

IBBS Toolbox

Using results

The Toolbox provides guidance on how to interpret the valuable data collected throughout the survey, how to write a report and disseminate the findings to key stakeholders in the community. Once the data has been interpreted and analyzed, the last step is to use the findings to determine what interventions are best suited to the needs of the key population.

Contents

Interpreting and disseminating results	501
Publications	510
Using evidence to inform HIV prevention interventions	521
Resources and references	529



UCSF GLOBAL HEALTH SCIENCES

Improving health and reducing inequities worldwide



**Using
results**

**Interpreting and
disseminating
survey findings**



UCSF



UCSF GLOBAL HEALTH SCIENCES

Improving health and reducing inequities worldwide



Interpreting and disseminating survey findings

This section focuses on interpreting and disseminating findings from a completed IBBS. Dissemination ensures that survey findings are used to inform public health practices and policies, especially to improve the lives of key populations.

This section includes

- Conducting data interpretation and writing workshops
- Conducting local dissemination events
- Refining products and finalizing IBBS reports
- Creating policy briefs

GSI provides technical assistance (TA) in implementing IBBS. Please [visit our website and contact us](#) for trainings and TA.

Contents

Data interpretation and writing workshop.....	503
Local dissemination events.....	503
Presenting findings.....	504
IBBS reports	504
Sample outline for an IBBS report	504
Policy briefs.....	506
Appendix A: Sample dissemination brochure	507
Appendix B: Sample matchbook dissemination tool.....	509



The goal of an IBBS, ultimately, is to guide HIV prevention planning and resource allocation and to inform the development of effective HIV prevention interventions for key populations. That goal cannot be accomplished without a strong dissemination plan for survey findings. Dissemination plans should respond to the needs of stakeholders who have an interest in the results of the IBBS and should take into consideration

- Who is interested in the IBBS and would want to know about the results?
- How might results be used and who will be using them?
- What is the level of expertise of the audience?

Data interpretation and writing workshop

Once the survey has been completed and the data collected and cleaned, they should be analyzed and interpreted by the survey team. We recommend an effective way to do this by holding a data interpretation and writing workshop. The workshop can last from five to ten days and should include members of the survey team, from field staff to data analysts to survey investigators. It is important to include a variety of members; for example, COWs or counselors may have important insight on how participants interpreted questions that can add to data analysis.

To prepare for the workshop, the data must be cleaned, analyzed and displayed in working tables. The main goals of the workshop are to produce an outline of a draft report, preliminary results and recommendations and dissemination materials. The specific objectives are

- Review the theoretical foundations (and limitations) of the data using RDS or TLS
- Become familiar with the variables collected during the IBBS, with particular focus on variables relating to the objectives of the survey
- Understand the relationship between raw data and weighted data
- Interpret the results of the variables
- Identify additional variables of interest to be analyzed for the purposes of the report or scientific manuscripts

Interpreting and disseminating

- Develop the first draft of the IBBS report
- Develop the first draft of the preliminary results materials (slides, brochure, etc)
- Agree on a work plan for the completion of the report

Local dissemination events

Findings of the IBBS need to be reported directly back to the communities in which the survey was conducted and other stakeholders. This helps “close the communication loop” of the survey process, promotes local understanding and usage of findings, and builds goodwill for current and future research projects. The objectives of a local dissemination are to present the earliest possible relevant findings, answer questions and take suggestions.

- Conduct dissemination events at an easily accessible location
- Allow 60-90 minutes, with at least one-third of the time set aside for discussion
- Provide refreshments
- Have plenty of copies of any dissemination materials
- If a survey is conducted in various cities, decide if you need separate dissemination events for each location
- Invite a variety of participants, including
 - Local stakeholders, including KII participants
 - Organizations that helped with recruitment
 - Field staff who conducted the survey
 - Venue owners and management (for TLS surveys)
 - Key population members, including survey participants willing to attend the event
 - Local NGOs that work with key populations
 - Other community leaders, such as religious, police or political leaders
- Have interpreters for local languages. You may wish to produce materials in different languages.
- Collect names and contact information for audience members who are interested in receiving finalized materials and resources



Interpreting and disseminating

Presenting findings

- For the dissemination event, prepare a simple slide presentation that describes background, method, and preliminary main findings in lay terms
- Prepare brochures or flyers that visually present the data, and that audience members can take with them. Remember to clearly mark the materials as DRAFT. (See *Appendix A* for an example of a brochure)
- Types of preliminary data to be presented include concise summaries of the main objectives such as
 - HIV prevalence
 - Associated variables that relate to the objectives of the survey
 - HIV prevalence among different age groups
 - Percent who had an HIV test in the last 12 months
 - How many people had multiple partners
 - Percent who used a condom at last sex
 - Percent who accessed health services in the last 12 months
- Include initial recommendations. This often leads to a fruitful discussion with community understanding and support of the results. Moreover, the discussion can elicit other recommendations.
- Be creative in how data are disseminated. See *Appendix B* for an example of matchbook condom packages that were designed with results of the survey on one side and a prevention message on the other.

Following the local dissemination events, the preliminary brochure can be finalized for wider distribution in advance of the final report and serve as a succinct summary of the final report.

IBBS reports

A report is the most common output of an IBBS survey. Although there is no single format of a report that is universally used, there are certain sections that should be considered for inclusion. The specific template, organization, and content of a report are likely to be driven by the needs of the audience and intended use of the report.

At the data interpretation and writing workshop, everyone should agree to the scope and outline for the report.

Aim to have an IBBS report available within 6 months of the end of the survey. Once published, the report can be posted online so people can use the information as soon as possible for program planning. Before publication, the report may need to go through various institutional clearances. The executive summary is a key section, as many people may skim the report or only read the executive summary.

Sample outline for an IBBS report

1. Cover page
 - Should be attractive to target audience, culturally appropriate, recognizable, branded, and should make clear what is inside
2. Acknowledgements
 - List out the contributions of individuals, as well as the people and communities to which you owe gratitude, including funders, implementers, community members, etc.
3. Table of contents
 - If using Microsoft Word, there is a built-in feature which will automatically create a table of contents based on the layout and headings of the contents in the report
4. Abbreviations/acronyms
 - It is best to constantly update this list each time you use an acronym or abbreviation while writing
5. Foreword
 - Often this is written by a senior individual who has significant influence to lend importance to the findings
6. Executive summary
 - This should include, at the least, condensed versions of the following
 - Background
 - Survey objectives
 - Methods
 - Results/findings



- Conclusion
- Each of the sections above should aim to be about a paragraph, with an overall length of less than two pages printed. The findings should mirror the organization of the results section in the body of the report.
- Only present in the executive summary what can be found in the main report; it is not the place to introduce new points, data or recommendations

7. Introduction/background

- This section should include summaries of the main points in the protocol
 - A brief summary of the HIV epidemic (or other public health issue being studied by the IBBS survey)
 - A brief summary of the existing data relevant to the population(s) studied by the IBBS
 - The local context in which this IBBS was conducted
 - The gap(s) in the data and the rationale for the IBBS survey that was just conducted
- This section should be concise and does not have to be exhaustive, but should give the reader a quick overview in order to have appropriate context for understanding the purpose and goals of the IBBS efforts

8. Objectives

- This should be a simple list of the IBBS survey objectives, which can be cut and pasted from the protocol

9. Methods

- This should include the following key points and can be cut and pasted from the protocol
 - Survey design
 - Subjects (e.g. inclusion/exclusion criteria, timeframe, methods of selection)
 - Sampling design
 - Survey procedures
 - Staff training

- Measurements (e.g. predictor and outcome variables, questionnaire,
- Data analysis (e.g. what kinds of analyses were conducted, what software was used, what statistical tests or parameters were used)
- Ethical considerations (e.g. approval by ethical review committees, special considerations for population(s) under study) including privacy and confidentiality protections in place)

- Describe how you did the survey with enough detail so the reader can ascertain strengths and weaknesses.

10. Results

- Results should be organized into sub-headings
- Have a summary of key findings, in bullet form, at the beginning of the section; this could be in the form of a text box; subheadings can have their own key findings boxes at the beginning of sub-sections
- Keep language and presentation as simple as possible: short words, short sentences, short paragraphs, short chapters
- Use a different colored text box to highlight key findings.
- Try to put most important messages at the beginning, and/or at the end. Similarly, try to get the complete message onto the same page, rather than splitting it across pages.
- Do not discuss findings here; stick to the facts and data as they are presented in tables
- As a guide, when there are three or fewer points to make, use text; when there are three to six main points, use a figure; when there are six to ten or more key points, use a table
- For tables and figures, make sure each one has a meaningful, descriptive title
- For tables, rows and columns should be labeled clearly and concisely, units of measure should be clear, and try to keep the same denominator throughout the table.



Interpreting and disseminating

Each table and figure should have a short description of the findings that are presented; this should be written text that talk about specific numerical findings. However, this is not the place for discussing the interpretation of or limitations of the findings. Those topics are for the conclusions section.

11. Conclusions

- Discussion of findings
 - State the single most important finding as succinctly and accurately as possible (e.g. the answer to each study objective), then expand the single sentence into a paragraph. Then talk about additional findings.
 - Consider any unexpected findings (e.g. findings that may contradict other studies, other anecdotal information, or conventional wisdom) and discuss them
 - Do not discuss findings that are not in the report
 - Avoid over-interpreting the data
- Limitations
 - Every survey has limitations; consider potential biases, the execution of the survey, and any unforeseen issues that may have arisen
 - Do not end on a negative note; important to go back to the key take-home messages despite the limitations
- Recommendations
 - Consider public health policy and practice implications with clear recommendations
 - Consider clinical practice implications
 - Consider future research implications
 - Leave the reader with a clear take-home message and the way forward

12. References

- It is usually not necessary to include an exhaustive literature review for every report; usually 20 references are sufficient
- The introduction/background section is likely to have a lot of references, but the

findings/results section should not have any references

13. Appendices, including survey instrument

Policy briefs

Short and simple policy briefs can be developed to inform ministers, legislators, politicians and other policymakers who make funding and resource allocation decisions. The purpose of the policy brief is to convince a particular audience of the urgency of a current problem and recommend an action. Policy briefs are non-academic, focused, easily understood, and suggest a feasible course of action.



Appendix A: Sample dissemination brochure

Heading here

Subheading here

Am cupidoque aliquam portepudeturum similia nduriant quidetur, sum nimis, qui.

Figure 8: Figure title here



Subheading here

As aut veritatur resende bitaque ex nare voluptas exceptur seoset, tem aut quat arum etur edbae ex ad qui minimus sit volestipiani nempiam et des expliquaria.

Figure 9: Figure title here

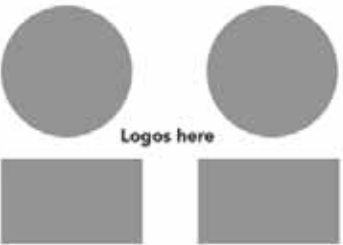


Heading here (back panel)

- Et duandens voluptat intat hanciam illicident et ens inhiis gentia core andhivim rem doluptat tem exeris. Et officae conum quem ipsa sit, tectur, Con ea voluarectas.
- Bor moluptur. Haritia apenat aute consequit etuacia speiest dolupta tacinim qui quaeetam nra part et voluptas et, omniaa duclatemosi dte maxime liquis etuade et laur simpe volestaeetemosi dte maxit voluptas iciletemqui tem exa vnde volupta.
- Qi xindut, coremodi omnihi ilabor moluptur, Haritia apenat aute consequit etuacia speiest dolupta tacinim qui quaeetam nra part et voluptas et, omniaa duclatemosi dte maxime liquis etuade et laur.

Alacut avthica andha organizatione involved shuffa funding Voluam penempons et faccequi doluptent nempont evulengessum sunt maximet arum qui quaeetam nra part exatet et, omniaa duclatemosi dte maxit sequitae la con ne pte cor alla xindut. Utetur tulindear umquae ad moluommat nra xam hanciam exilla et et repro ea ellitona veritae et et etur po liquis etuade et nre repro explatatum nra magn inoati, con gratum clatus eum.

Logos here



**cover photo/
graphic here
(front panel)**

**Title here disquae pudantius
minciumqui sus aut fugit
tatem repellupta et ut maximi**

Milita cuplendum conedist volor rerspis non corepud seperemo ommolupid mo mills et labores esciet volorio te molamoris quis quamus aut que moluptas am ius, qui dem vit, que landae veliquatem doluptatem faccollaut.

Ipsum ute nectae que conedipsam nesciate corem limpor autatem velles excerum rechiur, tempor aut hit explit ipsunt! aeperi dicia dolm remporu ptatatusdam aut que venecto cdam, que pre nus et rerem quae cus ut male eum ugitis magnihilit velenisa conem es rectus. ilam simet et omnis et ad ut imos deliquam.



Heading here

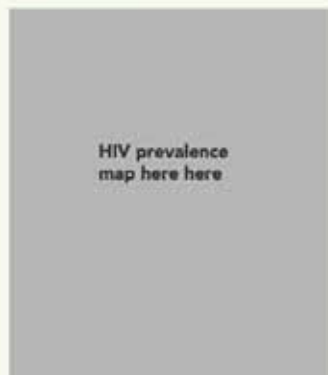
Nam necula erionet esse sit ut iniatut accipit iusto bem.

Figure 1: Figure title text here



Xenipet luntin re et siue item as aliqui rem quid quidul, qui porrexit omni que molest volupta done aplinu lupemet peratore nichilii sequi dia et at ricki paribus, tet endisse. Latursi nonessincit ut adion connis earumque res

Figure 2: Figure title text

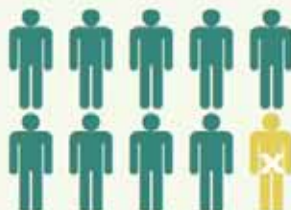


Be qui quibus aliquam fugit eum apiti blabore te es eligend algenim quiti moxent resit pore estum conserit pore estum conserit sapient doioise num et quias eum as ni asint fuga.

Subheading here

Tem voluptaque cum atiane ndicis maxime enim, quatas dulcinensibi le rest as ration prest.

Figure 3: Figure title text



Pudi rem, tam neequuntor reprovitat audanto rehert a voluptatem repratis.

Figure 4: Figure title text here



Heading here

Subheading here

Tem neequuntor reprovitat audanto rehert a voluptatem repratis. Uoin sin moras alium laborer clienta consano mox viciotaquam au.

Figure 5: Figure title text



Subheading here

Be qui quibus aliquam fugit eum apiti blabore te es eligend algenim quiti moxent reprovit sapient doioise num et quias eum as ni asint fuga.

Figure 6: Figure title text



Sum dui ne pa quaepe el exquibude connis aliquas nam qui rem revidi rem, tam neequuntor reprovitat audanto rehert a voluptatem repratis.

Figure 7: Figure title text





Appendix B: Sample matchbook dissemination tool



Using
results

Publications



UCSF



UCSF GLOBAL HEALTH SCIENCES

Improving health and reducing inequities worldwide



Publications

This section focuses on creating a scientific manuscript advisory panel (SMAP) to promote the development of conference abstracts, posters, and ultimately peer-reviewed scientific publications based on the data collected through IBBS.

Writing and publishing of scientific manuscripts in scientific journals allows researchers to share findings with the larger community of researchers, scientists, and audiences who search and read scholarly journal articles. Moreover, if funding is obtained from certain agencies, such as the National Institutes of Health (NIH), there may be an expectation from the funder to publish work in scholarly journals.

Although there is no single way to write a scientific manuscript, the process for writing manuscripts and publishing findings in a scientific journal are driven by some commonly accepted best practices.

This section focuses on the processes involved in decisions concerning IBBS publications, rather than on the specific content and form required by scientific journals. This section includes

- Descriptions of how to form and run a SMAP
- Sample data use and concept proposal forms

GSI provides technical assistance (TA) in implementing IBBS. Please [visit our website and contact us](#) for trainings and TA.

Contents

Scientific manuscript advisory panel	512
Roles and responsibilities	512
Members	512
Guidelines for publications, authorship, and clearance	512
Publication guidelines	512
Concept proposal process	512
Assigning appropriate credit in the acknowledgments section.....	514
Final review	514
Submission of final published abstracts, papers and presentations.....	514
Resources	514
Appendix A: Data use agreement form	516
Request of IBBS data	516
Appendix B: IBBS concept proposal	518
Appendix C: Evaluation of the IBBS concept proposal	519



Publications

Scientific manuscript advisory panel (SMAP)

The purpose of the IBBS SMAP is to promote the development of presentations and manuscripts based on the data collected through IBBS.

Roles and responsibilities

- Create guidelines for authorship procedures for abstracts, presentations, and papers
- Accept solicitation of concepts for manuscripts and conference abstracts from institutions and individuals
- Review and approve initial abstract and manuscript concepts before substantive work is initiated and
 - Review the concept to ensure the idea is scientifically sound
 - Suggest (but not require) content and direction of abstracts or papers
 - Avoid duplication
- Ensure authorship guidelines are followed for abstracts, presentations and papers which are reviewed by the panel
- Ensure authors submit abstracts, presentations and manuscripts for appropriate institutional review as required

Members

Up to two members will be appointed by the following organizations:

- [INSERT Organization I]
- [INSERT Organization II]
- [INSERT Organization III]

The SMAP will participate on conference calls at least quarterly to determine the status of proposals submitted for review and to provide advice on priorities. More frequent meetings may be needed initially as the committee establishes procedures under which it will operate. The SMAP will review abstracts, manuscripts, and reports prior to their submission for any needed clearance.

The results of the SMAP deliberations will be shared via distributed meeting minutes. This will serve to inform areas and potentially

reduce duplicative proposals. The SMAP will be responsible for resolving any proposals that are duplicative or have substantial overlap.

Guidelines for publications, authorship, and clearance

The protocols for the IBBS require the creation of the SMAP to ensure timely and equitable access to the results of the surveys. It is the responsibility of the SMAP to facilitate the analysis and dissemination of IBBS data according to the publication guidelines outlined below. These guidelines have been developed to assist authors in preparing research products. Such research products include, but are not limited to, abstracts, presentations, and journal articles from analysis of data from the aforementioned surveys. The primary purpose of this document is to ensure that the data collected by the IBBS are disseminated and that all persons involved can fairly participate in the process of publishing findings.

Publication guidelines

The goals of these publication guidelines are to ensure that

- Findings resulting from analyses conducted on IBBS data are of the highest quality and are presented and published widely and promptly
- Reports developed from IBBS data (including design, analysis, and writing) are developed in a collaborative fashion
- Data presented in reports adheres to the confidentiality provisions that have been outlined in the institutional review board protocol approvals

Concept proposal process

Submission of concept proposals

Organizations associated with the IBBS shall follow all the procedures as identified for IBBS Investigators until the databases become public domain.

All IBBS Investigators wishing to analyze IBBS data must submit a data use agreement form (*Appendix A*) and develop a concept proposal. All analysis



proposals must be outlined in detail using the IBBS concept proposal template (*Appendix B*) and emailed to the SMAP at [*INSERT email such as CountryXSMAP@gmail.com*] and proposals will be logged into tracking system. The purpose of this review is to prevent conflicting or overlapping products, to ensure that priority analyses are conducted, and to ensure appropriate use of the data.

The primary author will designate a writing team and specify a preliminary timeline for completion of the project. Membership on the writing team should reflect the contributions of the individual investigators to the design, development, and implementation of the IBBS protocol as well as the interpretation and analysis of the IBBS data. In general, authors should provide at least three weeks for the SMAP to review their proposals and information products.

Evaluation of concept proposals

The primary author should submit the concept proposal to the SMAP at [*INSERT email such as CountryXSMAP@gmail.com*]. The SMAP will log in the concept proposal on the IBBS analysis list on the SMAP drop box. Within three weeks of receiving a proposal, SMAP members will give feedback to the proposing author about whether the project is an appropriate and acceptable use of the data (*Appendix C*).

The decision whether to approve, reject, or defer for more information, will be made by consensus.

Expiration of concept proposals

IBBS investigators proposing to analyze IBBS data should submit concept proposals and conduct analyses on only as many topics as would be reasonable for him/her to complete to the advanced draft stage within 9 months of being notified that the proposal is approved. First authors are asked to be realistic about their workload and generous with other potential first authors in making proposals. Proposed projects which do not reach the advanced stage within 9 months of proposal approval will have to be proposed again to the SMAP. The SMAP will consider assigning the analysis to a co-author if completion within an appropriate timeframe cannot be reasonably expected, or if the rate of

progress made by first authors is not consistent with completion within the agreed upon timeframe, or if another proposal may include the specific topic.

Authorship

The criteria below for determining who qualifies for authorship are based on the uniform requirements for manuscripts submitted to biomedical journals, developed by International Committee of Medical Journal Editors (ICMJE) and last updated October 2004 (www.icmje.org/).

Determining who qualifies for authorship

- Authorship credit should be based on three conditions, *all of which* must be met
 1. Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data
 2. Drafting the information product or revising it critically for important intellectual content
 3. Final approval of the version to be published
- Acquisition of funding, general supervision of researchers/authors, or review and approval of an information product, by themselves, *do not* justify authorship
- All persons designated as authors should qualify for authorship, and all those who qualify should be listed. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. At least one author, usually the first, should take responsibility for the integrity of the work as a whole, from inception to publication/distribution.

Order of authorship

Order of authorship should be a joint decision of the coauthors and according to the criteria listed below. Author order should be discussed early and revised as needed. Authors should be prepared to explain the rationale for the order in which authors are listed. The total number of authors will be limited to the number which the identified journal will accept, or will be negotiated with the journal. In some cases it may be necessary to have a larger



Publications

group authorship including members of the writing team in a footnote on the title page.

- **First author:** First author shall be the investigator who takes the most responsibility for the specific product, based on the genesis of the idea, the conduct of analysis, and the actual writing of the abstract, manuscript or report. Consideration also may be given to intellectual contributions to protocol design and implementation.
- **Additional authors:** Additional authors must have participated sufficiently in protocol development or implementation, in the analytic design or interpretation of the findings, or in the preparation of the abstract, manuscript, or report to assume public responsibility for the content. In addition, all authors must be able to defend the analysis and interpretation of the protocol in a public forum. Finally, all authors must contribute substantially to conception and design, or analysis and interpretation, as well as drafting or revising of the abstract, manuscript or report for intellectual content.
- **Order:** The sequence after first author broadly reflects relative contributions of note. The first three authors generally receive more recognition. The last author is often the most senior researcher or overall principal investigator. Second to last author is sometimes considered co-senior.
- **Acknowledgments:** All publications should include a statement acknowledging IBBS staff and funding source. Each journal may have additional requirements.

The first author should specify a deadline for the receipt of comments, and it will be the responsibility of secondary authors to provide comments by that deadline. Non-response will be assumed to signify approval of the draft, and may result in a change of listed authors.

Assigning appropriate credit in the acknowledgments section

An acknowledgment section should recognize contributors who do not meet the criteria for authorship. A more specific heading may be used, such as “members of the response team” or “participating investigators,” and the functions or

contributions described—for example, collected data or provided and cared for survey patients. All persons acknowledged must give written permission to the lead author, because a reader may infer their endorsement of the data and conclusions. Financial and material support should be acknowledged.

Final review

All authors should have the opportunity to review any reports on which they are listed prior to their presentation or publication. Co-authors will have three weeks to review and provide comments or risk forfeiting co-authorship. The first author of an abstract or paper should provide all authors with a final edited copy of the abstract or paper as submitted to conference organizers, journals, etc., with the date and place of submission noted. These unpublished abstracts and papers should not be distributed to others or released in any way until they are presented or published.

A bibliography will be maintained on a shared SMAP database and a copy of the accepted abstract, manuscript, or presentation will also be available.

Submission of final published abstracts, papers and presentations

In order to ensure that the panel has a comprehensive picture of what has been published and presented regarding the surveys, first authors shall send the SMAP a copy (or link to) the final, accepted versions of any articles, papers or presentations that are accepted for publication or presentation.

Resources

- Strengthening the reporting of observational studies in epidemiology (STROBE) is an initiative that numerous scientific journals have adopted. STROBE has established a checklist of items that should be included in scientific articles that describe research, especially cross-sectional studies, which are what a majority of IBBS studies are. STROBE can be found at www.strobe-statement.org/index.php?id=strobe-home



- The International Committee of Medical Journal Editors (ICMJE) has written guidelines on authorship that are commonly accepted as best practices. ICMJE guidelines can be accessed at www.icmje.org/ethical_1author.html
- An example of a published scientific paper on overall findings from an IBBS study that used RDS methods: www.ncbi.nlm.nih.gov/pubmed/19662523
- An example of a published scientific paper on overall findings from an IBBS study that used TLS methods: www.ncbi.nlm.nih.gov/pubmed/19854703



Appendix A: Data use agreement form

Request of IBBS data

The purpose of this form is to make a request for data from the integrated behavioral surveillance surveys (IBBS) and supporting documentation. The use of this data is regulated by memorandum of understandings and research protocols between *[LIST all institutions involved]*. Existence of this document indicates that the Institutional Review Boards granting approval for the survey have also approved of third party use of the data under conditions governing respectful, responsible, and ethical research. This form is to be filled out by any investigator or researcher requesting to use the data. All requests for access to the data and supporting documents will be reviewed by the IBBS scientific manuscript advisory panel made up of representatives from the organizations listed above.

The requirements set forth in this document cover the person requesting the data, herein referred to as the “requestor,” and any other people making up his/her research team.

Given the issues ethical, responsible, and respectful use of data, the requestor agrees to

- **Limit presentation of quantitative results to aggregate statistics**
- **Use TLS specific data analysis methods when appropriate**
- **Use these data only for analysis purposes and not take actions to identify individuals or institutions**
- **Present all data and results in such a way as to prevent deductive disclosure of individuals**
- **Not share data with others or used beyond the purpose(s) outlined above without requesting and receiving approval from the IBBS scientific manuscript advisory panel**
- **Ensure data security including storing survey datasets on password-protected computers and not giving access to data sets and data print outs to people outside the research team**
- **Alert the IBBS scientific manuscript advisory panel of any mistakes made in imputed identification of persons**
- **Communicate any publicly available publications or reports resulting from the analysis to the IBBS scientific manuscript advisory panel (please see the contact below)**
- **Acknowledge the implementing organizations, in any publications, presentations or reports, out of respect for their intellectual contributions**
- **Include the standard funding acknowledgment statement**
- **Understand that the data are being released ‘as is’ and only limited documentation exists**

Failure to comply with these terms and conditions will result in future exclusion from access to other data resources available from the IBBS scientific manuscript advisory panel and may result in further disciplinary action.

Should you have questions regarding this agreement please contact the IBBS scientific manuscript advisory panel: *[INSERT contact information here]*

**Please provide the following information**

Contact information. The following contact information of the requestor of this project is required.

Name:

Organization:

Address:

Telephone:

E-mail:

Request date:

Statement of purpose. Please describe the proposed use of the data including the primary research question/hypotheses/aim and the description of analytic methods. If there is an existing proposal or study protocol, please submit it with this form and only provide a brief summary below (if more room is needed, please attach additional pages).

Statement of familiarity with TLS data analysis methods: Please provide any information about the requestor's familiarity with TLS data analysis and any technical assistance that the requestor would need to have in order to conduct his/her analysis of the IBBS data correctly using TLS methods.

Certification by requestor: By submitting this application, I (the requestor) certify that the information provided above is true and I agree to the data use requirements listed above.

Signature of requestor

Date



Appendix B: IBBS concept proposal

- Working title of the project
- Lead investigator
- Date submitted
- Type of proposal (i.e., population)
- Anticipated product
- Data to be used (type and year)
- Background and public health rationale
- Research questions and hypothesis
- Variables to be analyzed
- Co-authors
- Supervisor for lead investigator (if lead investigator was not substantially involved in the IBBS)
- Target journal/venue
- Methods
- Analytic methods
- Format of results
- Additional discussion description (strengths, limitations)
- Technical assistance needed
- Timeline
- References (basic review of the literature)
- Table shells



Appendix C: Evaluation of the IBBS concept proposal

Date of proposal:

First author:

Title of proposed project:

Type of product:

Date of review:

Name of reviewer:

Evaluation:

- ☐ Accept
- ☐ Accept pending minor revisions
- ☐ Reject

Comments or suggestions (*note: this is a required field if an evaluator decides the proposal should be accepted pending minor revisions or rejected*):

Evaluation criteria

When reviewing concept proposals, the following criteria should be considered

- The research concept or hypothesis is clearly stated and does not duplicate a previously approved proposal
- The public health rationale is provided
- The proposed analytic methods are appropriate and statistically sound
- The proposal is non-duplicative or does not have substantial overlap with another proposal

**Using
results**

**Using evidence to
inform HIV prevention
interventions**



UCSF



UCSF GLOBAL HEALTH SCIENCES

Improving health and reducing inequities worldwide



Using evidence to inform HIV prevention interventions

The purpose of an IBBS, ultimately, is to guide HIV prevention planning and resource allocation and to inform the development of effective HIV prevention interventions for key populations. In this chapter, we present principles and frameworks for the prevention of HIV in key populations. We review using IBBS and other data or methodologies to inform the design of HIV prevention interventions for key populations. In addition, we present frameworks and behavioral theories that provide helpful guidance on intervention development and implementation as well as existing evidence-based intervention that can be adapted to your local context. Together, they represent a foundation for developing interventions that will effectively reduce HIV infections among key populations.

This chapter covers

- The socio-ecological model
- Using IBBS and other data to inform intervention development and selection
- Summary of behavioral theories
- Evidence-based behavioral interventions
- The logic model
- Community HIV prevention planning

GSI provides technical assistance (TA) in implementing IBBS. Please [visit our website and contact us](#) for trainings and TA.

Contents

The socio-ecological model.....	523
Individual or intrapersonal	523
Relationship or interpersonal	523
Community or societal	523
Structural.....	523
Know your local epidemic.....	523
IBBS	523
Literature review	524
Additional formative research	524
Behavioral theories	525
Evidence-based behavioral interventions.....	525
The diffusion of effective behavioral interventions (DEBI)	525
Compendium of evidence-based HIV behavioral interventions	525
Replicating effective programs plus (REP+) ..	526
Logic model to guide intervention implementation and evaluation.....	526
Community HIV prevention planning.....	527
Organizing community planning.....	527
Resources	528



The socio-ecological model

HIV-related behaviors and outcomes are influenced by a range of factors, some associated with individual characteristics while others are beyond the individual-level. The socio-ecological model provides a useful framework to identify and address these factors at four main levels: individual or intrapersonal, relationship or interpersonal, community or societal, and structural (Figure 1).¹

Individual or intrapersonal

The individual or intrapersonal level identifies biological and personal history factors that increase the likelihood of becoming HIV infected. These can include an individual's socio-demographics, mental health, sexual behaviors, substance use, and personal trauma or violence. Prevention strategies at this level are often designed to promote attitudes, beliefs, and behaviors that ultimately prevent HIV acquisition or transmission. Specific approaches may include education, building skills to negotiate safe practices, substance use counseling and treatment.

Relationship or interpersonal

The relationship or interpersonal level examines close relationships that may increase the risk of HIV infection. An individual's closest social circle—peers, partners and family members—influences his or her. Prevention strategies at this level may include mentoring and peer programs designed to reduce conflict, foster problem solving skills, and promote healthy relationships.

Community or societal

The community or societal level seeks to identify characteristics of settings that are associated with putting an individual at increased risk of HIV infection. These may include social and cultural norms within a community or neighborhood. Prevention strategies at this level are typically designed to affect the climate, processes, and policies in a given system. Specific approaches may include using social marketing campaigns to change cultural norms or reduce stigma.

¹ US Centers for Disease Control and Prevention. *The Social-Ecological Model: A Framework for Prevention*. [Online]. Available from: www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html

Structural

The structural level looks at large system-based factors that help create an environment in which drives or reduces HIV infections. These factors may include laws, structure of healthcare systems and public health infrastructures. Prevention strategies at this level may include implementing health, economic, educational and social policies that help to address economic or social inequalities in a society.

The socio-ecological model takes into consideration the complex interplay and interaction between factors at all four levels. A comprehensive HIV prevention package should include a continuum of activities that address multiple levels of the model.

Know your local epidemic

The socio-ecological model provides a useful framework to identify drivers of HIV infections among populations at risk of HIV. These drivers differ between and within key populations, and across localities and cultures. Thus, to develop an intervention package that will effectively reduce HIV infections among a key population, we must have a clear understanding of the local epidemic among each key population.

IBBS

IBBS provides an ideal source to understand the local epidemic among a key population. IBBS data allows us to examine important indicators of the local epidemic and to identify key drivers of HIV acquisition and transmission among a key population:

- Prevalence of HIV-related risk behaviors that facilitate HIV infection (e.g., unprotected anal intercourse among MSM and sharing of injection equipment among PWID) and health seeking behaviors that reduce HIV infection (e.g., HIV testing, STI testing and treatment);
- Correlates of HIV infection; correlates of HIV-related behavioral outcomes that are known to be associated with HIV infection and are amenable to change;
- Sub-group analysis that provides insights into segments of a key population (e.g., if gender is significantly correlated with HIV infection



Using evidence to inform interventions

among PWID, we should further examine behavioral indicators separately among males and females as well as identify correlates of HIV infection and other behavioral outcomes among each of these groups).

Although IBBS gives us a close look at the local epidemic among a key population, it may not provide all the information we need to design an intervention package because 1) it is impossible to include every question we want to ask in one survey without burdening participants too much; and 2) epidemics are not static but changing and so are human behaviors. As such, we also need to look into other sources.

Literature review

One such source is the scientific literature or special reports, which do not require additional significant input of financial and human resources but provides valuable data on a wide range of topics. For example, numerous studies across the globe have shown that gay-related stigma and discrimination are significant barriers to HIV testing among MSM.² Thus, although measures of gay-related stigma and discrimination may

² Loren T, Marrero-Guillamon I, Llewellyn A, Aggleton P, Cooper C, Lehman A, Lindsay C. HIV testing among men who have sex with men (MSM): A systematic review of qualitative evidence. *Health Educ Res.* 2011;26:834-46.

not have been included in an IBBS for MSM, these are important variables to consider when designing an HIV testing intervention for MSM. A comprehensive review and synthesis of the literature, including both quantitative and qualitative studies, on a given topic among a key population will not only complement already collected IBBS data but will also inform future IBBS questionnaires. When conducting the review and synthesis, special attention should be given to studies conducted in the same setting or settings that have similar epidemic profile and socio-cultural contexts.

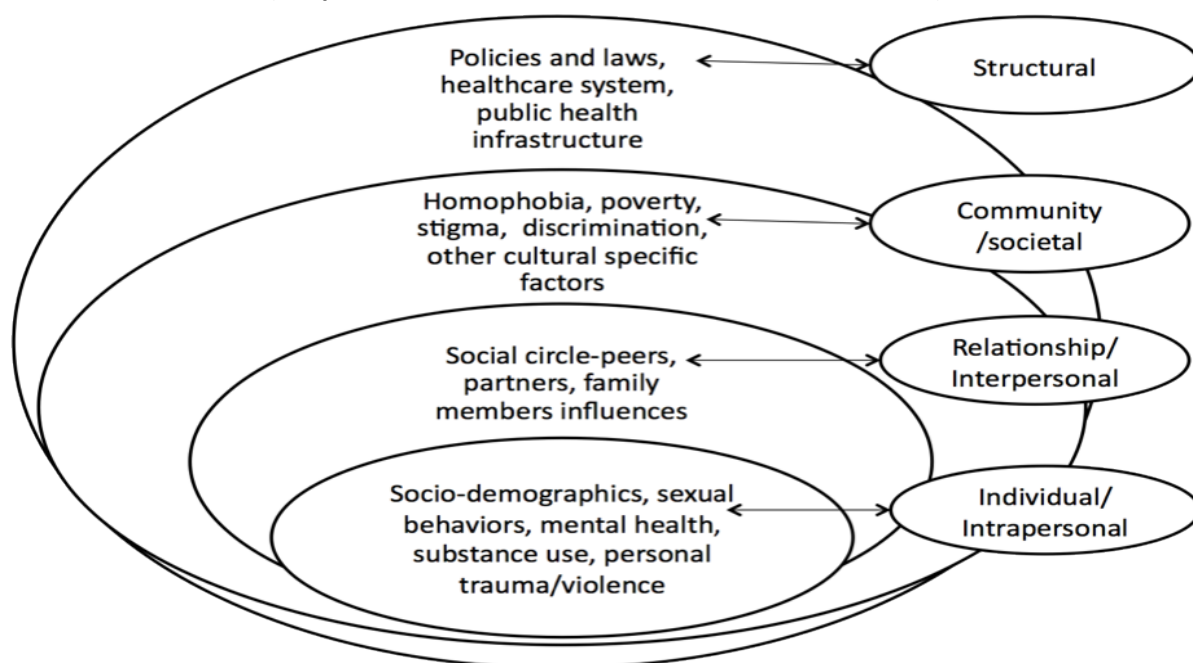
Additional formative research

When there is scarce existing literature and limited IBBS data to inform the design of an intervention targeting a behavioral outcome (e.g., factors influencing linkage to and retention in care among HIV-positive MSM), additional formative research should be conducted.

Formative research is used to qualitatively explore a new topic and to generate theories and hypotheses. Common qualitative methods include focus group interviews, individual in-depth interviews, and key informant interviews.

- Focus group interviews are suitable for exploring general attitudes, beliefs, and norms

Figure 1. Socio-ecological model for HIV prevention (adapted from US CDC Violence Prevention Framework)





toward a topic among participants from a key population (e.g., barriers to HIV testing among MSM)

- Individual in-depth interviews are ideal for exploring topics that are of sensitive and personal in nature, and among certain sub-groups within a key population who are reluctant to participate in group-based interviews (e.g., sexual history and behaviors among HIV-positive MSM)
- Key informant interviews are usually conducted with important community gatekeepers and service providers who have insider knowledge and firsthand experiences with a key population (e.g., pimps for FSWs)

Formative research seeks to understand the questions of “why” and “how.” As oppose to asking multiple choice questions like in a survey, qualitative interviews ask open-ended questions using a semi-structured interview guide. For example, we are interested to know why HIV testing uptake is low among MSM. The interview guide may include questions such as, “why do you think MSM in your community are not getting tested?” “How can we encourage more MSM to get tested?” These questions are intended to generate open discussions and conversations among participants or to obtain detailed personal histories from participants.

Behavioral theories

After we have obtained a good understanding of the local epidemic among a key population including drivers of HIV infection, and have identified HIV-related behavioral outcomes that interventions need to target, we must select appropriate behavioral theories to guide the design and development of these interventions. Behavioral theories help us understand complex human behaviors by breaking them down into components that can be acted upon. They also help program planners better understand the influences of certain behaviors and guide evaluation of interventions. All evidence-based interventions incorporate at least one behavioral theory or model.

Theory at a Glance: A Guide for Health Promotion and Practice by the US National Cancer Institute (www.cancer.gov/cancertopics/cancerlibrary/theory.pdf)

[pdf](#)) provides a glossary of the most commonly applied behavioral theories, which operate at different levels of the socio-ecological model. Theory at a Glance is adapted from the book Health Behavior and Health Education: Theory, Research, and Practice, which provides more detailed descriptions of these theories, including case studies³.

The choice of a behavioral intervention(s) should meet the needs of the key population and address drivers of selected behavioral outcome(s) that an intervention(s) aims to change. Examples of matching theories with intervention components can be found in the next section.

Evidence-based behavioral interventions

Listed below are resources where evidence-based HIV interventions can be found. These interventions have been tested among diverse at risk populations in the US. Some of them can be replicated and adapted for key populations in other settings. When adapting these evidence-based HIV interventions, we must make sure that their format and content are acceptable and culturally relevant to the key populations and that it's feasible to implement them within the local socio-cultural contexts.

The diffusion of effective behavioral interventions (DEBI)

The DEBI project is a US national-level strategy to provide high quality training and on-going technical assistance on selected evidence-based HIV/STD/Viral Hepatitis prevention interventions to state and community HIV/STD program staff. Starter kits and implementation materials are included for each DEBI. www.effectiveinterventions.org/

Compendium of evidence-based HIV behavioral interventions

The compendium lists evidence-based HIV behavioral interventions identified by US CDC's Prevention Research Synthesis through an ongoing

³ Glanz K, Rimer BK, Lewis FM. *Health Behavior and Health Education: Theory, Research, and Practice* (3rd Edition). San Francisco, CA: Jossey-Bass, 2002.



Using evidence to inform interventions

systematic review process and are classified as either best-evidence or good-evidence. These interventions represent the strongest HIV behavioral interventions in the scientific literature to date that have been rigorously evaluated and have demonstrated evidence of efficacy.

Compendium: www.cdc.gov/hiv/topics/prev_prog/rep/resources/initiatives/compendium.htm/

Prevention Research Synthesis: www.cdc.gov/hiv/dhap/prb/prs/index.html

Replicating effective programs plus (REP+)

The REP+ programs are tested, science-based behavioral interventions with demonstrated evidence of effectiveness in reducing risky behaviors, such as unprotected sex, or in encouraging safer ones, such as using condoms and other methods of practicing safer sex. The interventions are translated into everyday language and put into user-friendly packages of materials. These packages are designed, developed, and field-tested by researchers collaborating with community-based partners. The resulting products can guide prevention providers in replicating effective risk-reduction programs in their own settings and communities. www.cdc.gov/hiv/prevention/research/rep/index.html

Logic model to guide intervention implementation and evaluation

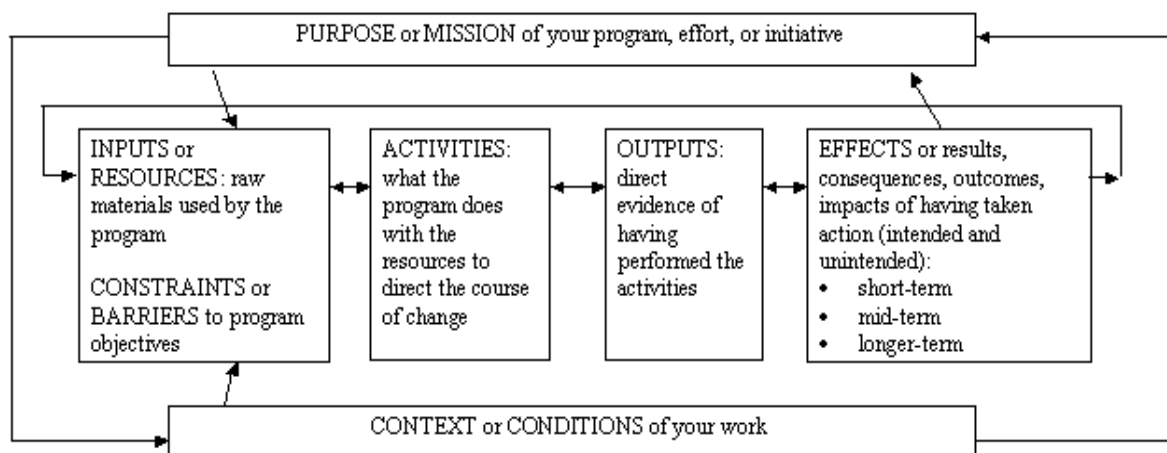
To put an intervention into practice requires thoughtful planning. The logic model is a helpful framework for planning the resources and steps needed for to implement and evaluate an intervention. There are many versions of the logic model, but they have in common inputs, activities, outputs, and effects (Figure 2).⁴ In creating the logic model for your intervention, you can work backwards from the desired effects and outputs to fill in the activities and inputs. You can also map work forwards to map out the steps to an output.

Inputs are the resources and materials at your disposal for your intervention. This can include people, funding, and physical materials. This can also describe potential barriers to your intervention such as regulations or funding gaps.

Activities are essentially the components of your intervention. After evaluating the risk and protective factors in the key population, you can select an intervention or package of interventions. The activities are the steps that will be taken to implement the intervention.

4 University of Kansas. *Developing a Logic Model or Theory of Change*. [Online]. Available from: ctb.ku.edu/en/tablecontents/sub_section_main_1877.aspx

Figure 2. Logic model illustration





Outputs are the indicators needed to understand the impact of the intervention. These can include things like number of people trained, tests done, etc.

Effects are the end results of the intervention, such as lower rates of HIV incidence. It is important to analyze the effects compared with expectations or benchmarks to know whether to change the intervention. These can be short, middle, or long-term effects.

More information and templates for logic models can be found on the CDC website: www.cdc.gov/eval/resources/index.htm#logicmodels

Community HIV prevention planning

One of the key uses of behavioral surveillance data is to inform a data driven process of priority setting for HIV prevention programming. The priority setting process uses available data to rank populations and behaviors to help focus HIV prevention activities on the segments of the population most in need of intervention in the hopes of reducing HIV transmission / acquisition. Local community based priority setting is based on the idea that local decision making with local data is the most effective means to assure maximum impact. Community planning also serves as a bridge of communication from affected communities to those responsible for prevention and care allowing affected communities to share needs and barriers. There are three main tenets of community planning.

Parity

- Parity means that all members in the community planning group (CPG) have an equal voice in voting and other decision-making activities
- Orientation and skill building are provided to ensure participation in community planning

Inclusion

- Inclusion means that the views, perspectives, and needs of all affected communities are included in the planning and delivery of prevention services.

Representation

- Representation means that those who are representing a specific community truly reflect that community's values, norms and behaviors.

The purpose of the CPG is to support broad-based community and stakeholder participation in HIV prevention planning, in order to prioritize populations and geographic areas heavily impacted by HIV, identify priority HIV prevention needs, ensure that resources are allocated appropriately, and identify gaps in the service delivery models.

The major goals of community planning are to improve the effectiveness of HIV prevention programs and decrease new infections through

- Participation by individuals infected with and affected by HIV
- Application of sound scientific methods that will halt the spread of HIV disease

Community planning should be an enduring partnership between community members, public health officials, academics, and other partners. Community planning should NOT be dominated by representatives of international donor organizations.

Organizing community planning

Structure

- CPGs consists of enough members who reflect the local HIV epidemic, as well as the demographics of the jurisdiction in which it is situated
- There are three officers (co-chairs) of the CPG. The three co-chairs are: one (1) governmental chair, and two (2) community co-chairs who are voting members of the CPG.
- The new structure of the CPG requires only 4-6 meetings per year. Additional meetings may be called by co-chairs, or by 6 or more members of the CPG.
- There is one (1) standing committee, which is the executive committee. The voting members of the executive committee include: the three (3) CPG co-chairs and two (2) at-large members elected by the full body. The executive committee is the governing body and manages its day-to-day operations, including process



Using evidence to inform interventions

- issues and working-group activities. The executive committee makes decisions about CPG priorities and makes recommendations about HIV prevention and HPPC process issues to the CPG.
- Work groups are where much of the work is done. Work group duration may vary from short term (3-4 meetings), to longer term (1x per month for 6-12 months).
- CPG bylaws: www.sfhiv.org/community-planning/hiv-prevention-planning-council/bylaws-policies-and-procedures/
- Jurisdictional plan: www.sfhiv.org/resources/hiv-prevention-and-jurisdictional-plans/

Member responsibilities

- Attend meetings and participate in at least one working group and one community-engagement meeting each year
- Work with the health department to identify priority populations to receive HIV prevention services based on a thorough review of the epidemiologic, evaluation, behavioral, and other data on San Francisco's populations and communities
- Review the jurisdictional HIV prevention plan
- Keep informed about HIV prevention issues
- Review the health department's cooperative agreement application to the CDC for federal HIV prevention funds, including the proposed budget, and vote to send a letter of concurrence, concurrence with reservations, or non-concurrence

Member roles

- Contribute to the planning process in a way that supports and forwards the goals of community planning and HIV prevention
- Participate in decision-making and problem-solving
- Bring expertise to the discussion
- Learn from others, community, colleagues

Resources

- HIV prevention plan example: www.sfhiv.org/resources/hiv-prevention-plan-2/
- CPG: www.sfhiv.org/community-planning/hiv-prevention-planning-council/
- CPG policies and procedures: www.sfhiv.org/community-planning/hiv-prevention-planning-council/bylaws-policies-and-procedures/

Using results

Resources and references





Resources and references

Contents

CDC and UCSF surveillance training materials	531
DEBI (Diffusion of Effective Behavioral Interventions).....	531
RDS analysis tool (RDSAT)	531
Research ethics training curriculum (RETC)	531
San Francisco Department of Public Health, TLS resource guide.....	532
Lessons learned from implementing IBBS among key populations at higher risk of HIV exposure	532
Further reading materials	532
TLS	532
Prehistory	532
Discussions of adjustment.....	532
Using a weighting scheme.....	532
Various TLS applications, no adjustment.....	533
US young men's surveys	533
US national HIV behavioral surveillance..	534
RDS methodology and statistics	534
Adaptive network sampling for hard-to-reach populations	535
Study results using RDS	536



CDC and UCSF surveillance training materials

Format: PowerPoint slides and Word documents

Author: University of California, San Francisco (UCSF), Centers for Disease Control and Prevention (CDC)

Description: Training slides, facilitator guides, and self-study materials on surveillance topics including:

- Overview of the HIV/AIDS epidemic with an introduction to public health surveillance
- HIV clinical staging and case reporting
- HIV sero-surveillance
- Sexually transmitted infection surveillance
- Surveillance of HIV risk behaviors
- Surveillance of most-at-risk populations
- Estimating the size of populations most at risk for HIV infection
- Producing a national surveillance report
- Introduction to respondent-driven sampling
- Electronic data processing, analysis, and reporting of HIV sentinel surveillance
- Facilitator training guide for HIV surveillance

Link: globalhealthsciences.ucsf.edu/prevention-public-health-group/global-strategic-information-gsi/gsi-courses-and-materials

DEBI (Diffusion of Effective Behavioral Interventions)

Format: Website

Author: CDC

Description: National HIV prevention goals call for significant increases in the numbers of people living with HIV who are in care and receiving ART to maintain viral suppression. Focused, coordinated, effective prevention efforts include finding people who are infected with HIV, linking them to and retaining them in care, and achieving viral suppression by prescribing and ensuring adherence to ART. This website describes these interventions and provides tools for implementing them.

Link: www.effectiveinterventions.org/

RDS analysis tool (RDSAT)

Format: Software, training manuals, training videos

Author: Voltz, et al. Cornell University

Description: Software package capable of analysing RDS data sets. The Respondent Driven Sampling Analysis Tool (RDSAT) includes the following features

- Estimation of important population parameters such as
 - Population proportions of user defined groups
 - Average personal network sizes
 - Homophily
 - Measures of statistical significance for population estimates
- Data display and editing
- Export of analysis results to formatted html
- Data visualization and graphics
- Analysis of groups defined by a breakpoint of a continuous variable

Link: www.respondentdrivensampling.org

Research ethics training curriculum (RETC)

Format: Online self-study training

Author: Family Health International (FHI)

Description: The RETC provides a basic and accessible level of training appropriate for individuals from different professional backgrounds and world regions. It provides:

- An overview of the main ethical principles to be considered in the development and conduct of research involving human participants
- Guidance to assist researchers in designing studies that are respectful of local cultures, regulations, and expectations
- Case studies for considering real-world examples of ethical issues
- Ancillary reference documents on modern perspectives that shape the research ethics field

Link: www.fhi360.org/sites/all/libraries/webpages/fhiretc2/RETCTraditional/intro.html



Resources and references

San Francisco Department of Public Health, TLS resource guide

Format: Downloadable PDF

Author: San Francisco Department of Public Health

Description: The TLS resource guide was prepared by the San Francisco Department of Public Health HIV Epidemiology Section, Behavioral Surveillance Unit. This manual is a systematic guide to conducting surveys using TLS and includes real examples, helpful forms, and tools.

Link: globalhealthsciences.ucsf.edu/prevention-public-health-group/global-strategic-information-gsi/surveillance/time-location-sampling-

Lessons learned from implementing IBBS among key populations at higher risk of HIV exposure

Format: Downloadable PDF

Author: UCSF

Description: Description of the constructive lessons learned by UCSF staff and partners while conducting IBBS among key populations at higher risk of HIV exposure in Africa, with special emphasis using RDS. This document is intended for university and ministry of health staff, public and private public health researchers, and surveillance officers who will be involved in planning, organizing, monitoring, implementing or analyzing IBBS on HIV and AIDS and associated risk factors of populations that may be at higher risk for HIV infection.

Link: globalhealthsciences.ucsf.edu/prevention-public-health-group/global-strategic-information-gsi/surveillance/lessons-learned

Further reading materials

TLS

Prehistory

- Kalton, G. Practical methods for sampling rare and mobile populations. Proceedings of the Annual Meeting of the American Statistical Association; August 5-9; 2001.
- Sudman S, Sirken MG, Cowan CD. Sampling rare and elusive populations. Science. 1988 May 20;240(4855):991-6.

Discussions of adjustment

- Karon JM. The analysis of time-location sampling study data. Proceedings of the ASA Section on Survey Research Methods. 2005; pp. 3180–6.
- MacKellar D, Valleroy L, Karon J, Lemp G, Janssen R. The Young Men's Survey: methods for estimating HIV seroprevalence and risk factors among young men who have sex with men. Public Health Rep. 1996;111 Suppl 1:138-44.
- MacKellar DA, Gallagher KM, Finlayson T, Sanchez T, Lansky A, Sullivan PS. Surveillance of HIV risk and prevention behaviors of men who have sex with men--a national application of venue-based, time-space sampling. Public Health Rep. 2007;122 Suppl 1:39-47.
- Muhib FB, Lin LS, Stueve A, Miller RL, Ford WL, Johnson WD, Smith PJ; Community Intervention Trial for Youth Study Team. A venue-based method for sampling hard-to-reach populations. Public Health Rep. 2001;116 Suppl 1:216-22.

Using a weighting scheme

- Ferreira C, Sabino de Oliveira E, Raymond HF, Chen SY. Use of Time-location Sampling for Systematic Behavioral Surveillance of Truck Drivers in Brazil. AIDS Behav. 2008 Apr 5;12:S32-SA38.



- van Griensven F, Thanprasertsuk S, Jommaroeng R, Mansergh G, Naorat S, Jenkins RA, Ungchusak K, Phanuphak P, Tappero JW; Bangkok MSM Study Group. Evidence of a previously undocumented epidemic of HIV infection among men who have sex with men in Bangkok, Thailand. *AIDS*. 2005 Mar 25;19(5):521-6.

Various TLS applications, no adjustment

US young men's surveys

- Bingham TA, Harawa NT, Johnson DF, Secura GM, MacKellar DA, Valleroy LA. The effect of partner characteristics on HIV infection among African American men who have sex with men in the Young Men's Survey, Los Angeles, 1999-2000. *AIDS Educ Prev*. 2003 Feb;15 (1 Suppl A):39-52.
- Celentano DD, Sifakis F, Hylton J, Torian LV, Guillin V, Koblin BA. Race/ethnic differences in HIV prevalence and risks among adolescent and young adult men who have sex with men. *J Urban Health*. 2005 Dec;82(4):610-21.
- Celentano DD, Valleroy LA, Sifakis F, et al. Young Men's Survey Study Group. Associations between substance use and sexual risk among very young men who have sex with men. *Sex Transm Dis*. 2006 Apr;33(4):265-71.
- Centers for Disease Control and Prevention (CDC). Unrecognized HIV infection, risk behaviors, and perceptions of risk among young black men who have sex with men--six U.S. cities, 1994-1998. *MMWR Morb Mortal Wkly Rep*. 2002 Aug 23;51(33):733-6.
- Centers for Disease Control and Prevention (CDC). HIV/STD risks in young men who have sex with men who do not disclose their sexual orientation--six U.S. cities, 1994-2000. *MMWR Morb Mortal Wkly Rep*. 2003 Feb 7;52(5):81-6.
- Centers for Disease Control and Prevention (CDC). HIV incidence among young men who have sex with men--seven U.S. cities, 1994-2000. *MMWR Morb Mortal Wkly Rep*. 2001 Jun 1;50(21):440-4.
- Choi KH, McFarland W, Neilands TB, Nguyen S, Louie B, Secura GM, et al. An opportunity for prevention: prevalence, incidence, and sexual risk for HIV among young Asian and Pacific Islander men who have sex with men, San Francisco. *Sex Transm Dis*. 2004 Aug;31(8): 475-80.
- Choi KH, McFarland W, Neilands TB, Nguyen S, Secura G, Behel S, et al. High level of hepatitis B infection and ongoing risk among Asian/Pacific Islander men who have sex with men, San Francisco, 2000-2001. *Sex Transm Dis*. 2005 Jan;32(1):44-8.
- Diamond C, Thiede H, Perdue T, MacKellar D, Valleroy LA, Corey L; Seattle Young Men's Survey Team. Seroepidemiology of human herpesvirus 8 among young men who have sex with men. *Sex Transm Dis*. 2001 Mar;28(3):176-83.
- Diamond C, Thiede H, Perdue T, Secura GM, Valleroy L, MacKellar D, Corey L; Seattle Young Men's Survey Team. Viral hepatitis among young men who have sex with men: prevalence of infection, risk behaviors, and vaccination. *Sex Transm Dis*. 2003 May;30(5):425-32.
- Do TD, Chen S, McFarland W, Secura GM, Behel SK, MacKellar DA, et al. HIV testing patterns and unrecognized HIV infection among young Asian and Pacific Islander men who have sex with men in San Francisco. *AIDS Educ Prev*. 2005 Dec;17(6):540-54.
- Katz MH, McFarland W, Guillin V, Fenstersheib M, Shaw M, Kellogg T, et al. Continuing high prevalence of HIV and risk behaviors among young men who have sex with men: the young men's survey in the San Francisco Bay Area in 1992 to 1993 and in 1994 to 1995. *J Acquir Immune Defic Syndr Hum Retrovirol*. 1998 Oct 1;19(2):178-81.
- Koblin BA, Perdue T, Ren L, Thiede H, Guillin V, MacKellar DA, et al. Attitudes about combination HIV therapies: the next generation of gay men at risk. *J Urban Health*. 2003 Sep;80(3):510-9.
- Koblin BA, Torian LV, Guillin V, et al. High prevalence of HIV infection among young men who have sex with men in New York City. *AIDS*. 2000 Aug 18;14(12):1793-800.



Resources and references

- Koblin BA, Torian LV, Guilin V, Ren L, MacKellar DA, Valleroy LA. High prevalence of HIV infection among young men who have sex with men in New York City. *AIDS*. 2000 Aug 18;14(12):1793-800.
- MacKellar DA, Valleroy LA, Anderson JE, Behel S, Secura GM, Bingham T, et al. Recent HIV testing among young men who have sex with men: correlates, contexts, and HIV seroconversion. *Sex Transm Dis*. 2006 Mar;33(3):183-92.
- MacKellar DA, Valleroy LA, Secura GM, Bartholow BN, McFarland W, Shehan D, et al; Young Men's Survey Study Group. Repeat HIV testing, risk behaviors, and HIV seroconversion among young men who have sex with men: a call to monitor and improve the practice of prevention. *J Acquir Immune Defic Syndr*. 2002 Jan;1;29(1):76-85.
- MacKellar DA, Valleroy LA, Secura GM, McFarland W, Shehan D, Ford W, LaLota M, Celentano DD, Koblin BA, Torian LV, Thiede H, Janssen RS; Young Men's Survey Study Group. Two decades after vaccine license: hepatitis B immunization and infection among young men who have sex with men. *Am J Public Health*. 2001 Jun;91(6):965-71.
- MacKellar DA, Valleroy LA, Secura GM, Behel S, Bingham T, Celentano DD, Koblin BA, LaLota M, McFarland W, Shehan D, Thiede H, Torian LV, Janssen RS; Young Men's Survey Study Group. Unrecognized HIV infection, risk behaviors, and perceptions of risk among young men who have sex with men: opportunities for advancing HIV prevention in the third decade of HIV/AIDS. *J Acquir Immune Defic Syndr*. 2005 Apr 15;38(5):603-14.
- Sifakis F, Hylton JB, Flynn C, Solomon L, MacKellar DA, Valleroy LA, et al. Prevalence of HIV infection and prior HIV testing among young men who have sex with men. The Baltimore young men's survey. *AIDS Behav*. 2010 Aug;14(4):904-12.
- Sifakis F, Hylton JB, Flynn C, Solomon L, MacKellar DA, Valleroy LA, et al. Racial disparities in HIV incidence among young men who have sex with men: the Baltimore Young Men's Survey. *J Acquir Immune Defic Syndr*. 2007 Nov 1;46(3):343-8.
- Valleroy LA, MacKellar DA, Karon JM, Rosen DH, McFarland W, Shehan DA, Stoyanoff SR, LaLota M, Celentano DD, Koblin BA, Thiede H, Katz MH, Torian LV, Janssen RS. HIV prevalence and associated risks in young men who have sex with men. Young Men's Survey Study Group. *JAMA*. 2000 Jul 12;284(2):198-204.
- Waldo CR, McFarland W, Katz MH, MacKellar D, Valleroy LA. Very young gay and bisexual men are at risk for HIV infection: the San Francisco Bay Area Young Men's Survey II. *J Acquir Immune Defic Syndr*. 2000 Jun 1;24(2):168-74.

US national HIV behavioral surveillance

- Berry M, Raymond HF, McFarland W. Same race and older partner selection may explain higher HIV prevalence among black men who have sex with men. *AIDS*. 2007 Nov 12;21(17):2349-50.
- Berry M, Raymond HF, Kellogg T, McFarland W. The Internet, HIV serosorting and transmission risk among men who have sex with men, San Francisco. *AIDS*. 2008 Mar 30;22(6):787-9.

RDS methodology and statistics

- Erickson B. Some problems of inference from chain data. *Sociol Methodol*. 1979 (10):276-302.
- Heckathorn DD. Extensions of respondent-driven sampling: analyzing continuous variables and controlling for differential recruitment. *Sociol Methodol*. 2007 37:151-207.
- Heckathorn D, Jeffri J. Jazz networks: using respondent driven sampling to study stratification in two jazz musician communities. Unpublished paper presented at the American Sociological Association, Atlanta, GA. 2003 Aug.
- Heckathorn D. Respondent driven sampling II: deriving valid population estimates from Chain-Referral samples of hidden populations. *Social Problems*. 2002 49(1):11-34.
- Heckathorn D, Semaan S, Broadhead RS, Hughes JJ. Extensions of respondent-driven sampling: a new approach to the study of injection drug users aged 18-25. *AIDS and Behavior*. 2002 6(1):55-67.



- Heckathorn D, Rosenstein JE. Group solidarity as the produce of collective action: creation of solidarity in a population of injection drug users. *Group Cohesion, Trust and Solidarity*; 2002 19: 37-66.
- Heckathorn D, Broadhead RS, Sergeyev B. A methodology for reducing respondent duplication and impersonation in samples of hidden populations. *J Drug Issues*. 2001 31(2): 543.
- Heckathorn D, Jeffri J. Finding the beat: using respondent-driven sampling to study jazz musicians. *Poetics*. 2001 28:307-329.
- Heckathorn D, Broadhead RS, Anthony DL, Weakliem DL. AIDS and social networks: prevention through network mobilization. *Sociol Focus*. 1999 May 32(2):159-179.
- Heckathorn D. Respondent driven sampling: a new approach to the study of hidden populations. *Social Problems*. 1997 May 44(2):174-99.
- Heckathorn D, Broadhead RS. Rational choice, public policy and AIDS. *Rationality and Society*. 1996 Aug 8(3):235-260.
- McPherson M, Smith-Lovin L, Cook JM. Birds of a feather: homophily in social networks. *Annu Rev Sociol*. 2001. 27: 415-444.
- Salganik M, Heckathorn D. Sampling and Estimation in Hidden Populations Using Respondent Driven Sampling. *Sociol Methodol*. 2004 34(1): 193-240.
- Degenne A, Forse M. *Introducing Social Networks*. Sage Publications: London. 1999
- Faugier J, Sargeant M. Sampling hard to reach populations. *J Adv Nurs*. 1997 Oct;26(4):790-7. Review.
- Heckathorn DD, Broadhead RS, Anthony DL, Weakliem D. AIDS and social networks: HIV prevention through network mobilization. *Sociological Focus*. 1999 May;32(6):159-179.
- Klov Dahl AS. Urban social networks: Some methodological problems and possibilities. In M. Kocken (ed). *The Small World*. Norwood, NJ. 1989.
- Magnani R, Sabin K, Saidel T, Heckathorn D. Sampling hard to reach and hidden populations for HIV surveillance. In press for the January, 2005, AIDS supplement.
- Newman MEJ. The structure and function of complex networks. *SIAM Review*, 2003; 45, 167-256.
- Semaan S, Lauby J, Liebman J. Street and network sampling in evaluation studies of HIV risk-reduction interventions. *AIDS Rev*. 2002 Oct-Dec;4(4):213-23.
- Sergeyev B, Oparina T, Rumyansteva TP, Voklanevskii V, Heckathorn DD, Madray H
- HIV prevention in Yaroslavl, Russia: A peer-driven intervention and needle exchange. *J Drug Issues*. 1999; 29(4), 777-804.
- Spreen M, Zwaagstra R. Personal network sampling, outdegree analysis and multilevel analysis: Introducing the network concept in studies of hidden populations. *Int Socio*. 1994; 9, 475-491.
- Wasserman S, Faust K. *Social Network Analysis: Methods and Applications*. Cambridge University Press, Cambridge, UK; 1994.
- Watters J. The significance of sampling and understanding hidden populations. *Drugs and Society*. 1993 7:13-21.
- Watts D. *Six Degrees: the science of a connected age*. W.W. Norton & Company, Inc. New York, NY. 2003

Adaptive network sampling for hard-to-reach populations

- Atkinson R, Flint J. Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social Research Update*. 2001; 33.
- Broadhead RS, Heckathorn DD, Weakliem DL, Anthony DL, Madray H, Mills RJ, et al. Harnessing peer networks as an instrument for AIDS prevention: results from a peer-driven intervention. *Public Health Rep*. 1998 Jun;113 Suppl 1:42-57.



Study results using RDS

- Bozicevic I, Rode OD, Lepej SZ, Johnston LG, Stulhofer A, Dominkovic Z, et al. Prevalence of sexually transmitted infections among men who have sex with men in Zagreb, Croatia. *AIDS Behav.* 2009 Apr;13(2):303-9.
- Chopra M, Townsend L, Johnston L, Mathews C, Tomlinson M, O'bra H, et al. Estimating HIV prevalence and risk behaviors among high-risk heterosexual men with multiple sex partners: use of respondent-driven sampling. *J Acquir Immune Defic Syndr.* 2009 May 1;51(1):72-7.
- Dahoma M, Johnston LG, Holman A, Miller LA, Mussa M, Othman A, et al. HIV and related risk behavior among men who have sex with men in Zanzibar, Tanzania: results of a behavioral surveillance survey. *AIDS Behav.* 2011 Jan;15(1):186-92.
- Draus PJ, Siegal HA, Carlson RG, Falck RS, Wang J. Cracking the cornfields: Recruiting illicit stimulant drug users in rural Ohio. *Sociol Q.* 2005, 46: 165-189.
- Gile KJ, Handcock MS. Respondent-Driven Sampling: An Assessment of Current Methodology. *Sociol Methodol.* 2010 Aug;40(1):285-327.
- Goel S, Salganik MJ. Assessing respondent-driven sampling. *Proc Natl Acad Sci U S A.* 2010 Apr 13;107(15):6743-7.
- Goel S, Salganik MJ. Respondent-driven sampling as Markov chain Monte Carlo. *Stat Med.* 2009 Jul 30;28(17):2202-29.
- Hathaway AD, Hyshka E, Erickson PG, Asbridge M, Brochu S, Cousineau MM, et al. Whither RDS? An investigation of Respondent Driven Sampling as a method of recruiting mainstream marijuana users. *Harm Reduct J.* 2010 Jul 9;7:15.
- Heimer R. Critical issues and further questions about respondent-driven sampling: Comment on Ramirez-Valles, et al. *AIDS and Behavior*, 2005, 9(Suppl 4), 403–408.
- International AIDS Alliance. Analytical report based on 2008 survey results: monitoring the behavior of injecting drug users. International AIDS Alliance, Kiev, Ukraine. (Russian) Available from: http://www.aidsalliance.org.ua/ru/library/our/monitoring_reports/pdf/report_IDU_rus.pdf
- Johnston LG, Holman A, Dahoma M, Miller LA, Kim E, Mussa M, Othman AA, et al. HIV risk and the overlap of injecting drug use and high-risk sexual behaviours among men who have sex with men in Zanzibar (Unguja), Tanzania. *Int J Drug Policy.* 2010 Nov;21(6): 485-92.
- Johnston LG, Sabin K, Prybylski D. Update for sampling most-at-risk and hidden populations for HIV biological and behavioral surveillance. *Jour HIV AIDS Surveill Epidemiol.* 2010 2;(1)
- Johnston LG, Paz-Bailey G, Morales-Miranda S, Morgan M, Alvarez B, Hickman L, Monterroso E. High prevalence of *Mycoplasma genitalium* among female sex workers in Honduras: implications for the spread of HIV and other sexually transmitted infections. *Int J STD AIDS.* 2012 Jan;23(1):5-11.
- Johnston LG, Whitehead S, Simic-Lawson M, Kendall C. Formative research to optimize respondent-driven sampling surveys among hard-to-reach populations in HIV behavioral and biological surveillance: lessons learned from four case studies. *AIDS Care.* 2010 Jun;22(6):784-92.
- Johnston LG, Thurman TR, Mock N, Nano L, Carcani V. Respondent-driven sampling: A new method for studying street children with findings from Albania. *Vulnerable Child Youth Stud.* 2010. 5(1): 1-11.
- Johnston LG, Trummal A, Löhms L, Ravalepik A. Efficacy of convenience sampling through the internet versus respondent driven sampling among males who have sex with males in Tallinn and Harju County, Estonia: Challenges reaching a hidden population. *AIDS Care.* 2009. 21 (9): 1195-1202.



- Johnston LG, Khanam R, Reza M, Khan SI, Banu S, Alam MS, et al. The effectiveness of respondent driven sampling for recruiting males who have sex with males in Dhaka, Bangladesh. *AIDS Behav.* 2008 Mar;12(2): 294-304.)
- Johnston LG, Sabin K, Hien MT, Huong PT. Effectiveness of respondent-driven sampling to recruit female sex workers in two cities in Vietnam. *J Urban Health.* 2006. 83 (Suppl 7):
- Johnston LG, Malekinejad M, Kendall C, Iuppa IM, Rutherford GW. Implementation challenges to using respondent-driven sampling methodology for HIV biological and behavioral surveillance: field experiences in international settings. *AIDS Behav.* 2008 Jul;12(4 Suppl):S131-41.
- Johnston L, O'Bra H, Chopra M, Mathews C, Townsend L, Sabin K, et al. The associations of voluntary counseling and testing acceptance and the perceived likelihood of being HIV-infected among men with multiple sex partners in a South African township. *AIDS Behav.* 2010 Aug;14(4):922-31.
- Judd A, Rhodes T, Johnston LG, Platt L, Andjelkovic V, Simić D, et al. Improving survey methods in sero-epidemiological studies of injecting drug users: a case example of two cross sectional surveys in Serbia and Montenegro. *BMC Infect Dis.* 2009 Feb;9:14.
- Kajubi P, Kanya MR, Raymond HF, Chen S, Rutherford GW, Mandel JS, et al. Gay and bisexual men in Kampala, Uganda. *AIDS Behav.* 2008 May;12(3):492-504. Epub 2007 Oct 30.
- Kasianczuk, MG, Johnston LG, Dovbakh, Leszczynski, EB. Risk factors associated with condom use among men who have sex with men in Ukraine. *J LGBT Health Res.* 2009. 5:51-62.
- Kendall C, Kerr LR, Gondim RC, Werneck GL, Macena RH, Pontes MK, et al. An empirical comparison of respondent-driven sampling, time location sampling, and snowball sampling for behavioral surveillance in men who have sex with men, Fortaleza, Brazil. *AIDS Behav.* 2008 Jul;12(4 Suppl):S97-104.
- Malekinejad M, Johnston LG, Kendall C, Kerr LR, Rifkin MR, Rutherford GW. Using respondent-driven sampling methodology for HIV biological and behavioral surveillance in international settings: a systematic review. *AIDS Behav.* 2008 Jul;12(4 Suppl):S105-30.
- Platt L, Wall M, Rhodes T, Judd A, Hickman M, Johnston LG, et al. Methods to recruit hard-to-reach groups: comparing two chain referral sampling methods of recruiting injecting drug users across nine studies in Russia and Estonia. *J Urban Health.* 2006 Nov;83(6 Suppl):i39-53.
- Ramirez-Valles J, Heckathorn DD, Vázquez R, Diaz RM, Campbell RT. From networks to populations: the development and application of respondent-driven sampling among IDUs and Latino gay men. *AIDS Behav.* 2005 Dec;9(4):387-402.
- Salganik MJ. Variance estimation, design effects and sample size calculations for respondent driven sampling. *J Urban Health.* 2006, 83(Suppl 7), 98–112. doi:10.1007/s11524-006-9106-x.
- Semaan S, Santibanez S, Garfein RS, Heckathorn DD, Des Jarlais DC. Ethical and regulatory considerations in HIV prevention studies employing respondent-driven sampling. *Int J Drug Policy.* 2009 Jan; 20(1):14-27.
- Simic M, Johnston LG, Platt L, Baros S, Andjelkovic V, Novotny T, et al. Exploring barriers to 'respondent driven sampling' in sex worker and drug-injecting sex worker populations in Eastern Europe. *J Urban Health.* 2006 Nov;83(6 Suppl):i6-15.
- Stormer A, Tun W, Guli L, Harxhi A, Bodanovskaia Z, Yakovleva A, et al. An analysis of respondent driven sampling with Injection Drug Users (IDU) in Albania and the Russian Federation. *J Urban Health.* 2006 Nov; 83(6 Suppl):i73-82.
- Taran YS, Johnston LG, Pohorila NB, Saliuk TO. Correlates of HIV risk among injecting drug users in sixteen Ukrainian cities. *AIDS Behav.* 2011 Jan;15(1):65-74.



Resources and references

- Townsend L, Ragnarsson A, Mathews C, Johnston LG, Ekström AM, Thorson A, et al. “Taking care of business”: alcohol as currency in transactional sexual relationships among players in Cape Town, South Africa. *Qual Health Res.* 2011 Jan;21(1):41-50.
- Townsend L, Jewkes R, Mathews C, Johnston LG, Flisher AJ, Zembe Y, et al. HIV risk behaviours and their relationship to intimate partner violence (IPV) among men who have multiple female sexual partners in Cape Town, South Africa. *AIDS Behav.* 2011 Jan;15(1):132-41.
- Uusküla A, Johnston LG, Raag M, Trummal A, Talu A, Des Jarlais DC. Evaluating recruitment among female sex workers and injecting drug users at risk for HIV using respondent-driven sampling in Estonia. *J Urban Health.* 2010 Mar;87(2):304-17.
- Volz E, Heckathorn DD: Probability-Based Estimation Theory for Respondent-Driven Sampling. *Journal of Official Statistics*, 2008, 24 (Suppl 1), 79-97.
- Wang J, Carlson RG, Falck RS, Siegal HA, Rahman A, Li L. Respondent-driven sampling to recruit MDMA users: a methodological assessment. *Drug Alcohol Depend.* 2005 May 9;78(2):147-57.
- Wejnert C. An Empirical Test of Respondent-Driven Sampling: Point Estimates, Variance, Degree Measures, and Out-of-Equilibrium Data. *Sociol Methodol.* 2009;39:73-116.
- Wejnert C, Heckathorn DD. Web-Based Network Sampling: Efficiency and Efficacy of Respondent-Driven Sampling for Online Research. *Sociological Methods and Research*, 2008;37:105-134.
- Yeka W, Maibani-Michie G, Prybylski D, Colby D. Application of respondent driven sampling to collect baseline data on FSWs and MSM for HIV risk reduction interventions in two urban centres in Papua New Guinea. *J Urban Health.* 2006 Nov;83(6 Suppl):i60-72.