsellors were excluded, given that some were recruited from the HIV clinic patient pool and their results could have given rise to an overestimate the overall HIV prevalence and progression. Similarly, employees who are absent from work on all test days were excluded from the analysis. We estimated a small underestimate of the true prevalence given that some of these absences could be related to HIV morbidity.

Our study population was relatively small and confined to two work sites. Consequently, we opted not to “sample” workers for the survey. We considered that those workers asked to be in the survey sample might have perceived themselves as “singled out” because of their HIV status. And that this would affect participation in and perception of the survey.



III. How to Maximize Survey Participation

- © Identify as many stakeholders within the institution as possible, including all levels of management, National and/or Provincial Government Departments, political appointees, workers union's shop stewards, representatives, and other respected individuals within the workforce.
- © Set up meetings with each stakeholder group to propose a cross-sectional, voluntary, anonymous, unlinked prevalence survey. You must present the potential gains and risks of such a survey; answer questions, receive input and establish rapport in order to minimize feelings of suspicion among these groups.
- © Create informational materials to be freely, visibly and frequently distributed to all workers to assure awareness and participation. (See Annex 1 for dissemination material.)
- © Set-up mechanisms to answer queries, receive criticism and feedback from workers directly. These processes although labour intensive, build up the needed trust in the researchers to carry out a successful survey.
- © In order not to alienate participants fearful of needles or giving blood; participants can be given the option to *choose* between providing an oral fluid or blood sample. This choice of samples should increase overall survey participation over offering blood sample testing alone.



Box 3 Case Study

Maximizing Participation:

Building on previous experience with private sector workforce surveys in South Africa, extensive efforts were made to ensure that the prospective participants

- 1) understood the purpose, benefits, risks, and voluntary nature of the survey;
- 2) were comfortable with the steps taken to ensure anonymity and confidentiality; and
- 3) were willing to participate.

To this end, members of the study team created informational posters placed throughout the study sites. In an attempt to prompt discussion and answer queries, an informational letter in a “question and answer” format was added to the pay-slips of all employees on two consecutive occasions leading up to the survey. A series of meetings with hospital stakeholders (management, HR, ward matrons and worker’s unions) were carried out to answer questions and receive input for the survey. In an attempt to reach workers directly, informational sessions were held on site at work stations on weekends and during nightshifts. Lastly, an informal informational breakfast enabled workers to further interact directly with researchers and ask questions related to the survey. One of the key messages communicated to participants was that they would not be able to obtain their HIV results from this survey, since it was entirely unlinked and anonymous, but they were informed of free in house and off premises VCT sites should they wish to know their HIV status.

In order not to alienate participants fearful of needles or giving blood, participants were also made aware that they could *choose* to give an oral fluid or blood sample, should they opt to participate in the survey.

No monetary compensation was provided to participants, but each participant received a t-shirt as a token of appreciation for his/her time and possible discomfort. In an attempt to reduce the likelihood of ineligible hospital staff from giving samples in exchange for t-shirts, we gave t-shirts to all personnel who presented to the testing sites regardless of whether they met the inclusion criteria.



IV. Logistics and Planning

- ⦿ Get assurance from your laboratory service provider on how many samples can be processed per day.
- ⦿ Establish what quality control methods the lab uses to ensure accuracy of the results.
- ⦿ Establish at what temperature specimens should be optimally stored at until they reach the lab.
- ⦿ Ensure you will have complete access to employee attendance records for the days of the survey. If possible from both human resources office or supervisor and each department or unit attendance records for double verification.
- ⦿ Schedule your prevalence testing days with input from human resources managers, unit managers and workers in general in order to minimize lack of participation due to previously scheduled activities such as in-house training sessions or extended meetings, holiday seasons, heavy workload days or night shifts.
- ⦿ Coordinate with managers the availability of an in-house survey area large enough for at least 100 participants at a time.
- ⦿ Coordinate staffing needs for the testing days. Remember, the research team may need to ask for those days off from their other posts within the institution.
- ⦿ Coordinate pick-up and drop-off (transport) of samples to the lab and include a backup plan for sample delivery.

V. Notes on Testing Materials

- ⦿ Coordinate availability of all materials needed for the survey. A check list of materials can be found on the following page.
- ⦿ Oral testing kits used in our survey were OraSure[®] oral fluid specimen collection devices comprised of a swab designed to draw out HIV-1/ 2 antibodies, not the virus, from the tissues of the cheek and gum and a vial that holds a blue preservative liquid. The swab, once utilized, is placed in the vile, sealed, and sent to for ELISA assay testing. This HIV testing method has been documented to be 99% accurate.
- ⦿ Blood samples are collected in two separate vacutainers. One for HIV ELISA testing and another for CD4 cell count determination.
- ⦿ We have included (Annex 2) a sample demographic data form as filled by survey participants. No individual identifiers are collected.
- ⦿ Identical barcodes are placed on this form and on the participants' biological sample (blood or oral fluid) in order to later stratify data by age, gender, race and job band.

Materials Check List	Units
<p>Printed materials:</p> <ul style="list-style-type: none"> ☉ Printed demographic survey sheets ☉ Bar-codes for survey form and specimens ☉ Leaflet on free, confidential, accessible VCT and ARV therapy sites, informational handouts ☉ Plastic or laboratory specimen bags to insert demographic survey sheets ☉ Staplers, pens, high-lighters, rubber bands etc 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Testing materials for oral fluid samples:</p> <ul style="list-style-type: none"> ☉ Latex and hypoallergenic gloves ☉ Orasure Oral Fluid testing devices ☉ Receptacle for waste papers etc ☉ Receptacle for processed oral samples ☉ Timers/stop watches 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Testing materials for blood samples:</p> <ul style="list-style-type: none"> ☉ Phlebotomy chairs/armrests ☉ Latex and hypoallergenic gloves ☉ Size 4 and 6 needles ☉ Sterilizing swabs ☉ Cotton balls ☉ Tourniquets ☉ Needle barrels ☉ Small plasters ☉ Vacutainers (3cc yellow and purple top, with and without anticoagulant) ☉ Receptacles for waste and cool receptacles for blood samples 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>General:</p> <ul style="list-style-type: none"> ☉ Computer and internet access ☉ Receiving table and chairs ☉ T-shirts (multiple sizes) ☉ T-shirt storage and dispensing table ☉ Lockers/ secure storage for staff and supplies ☉ Cooling facilities (refrigerator or cooler box with maximum/minimum thermometer and/or temperature control) ☉ Transport (for up to 4 sample deliveries/survey days) ☉ Adequate seating for participants and research team/volunteers 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

VI. Conducting the Survey

- ⦿ The rooms/areas where the survey should take place should be easily accessible to all potential participants.
- ⦿ The survey rooms should be clearly marked and easily found within the institution.
- ⦿ Area should be clean, have good lighting and be large enough to cope with high numbers of participants.
- ⦿ Ample seating should be available in case participants must wait to have their samples taken.
- ⦿ Handouts in both the Zulu and English language that described on and off-site antiretroviral therapy and VCT sites should be made available to all participants².
- ⦿ As each participant approaches the receiving table they should be asked if they are on the pay-roll of that institution. This is to expose persons excluded in the research protocol from participating in the survey. If they are volunteers or otherwise involved in the functioning of the institution, they are politely ask not to give a sample and offered a t-shirt the last day of the survey.
- ⦿ Eligible participants and a research team member jointly fill in the demographic data form.
- ⦿ Participants are then asked to choose either type of testing method and according to their choice, given either an oral testing device or two blood sample vacutainers.
- ⦿ Identical bar code stickers are attached to the demographic survey sheet and either the oral testing device or each of the two vacutainers. Extra barcodes are discarded. A plastic specimen bag is supplied to each participant to later be used to gather the sample and demographic survey sheet in a common collection bin for transport to the laboratory.
- ⦿ The participant is then directed to either a phlebotomist or oral sample collector (a team member who describes the oral sample collection method to groups of up to 6 participants at a time).
- ⦿ After a participant has provided a sample they are then directed towards two openly visible collection bins for blood or oral samples. There, the participant themselves are asked to deposit their sample. We believe this strengthens the openness of the process and participants feel their samples are not being tracked.
- ⦿ Once blood samples have reached room temperature, they are placed at 10°C and transported every two to three hours to the lab for processing.
- ⦿ Each participant is then directed to the t-shirt distribution table and leaves the testing site with a t-shirt and a leaflet on where to find free VCT and ARV treatment clinics.
- ⦿ Researchers must be alert to recognizing returning participants to prevent participants from donating more than one sample (e.g. in order to obtain a second t-shirt.)

² As part of our informational efforts during the survey, a large photographic panel provided by Care International on HIV status, disclosure and stigma was displayed in the waiting area.



Box 4 Case Study:

Conducting the Survey:

The survey was carried out at the study sites to minimize inconvenience to participants. Samples were collected at each site from 9am to 2pm on four consecutive days and also from 7pm to 9pm on two consecutive nights, so enabling both night shifts staff an opportunity to participate into our survey. Eligible personnel who volunteered for the survey were asked to provide either one oral fluid sample or a blood sample according to their preference. Both specimen options were provided so as not to alienate survey participants apprehensive of needles or blood draw.

Before the survey, we had estimated that approximately 2/3 of participants would opt for the oral fluid testing option. On the day of the survey, approximately 50% of participants opted to render a blood sample. Annex 3 provides a summary of our survey results.

Samples were collected using the OraSure collection device or through phlebotomy. In the cases when blood was drawn, two vacutainers of 2cc each were collected per volunteer, one for ELISA testing and the other for CD4 testing. Phlebotomists, not professionally associated with the two study sites, drew the blood samples. Each participant was also asked to provide basic demographic information on a brief questionnaire. Information was limited to four demographic variables: gender (male or female); age range (18-24, 25-34, 35-44, etc.); professional level (e.g. medical officer, nurse, allied staff or general assistant); and race (black, colored, white or Asian). These racial categories are the standard census categories in South Africa. No individual linking identifiers such as employee or ID number, name, or address were collected. Samples and questionnaires were deposited in a large container at the entrance to the testing space so that participants could see that the process was genuinely anonymous. Research study staff were available to assist with sample collection and answer questions as needed. (Research staff were also alert to intercept repeat- or ineligible participants.)



Box 4 (continued) Case Study

Oral fluid specimens were stored at room temperature, and blood samples were stored between 10 to 15°C; both types of specimens were transported to the NHLS laboratory in Johannesburg at approximately 2-3 hour intervals, with exception of samples collected at nights, which were handed over to the laboratories with a 9 hour interval. The testing was done at the Contract Lab Services of the National Health Laboratory Services in Johannesburg, a clinical laboratory not affiliated with the hospitals or the researchers. Contract Lab Services of The National Health Laboratory Services in Johannesburg has significant experience in handling large prevalence survey sample volumes and processing these efficiently. Both oral fluid and blood samples were tested using the ELISA HIV-1/2 Antibody Test. Blood samples were then processed further to determine CD4 cell counts.

To determine the participation rate for the survey at each site, employee attendance records were collected for each day/night of the survey to identify employees who were not at work during the three day period. Attendance records were cross checked. Employees who were absent for any reason (scheduled vacations, maternity leave, study leave, sick leave, etc) on all test days or nights were excluded from the analysis.



VII. Data Analysis

At the sample processing lab, sample containers and questionnaires are matched using duplicate bar codes and HIV test results and questionnaire responses are entered into an Excel database.

This Excel spread sheet is then further analyzed by the research team:

- ⦿ Univariate analysis was used to estimate the prevalence of HIV infection in the study population as a whole.
- ⦿ Results of the survey are then stratified into subgroups by sex, age range, race and job level.
- ⦿ CD4 cell counts of HIV positive blood samples are subjected to multivariate analysis to determine demographic predictors of risk.
- ⦿ CD4 cell counts of HIV negative blood samples were used as a population specific baseline.
- ⦿ Both HIV prevalence and CD4 cell count data can be analyzed using SAS software.



Box 5 Case Study

Data Analysis:

HIV test results and questionnaire responses were entered into an Excel database at the laboratory and sent to the lead researcher for analysis. Sample containers and questionnaires were matched using duplicate bar codes. Univariate analysis was used to estimate the prevalence of HIV infection in the study population as a whole. Results of the survey were then stratified into subgroups by sex, age range, race, and job level. Chi-square tests were used to determine differences between subgroups in bivariate and multivariate analysis. CD4 cell counts of HIV positive blood samples were subjected to multivariate analysis to determine demographic predictors of risk. Both HIV prevalence and CD4 cell count data were analyzed using SAS software.



VIII. Dissemination of Results

In keeping with the open and rigorous approach to the survey, plan to disseminate your results to all the stakeholder groups that participated in the research process.

This can be managed by scheduling brief presentations during regularly planned meetings. “Piggybacking” on other meetings lessens the research team’s effort to summon workshop participants and lowers costs.

It is important to disseminate the research results as quickly as possible to institutional CEOs and other officials, particularly in Government, who are likely to be approached by local media.

Have a brief media (press) release available. It is important the results be disseminated accurately and in the correct context. This is particularly important to preserve and honour the surveyed workforce, since erroneously interpreted or printed information could offend and affect the workforce as a whole.

Dissemination strategies should include a report summary and thank you notice posted throughout the surveyed institutions or similarly annexed to pay slips.

Dissemination should be focus towards policy makers, HIV at the workplace commissions and other workforce representatives. Dissemination strategies should include academic and/or sector specific publications, workshops and conferences.

© The Lessons We Learned

We have listed below what we found to be critical steps in ensuring high participation rates in our prevalence survey. We have also listed areas that need particular attention while planning and executing the prevalence survey.

Important Steps:

Extensive and inclusive involvement of stakeholder groups is critical; without their “buy-in” to this kind of survey, workers will feel at odds with the researchers, supervisors and/or workers unions etc. and fail to participate.

During the survey, we found that there was much interest by participants in receiving a complementary gift, which in our case was a t-shirt inscribed with a small “Workers Wellness” logo. As soon as participants received their t-shirts, they put them over their uniform and went back to their work stations. This served to remind co-workers that the survey was taking place, and to motivate co-workers to participate in the survey seeing that others had overcome initial reservations.

Weeks after the survey and after the survey results were disseminated, participants still wore their survey t-shirts to work. Feedback from health workers revealed that the survey had paved the way for discussions among co-workers about topics related to HIV at the workplace. The onsite HIV clinic at the research hospitals experienced a significant increase in hospital workers presenting for VCT and ARV therapy.

© “Potential Pitfalls”

Managerial/Administrative Hierarchies:

Respect managerial hierarchies within the workforce to be researched. Remember to ask for permission from each level of management to approach workers, disseminate information, carry out the survey and use available infrastructure etc. Although you may have ethics committee approval to carry out such a study, managers need to be informed at all times of what occurs within their jurisdictions. Opposition from managers to your research can severely affect participant turn-out to the survey, affecting the validity of the results.

Sample Processing:

To avoid suspicion that samples might be somehow marked to later link participants and HIV results, survey participants were handed their blood or oral fluid samples so that they could place their specimens with the demographic data sheet and barcodes in the collection bin.

Temperature Control:

It is imperative to discuss the measures that will be needed to maintain the biological samples at the optimal temperature. Oral fluid samples are less complex, since they can be stored at room temperature and be processed even days after the survey. CD4 cells decay quickly and the longer the time between drawing a blood sample and processing, the lower the CD4 cell counts will be, clearly affecting the reliability of the results.

Chain of Custody of Samples:

It is imperative to preserve the integrity of the samples until they are processed at the lab. Designate a “samples custodian”; responsible at all times for all samples collected. This will minimize accidental losses of samples, temperature mismanagement and possible tampering with the survey specimens.

CD4 Cell Count Analysis on HIV Negative Samples:

By and large, medical literature has defined normal CD4 cell ranges, the same that are used on a daily basis through out the world as reference points. But there have been reports of particular cultural and/or racial groups possessing marginally different “normal ranges”. In our study of South African health care workers, we felt that their environmental exposure to infectious diseases and racial composition warranted extracting the CD4 cell counts of HIV *negative* participants. This way we could determine a population specific HIV negative CD4 cell range useful for internal comparison to CD4 cell counts among HIV + samples. This is an optional effort, but should be considered if funding allows.

Annex 1:

© Informational Letter And Or Poster

Dear co-worker, we would like to invite you to participate in our research HIV prevalence survey!

It is very important to us everyone involved should be informed about the survey and what we aim to accomplish through it.

Questions? Here are some answers...

Q: What is an HIV prevalence survey?

It is a scientific way to find out how many people in a group are HIV positive or negative. Each participant can voluntarily and anonymously provide a saliva sample or a blood sample, which is then tested for HIV antibodies. We do not assess the HIV status of any individual.

Q: Are the results confidential?

No names, ID numbers or identifiers will be collected, nor information on the department or ward worked at, the day or time the person volunteered, the clothes the person was wearing etc). This is to ensure that finding out an individual's HIV status not possible. For those who wish to know their HIV status we have several independent, confidential referral options for VCT and treatment. Individual survey results are confidential!

Q: Who can participate?

So that no one feels left out or specially selected to participate, we have asked ALL health care workers at both hospitals to volunteer for the survey. This will include all professional staff (Medical doctors, nursing staff, and allied staff) and non-professional staff (general assistants).

Q: Why is everyone's participation is so important?

The more people take part in this survey, the better and more reliable the results.

Q: How do I benefit from participating in the survey?

We believe that events like these will help inform about HIV-related issues and decrease HIV-associated stigma at the work place. As part of the prevalence survey we offer information on independent VCT and Antiretroviral Treatment sites for those who wish to embrace the opportunity to find out their HIV status.

Q: What will happen on the survey days?

A survey booth will be set up over four to five days at each hospital. At any time during your working day you are encouraged to voluntarily come and give us a blood or saliva sample and fill out a brief anonymous questionnaire. The processes will take approximately 20 minutes, for which management has given their approval.

As a token of our appreciation,
all survey participants will be given a t-shirt!

Q: What if I refuse to participate?

Since the survey is voluntary, you are free to refuse to participate with no consequence whatsoever.

**The research team hopes to count on your assistance in making
this prevalence survey a success.**

**Together, we can help protect fellow workers from stigma
And make our workplace a healthier and friendlier place.**

© Sample Prevalence Survey Questionnaire

Prevalence Survey Questionnaire	
Thank you for participating in this voluntary study. You may refuse to participate. It is completely anonymous. Your results are confidential.	
Please help us by filling in the following form:	
1. Sample barcode:	
Please check the appropriate option:	
2. Job Category:	2.1 Medical Doctor 2.2 Nurse 2.3 Allied staff 2.4 General Assistant
3. Gender:	3.1 Female 3.2 Male
4. Age group:	4.1 18-24 4.2 25-34 4.3 35-44 4.4 45-54 4.5 55 or older
5. Race:	5.1 African/Black 5.2 Colored/White/Asia

© Summary of Survey Results

Helen Joseph and Coronation Hospital HIV Prevalence and CD4 Cell Count Survey, February 2005.

- © Of 1813 health workers, 1522 (83.9%) volunteered for testing and 1493 provided complete demographic data.
- © Of these, 788 (53%) provided blood samples and 705 (47%) provided oral fluid samples.
- © Overall prevalence of HIV was 11.5%.
- © By job level, prevalence was highest among student nurses (13.8%) and nurses (13.7%).
- © Females had a 50% higher prevalence than males (12.0% vs. 7.9%). The highest prevalence by age was in the 25–34 year group (15.9%). 75 of 172 HIV-positive subjects (44%) provided blood samples for CD4 testing.
- © 18.9% of the HIV-positive participants had CD4 counts below 200, and 45.5% had CD4 counts below 350.

If you have further queries, please contact our research team:

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