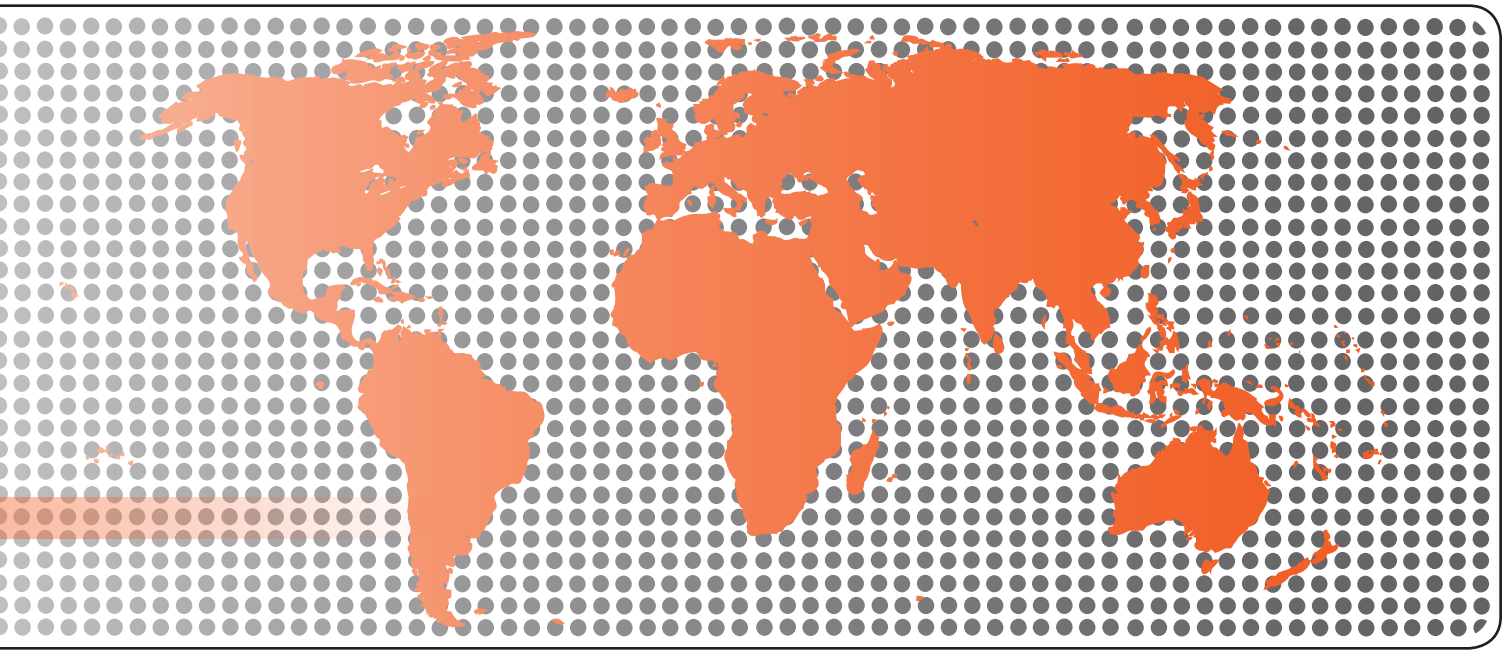
GTSS Global Adult Tobacco Survey (GATS)



Implementation Instructions

Global Adult Tobacco Survey (GATS)
Implementation Instructions

Version 3.0
April 2012

Contents

1. Introduction

Tobacco use is a major preventable cause of premature death and disease worldwide. Approximately 5.4 million people die each year due to tobacco-related illnesses — a figure expected to increase to more than eight million a year by 2030. If current trends continue, tobacco use may kill a billion people by the end of this century. It is estimated that more than three quarters of these deaths will be in low- and middle-income countries[1]. An efficient and systematic surveillance mechanism is essential to monitor and manage the epidemic.

The *Global Adult Tobacco Survey* (GATS), a component of Global Tobacco Surveillance System (GTSS), is a global standard for systematically monitoring adult tobacco use and tracking key tobacco control indicators. GATS is a nationally representative household survey of adults, 15 years of age or older, using a standard core questionnaire, sample design, and data collection and management procedures that have been reviewed and approved by international experts. GATS is intended to enhance the capacity of countries to design, implement and evaluate tobacco control interventions.

In order to maximize the efficiency of the data collected from GATS, a series of manuals has been created. These manuals are designed to provide countries with standard requirements as well as several recommendations on the design and implementation of the survey in every step of the GATS process. They are also designed to offer guidance on how a particular country might adjust features of the GATS protocol in order to maximize the utility of the data within the country. In order to maintain consistency and comparability across countries, following the standard protocol is strongly encouraged.

Overview of the Global Adult Tobacco Survey

GATS is designed to produce national and sub-national estimates among adults across countries. The target population includes all non-institutionalized men and women, 15 years of age or older, who consider the country to be their usual place of residence. All members of the target population will be sampled from the household (HH) that is their usual place of residence.

GATS uses a geographically clustered, multistage sampling methodology to identify the specific households that Field Interviewers will contact. First, a country is divided into Primary Sampling Units, segments within these Primary Sampling Units, and households within the segments. Then, a random sample of households is selected to participate in GATS.

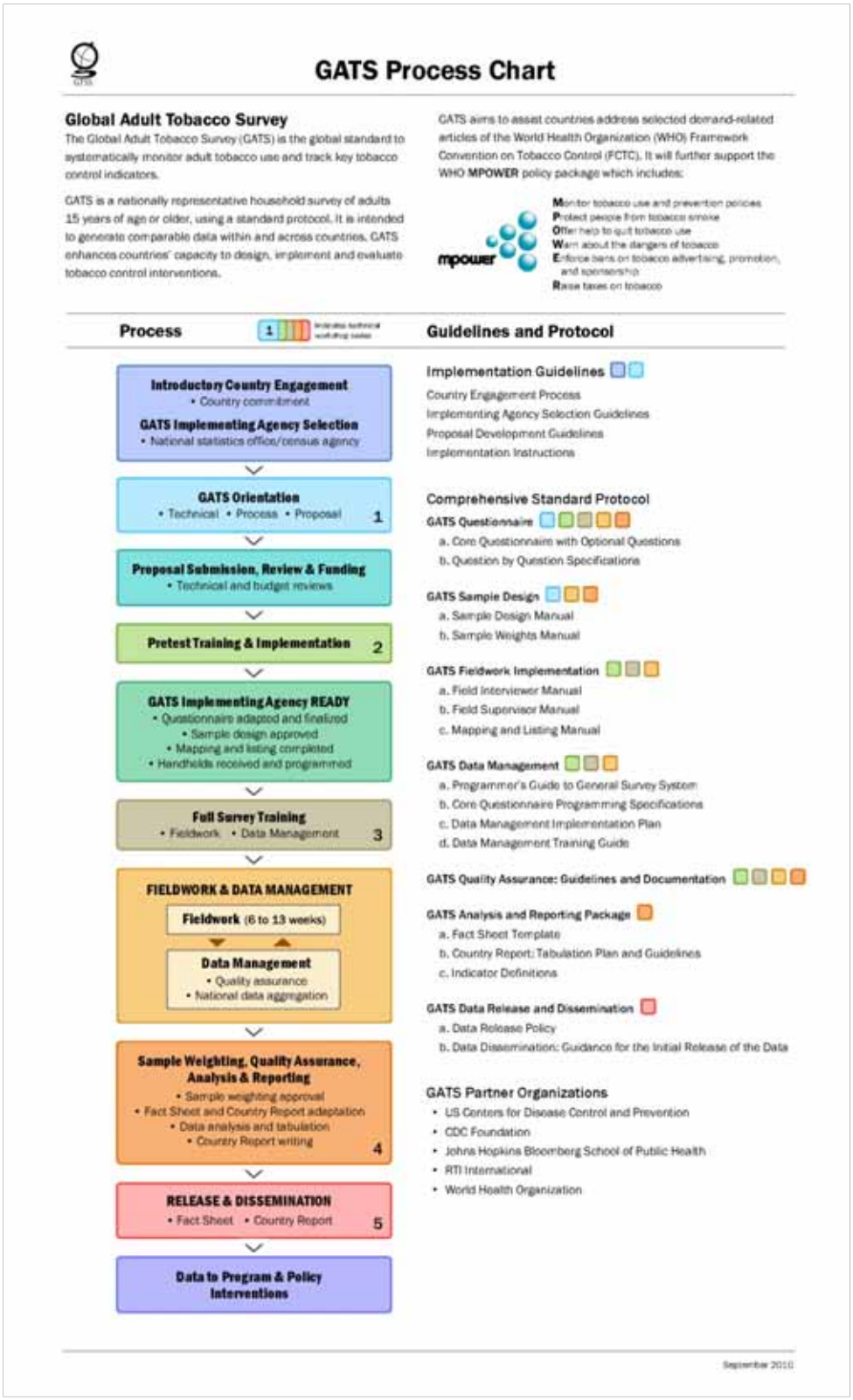
At each address in the sample, Field Interviewers will administer the Household Questionnaire (HQ) to one adult who resides in the household. The purposes of the HQ are to determine if the selected household meets GATS eligibility requirements and to make a list, or roster, of all eligible members of the household. Once the roster of eligible residents of the household is completed, one individual will be randomly selected to complete the Individual Questionnaire (IQ). The IQ asks questions about background characteristics; tobacco smoking; smokeless tobacco; cessation; secondhand smoke; economics; media; and knowledge, attitudes, and perceptions about tobacco.

Use of These Instructions

This document aims to provide practical, step-by-step, and easy-to-follow instructions to implement the GATS process. It also introduces the experts and objective reviewers available to provide countries with an ongoing technical exchange.

[1] Mathers, C.D., and Loncar D. Projections of Global Mortality and Burden of Disease from 2002 to 2030. *PLoS Medicine*, 2006, 3(11):e442.

GATS Process Chart



2. Questionnaire: Adaptation, Review, and Finalization Process

2.1 Review Process and Timeline

Action Number	Responsible	Task
1	CDC	Send *GATS Core Questionnaire with Optional Questions* with all other required manuals to country IA
2	IA	• Review and discuss the questionnaire with the in-country Ministry of Health (MoH) and technical experts prior to first technical workshop, as necessary • Prepare a summary if any issues are raised (upcoming legislation) and additional questions to be discussed in the first technical workshop
3	IA, WHO RO, CDC, QRC	• First technical workshop: GATS Orientation • Review summarized issues and the questionnaire with in-country technical experts for adaptation (Note: The questionnaire should be available in the local language if required and core questionnaire should be adapted to country situation) • An adapted questionnaire will be prepared by IA.
4	IA	• IA works with MoH and technical experts to finalize the adapted questionnaire and formally submit the adapted version of questionnaire (in English) to CDC focal point.
5	CDC, QRC	Review Process (before pretest): • CDC will review, format (if needed), and submit the country-adapted questionnaire to the QRC for expert review • CDC compiles the recommendations from QRC, sends to IA, and asks countries for consideration • Communication between IA focal point and CDC/QRC, to finalize the questionnaire as needed • Forward a copy to IA for documentation
6	IA	• IA works with MoH and technical experts to modify the questionnaire from the lessons learned in the pretest and forward the modified full survey questionnaire (in English) to CDC focal point
7	CDC, QRC	Review Process (after pretest): • CDC focal point sends full survey questionnaire to QRC for final review • QRC reviews the full survey questionnaire and provides feedback (if there are issues, CDC focal point will schedule a call with IA for resolution) • CDC finalizes questionnaire with IA • Forward a copy to IA for documentation

CDC *Centers for Disease Control and Prevention*
IA *Implementing Agency*
QRC *Questionnaire Review Committee*
WHO RO *WHO Regional Office*

Notes:

- The process is strictly confidential and at any stage the questionnaire, in part or full, should not be disclosed or shared with any other members or persons outside the QRC without the prior approval/permission from the IA and CDC.
- Communication between the IA and CDC focal point should be copied to the WHO RO.
- Edits to questionnaires and supporting documents in the above process should be done using track changes.
- Titles of documents should consist of the date in which they were created to ensure version control.

Timeline for Questionnaire Review Committee Process

Action Number	Task	Number of Days
5	CDC review on skip patterns and formatting	2 working days
5	QRC will review adapted version of questionnaire and compile comments	7 working days
5	Based on QRC comments, if needed, a conference call will be organized with available QRC members, and IA focal point to finalize questionnaire (CDC focal point will schedule the call)	1 working day
5	CDC adapts and finalizes the questionnaire after the conference call	2 working days
7	Further QRC review and finalization of questionnaire after pretest, as required	5 working days
	Total working duration	15 working days

Note: QRC members are requested to give their comments in writing (suggested revisions/options for the question) to ease the process.

2.2 Translation of Questionnaires into Local Language(s)

Translations and back translations of questionnaires should be done independently by language experts. Content and survey experts should review the translations for appropriateness. There are two options for translating the questionnaire into the local language that intertwine with the questionnaire review process.

Option #1:

- The *GATS Core Questionnaire* is translated into the local language and country-adaptations are made in the local language
- A draft country-adapted questionnaire is finalized in the local language
- The final draft of the country-adapted questionnaire is translated into English
- The final draft English version of the country-adapted questionnaire is sent to CDC for submission to the QRC for review
- The English version of the country-adapted questionnaire is finalized with QRC, CDC, and IA
- Any final revisions made to the English version are incorporated into the local language version (CDC/QRC will verify accuracy with IA, as needed)

Note: In this option, the QRC is reviewing the country-adaptations to the Core Questionnaire and also reviewing the back-translated version of the questionnaire (for accuracy of translation) at the same time.

Option #2:

- Country-adaptations are made in English using the *GATS Core Questionnaire*
- A draft country-adapted questionnaire is finalized in English
- The final draft English version of the country-adapted questionnaire is sent to CDC for submission to the QRC for review
- The English version of the country-adapted questionnaire is finalized with QRC, CDC, and IA
- The final English country-adapted questionnaire is translated into the local language
- The local language country-adapted questionnaire is back-translated into English
- The back-translated questionnaire is reviewed by CDC/QRC to ensure accuracy (if there are issues, CDC focal point will schedule a call with IA for resolution)

Note: In this option, the country-specific questionnaire is adapted, reviewed, and finalized in English. The final English version is then translated into the local language and back-translated in English. The back-translated version is then submitted for final review to ensure accuracy.

2.3 Guidelines for Country-Adaptations to Core Questionnaire

Processes for Adapting Core Questionnaire

- Start with the *GATS Core Questionnaire with Optional Questions*
- Do not revise standard core questions (except for country specific categories)
    - Maintain consistency for country comparison
    - May be exceptions (provide justification to QRC)
- Modify question item lists (where instructed)
    - Example: Types of smoking tobacco (cigarettes, bidis, cigars, etc.) relevant for country
- Modifying response options (where instructed)
    - Example: List of common cigarette brands for country
- Incorporate questions from the list of suggested optional questions
- Include additional country-specific questions
    - Include questions deemed important
    - Be aware of length
- Remove core questions that are not relevant to the country
    - Example: Smokeless tobacco questions C04-C18 are optional

Standard Conventions for Adapting Core Questionnaire

- Highlight all country adaptations to the GATS questionnaire (for ease of reference)
    - Item lists, response categories, optional questions, and country added questions.
- Use ~~strikethrough~~ to indicate any core questions that country wants to delete (for ease of reference)
- Maintain core and optional question numbering and ordering to maintain consistency for country comparison (as much as possible)
- For newly added country questions: Use double lettering depending on the section (e.g., AA10, BB17, EE4)
    - Won't disrupt current numbering by adding in new country questions
- Only change skip instructions if needed to accommodate either 1) added optional questions or 2) country added questions
- Limit the number of additional questions to keep questionnaire at a reasonable length
- Limit the complexity of additional questions for ease of programming each country questionnaire
- Provide justification for 1) Including additional country questions, and 2) Deleting/revising standard core questions (not including the core question lists/response categories that the country should adapt)
    - Justification for adaptations helps to make the QRC review process more efficient

2.4 Guidelines for Questionnaire Programming Quality Control

This section provides a list of guidelines for questionnaire programming version and process control. The guidelines listed below are organized under three areas: 1) major estimated timelines, 2) process conventions, and 3) quality control procedures. Participating GATS countries and GATS partners should adhere to these guidelines as much as possible in order to maintain quality control and efficiency for GATS preparations.

Major Timeline Guidelines

- Proposal approved 6-8 weeks prior to pretest training.
- Questionnaire programming in English begins 6 weeks prior to training.
- Hardware delivered and operational 4 weeks before training.
- Hardware localization issues start 4 weeks before training.
- Translations of software system menus and messages completed 1 week before training.
- Translation of questionnaire texts (HQ and IQ) in all required country-specific languages completed and inserted into program 2 weeks before training.
- IA signoff on HQ and IQ 1 week before training.
- IA IT staff take control and ownership of questionnaires at this point.
- Start version control of questionnaires with the signed off version above and maintain strict control after this point.

Process Control

- Survey/Field staff, rather than IT staff, are responsible for inserting country-specific language (translations) based on their country questionnaire.
- Survey director must approve programmed HQ and IQ in writing before field staff training (with version number).
- Text changes: A language change must echo through to all languages.
- Changing the programming logic (ranges, validity checks, etc) of an approved questionnaire requires re-review by the QRC.
- Changing the content or wording of a question or responses requires re-review by the QRC.
- Version control of questionnaire files: Once CDC/RTI/WHO IT staff leaves, the IA owns the files and country IT/Survey staff are responsible for maintaining an audit trail of changes to questionnaires and programming specifications. RTI's role switches to tech support only.
- After pretest debriefing and full implementation starts, country to send CDC/RTI the questionnaire program files. Any changes to the program should result in updated files being sent to CDC/RTI.

Quality Control for Checking the Questionnaire

- Programmers must update the version number every time a new questionnaire file is created. Also, this must be confirmed before starting to review the questionnaire. An archive of older files for history and backup is a good idea, even perhaps archiving files for HQ and IQ every day during heavy development.
- For every language, the full programming specifications are reviewed and every question is checked against the specs. If any problems are found, the specs are marked, the problem is fixed, and then it is checked again on the handheld. This iterative process continues until every question is approved on the handheld. There is absolutely no wavering from this process. This must be done with a local language survey expert. It should not be relegated to programmers and certainly not to staff without the requisite language expertise.
- For every language, the count of *, (,), [,], {, and } symbols must be the same. Otherwise, this is re-checked and fixed.
- Skip patterns and English text are always fully tested. The goal is to make absolutely no changes to the questionnaire except fixes to the local language text while in country.
- Once the questionnaire is in Microsoft Access, do not go back, change, and re-import the info from Microsoft Excel. Excel and Access are not the same. Files coming from Excel need to be processed and thoroughly checked.

3. Sample Design: Adaptation, Review, and Finalization Process

3.1 Review Process and Timeline

Action Number	Responsible	Task
1	CDC	Send *GATS Sample Design Manual* with all other required manuals/documentation to country IA and/or national statistical office (NSO), depending on country situation
2	IA	• Review standard sample design and acquire preliminary information required for the sample design discussions prior to first technical workshop • Review and discuss the sample design with IA and/or NSO and technical experts, as needed, prior to first technical workshop • Prepare a summary if any issues are raised (sample selection / frame / national or regional representation, etc.)
3	IA, WHO RO, CDC, SRC (as required)	• First technical workshop: GATS Orientation • Review summarized issues and the proposed sample design with the country technical experts for adaptation (Note: Relevant information on sample selection and sample frame should be available.) • An adapted summary on sample design will be prepared either by IA and/or NSO, depending on country situation
4	IA	Work with CDC focal point to finalize the adapted sample design and specifications (see Section 3.4), and formally submit the adapted version of sample design to CDC focal point.
5	CDC, SRC	Review Process: • CDC focal point will submit the sample design proposal to the SRC for review • Adapt the recommendations from SRC • Once review is completed, IA will prepare a final sample design summary table for implementation • Communication and technical assistance between IA and CDC to finalize sample design and selection as needed
6	IA	• Oversee and assist IA and/or NSO in drawing the sample according to suggested design features • Summarize issues related to sample selection and other design related concerns and send to CDC focal point
7	CDC, SRC	SRC will provide on-going technical assistance. This may be a separate visit to country if required, depending on need, in drawing the sample

CDC *Centers for Disease Control and Prevention*
IA *Implementing Agency*
SRC *Sample Review Committee*
WHO RO *WHO Regional Office*

Notes:

- The process is strictly confidential and at any stage the sample design, in part or full, should not be disclosed or shared to any other members or persons outside the SRC without the prior approval/permission from the IA and CDC.
- Communication between IA and CDC focal point should be copied to the WHO RO.
- In order to speed up the process, it is suggested and recommended to submit the adapted sample design to CDC focal point by IA focal point well in advance to full proposal submission.
- All the sample design materials should be cleared by SRC for proper and standard implementation.
- Titles of documents should consist of the date in which they were created to ensure version control.

Timeline for Sample Review Committee Review Process

Action Number	Task	Number of Days
5	SRC will review the adapted version of sample design	10 working days
5	Based on the comments, if needed, a conference call will be organized with available SRC members and IA and/or NSO focal point to finalize sample design (CDC focal point will schedule the call)	1 working days
5	CDC focal point and IA jointly adapt and finalize the sample design after the conference call	2 working days
7	Further adaptation/implementation of sample design based on country need	2 working days
7	Ongoing technical assistance will be provided by experts to IA as needed until the sample is drawn and implemented	Ongoing
	Total working duration	15 working days

Note: SRC members are requested to give their comments in writing (with clarifications) to ease the process.

3.2 Information Request for Sample Design Discussion and Adaptation

Based on recommendations to strengthen the existing sample design review process and the experience of the SRC members with the GATS countries that have undergone the sample design review process, a standardized template is developed for requesting information to sample design discussions and adaptation. This will occur by requesting information required from countries prior to the first technical workshop in the GATS process in order to discuss the sample design and its adaptation to the country-specific situation and data available to draw the sample.

Following is a list of sampling-related considerations compiled from various countries' experience in GATS countries for understanding country-specific methodologies and scenarios, and accordingly adapting the sample design for GATS implementation.

1. Background information for sample design development
    - Such as population counts from administrative data, electoral data, or (preferably) the last census, with counts broken down by those population subgroups that are likely to define reporting subgroups for GATS findings (e.g., by age, sex, urban-rural, and geographic distribution at national and sub-national level, where applicable).
    - The countries hierarchy, along with corresponding average population sizes, of the major geo-political area units in the country, such as region, division, province, state, district, village, etc.
    - A profile of governmental and non-governmental organizations in the country with the capacity to design and select national household samples.
2. Recent specific-purpose national household surveys whose designs might be integrated with GATS survey design
    - Year of survey, objectives, target population and inclusion/exclusion criteria, stages of sample selection, sampling units and frames used at each stage, number of responding households, and number of primary sampling units (PSUs).
    - What estimation or data uses were considered in developing the design for this sample?

- What flexibility might the design offer to meet GATS sample size needs by gender, urban-rural, and region of the country?
- Details of the sample design are needed to determine: if the design produces a valid probability sample of households and residents, and what are the key features of the design (e.g., sampling units at each stage, use of stratification, definitions of the strata, allocation of the sample among strata, sample sizes overall and for key domains).
- Does the sample design have any special features, such as probability proportionate to size (PPS) selection of clusters, replication to facilitate panel rotation for measuring temporal change, etc.?
- Who was responsible for sample selection, when was sample selection completed, and what do we know about the experience and technical competency of those completing this task?
- Who was responsible for producing weights for the survey sample, when was sample weighting completed, and what do we know about the experience and technical competency of those completing this task?

3. Existing multi-purpose national samples whose designs might be integrated with the GATS sample design
    - Examples: Recent master samples created by the NSO in the country for surveys as needed, such as DHS, STEPS, and other national surveys.
    - Was the sample designed to target a specific population? If so, what are the specific criteria to define that population?
    - What estimation or data uses were considered in developing the design for this sample?
    - What flexibility might the design offer to meet GATS sample size needs by gender, urban-rural, and region of the country?
    - Details of the sample design are needed to determine: if the design produces a valid probability sample of households and residents, and what are the key features of the design (e.g., sampling units at each stage, use of stratification, definitions of the strata, allocation of the sample among strata, sample sizes overall and for key domains).
    - Does the sample design have any special features, such as probability proportionate to size (PPS) selection of clusters, replication to facilitate panel rotation for measuring temporal change, etc.?
    - Who was responsible for sample selection, when was sample selection completed, and what do we know about the experience and technical competency of those completing this task?
    - Who was responsible for producing weights for the survey sample, when was sample weighting completed, and what do we know about the experience and technical competency of those completing this task?
    - Were the weights adjusted for nonresponse and calibrated to the population distribution? What was the approach followed in each of these tasks, if completed?
    - What were the perceived barriers and expediencies in working with those who designed, selected, and weighted the sample?

4. Excluded Areas of the Country
    - Will any significant parts of the country need to be excluded from GATS?
    - If so, what are the specific reasons for the exclusion?

5. If it may be feasible to integrate an existing sample in producing the GATS sample design, is it likely that we will be:
    - Subsampling from an existing part of the existing sample? If so, which part? When the subsampling is done, who would likely do the subsampling? GATS staff, NSO, or UNC?
    - Sampling from an existing part of the sampling frame for the existing sample? If so, which part? How accessible will this part of the frame be to us?
    - Simply adding a module to all or a part of the existing sample?
    - Using the GATS as a source of subsampling for other surveys?

6. Correlates of tobacco use for sampling stratification
    - Are there any existing socioeconomic characteristics at PSU level that could be used for stratification in PSU selection (e.g.., measures of literacy, median household income, median education level for adults, etc.?
    - Are there any available correlates of tobacco use for subareas within PSUs for stratification in sampling the subareas?

7. Knowledge about the extent of non-sampling errors in prior surveys in the country
    - Such as size of nonresponse, eligibility rates etc. as outlined in the *GATS Sample Design Manual* to understand the sample attrition.
    - What are the sources of this information?

8. NSO sampling and survey analysis expertise and experience
    - What is the NSO's role and capacity to design valid and statistically efficient probability samples, conduct large-scale national surveys, compute weights, and analyze data from surveys with complex sample designs?
    - What is the NSO's level of familiarity and facility with standard survey analysis software (e.g., SAS, STATA, SPSS)? If standard survey analysis software packages are not available to the NSO, what experience does it have in developing statistical software/programs for routinely computed and reported measures of the precision of survey estimates from complex sample designs?

3.3 Sample Design Proposal Template for Review and Finalization

Descriptions of sample design for review in proposals like GATS typically require that the authors tell the reader what they intend to do in some detail, and give their reasons for the specifics of their approach. The level of detail in such a document should be sufficient to be reproducible, i.e., in sufficient detail so that the reader could actual carry out what is being proposed.

Looking in to the complexity of design and to speed up and strengthen the review process, SRC suggests that countries use the following outline for preparing the sampling proposal for review on corresponding section(s) of the *GATS Sample Design Manual* indicated below in brackets. Please be noted that the *GATS Sample Design Manual* will be the basis for reference and to prepare the required documentation in detail to become the primary basis for the review and decision-making as to appropriateness of approach.

1. Introduction [1]
2. Survey Objectives [2]
3. Target Population and Sample Frame [3]

4. Summary of Sample Design Features* [4]
5. Forming Primary Sampling Units (PSUs) [6]
6. First Stage of Sampling: Selecting PSUs [7]
7. Intermediate Stages and Selecting Households [8]
8. Selecting Individuals With in Screened Households [9]
9. Determining Sample Sizes at Each Stage of Selection and Reporting [10]

This will help SRC to understand the rationale / justification for considering the design proposed by the countries and to examine the precision and other quality aspects of the proposed design in comparison to the GATS standard design requirements. This will also be helpful to countries to describe in detail the process of sample implementation, various stages of sample selection including their selection probabilities to include in the final report and to produce a country-specific sample weighting guidelines based on the sample weighting manual that is under finalization by a country in coordination with CDC focal point.

* Includes a sample design summary table which provides a tabular overview and specifications of the entire sample design (see Section 3.4).

3.4 Sample Design Summary Table

Sample Design Specification of GATS [Country]
[CDC Country technical focal point (email)]
[Date prepared]
[Eligibility Definition for Survey Population]

Stage	Sampling Unit and Frame Source *What is being sampled and from what sampling frame?*	Stratification *Stratify by what? Which sample allocation approach?*	Sample Selection *How will random selection be used?*	Overall Sample Size
1	Primary Sampling Unit (PSU): • [NSO/Census] PSU Frame • GATS Subsampling Frame:	• [NSO/Census] Master Sample: • GATS Subsample:	• [NSO/Census] Master Sample: • GATS Subsample:	• GATS Subsample: GATS PSU Selection Probability (To Be Recorded on Respondent Data File):
2	Secondary Sampling Unit (SSU) : • [NSO/Census] SSU Frame: • GATS SSU Subsampling Frame:	• [NSO/Census] Master Sample: • GATS Subsample:	• [NSO/Census] Master Sample: • GATS Subsample:	GATS Final SSU Selection Probability (To Be Recorded):
3	Tertiary Sampling Unit (TSU): • GATS Household Frame:			
4	Final Sampling Unit: Frame:			

Name: Prof. Bill Kalsbeek ..... Date .....
Signature of Chairman of Sample Review Committee

4. Training

4.1 Pre-site Visit Checklist

GATS Pre-Site Visit Checklist
Activities to Complete Two to Three Weeks in Advance of Site Visit

Host Country	CDC/RTI/WHO
General Training Setup	
Confirm receipt of *Programmers Guide to GSS*, *Field Interviewer* and *Field Supervisor Manuals*, and *Question by Question Specifications*	
Give feedback on pretest agenda template	Confirm how pretest training will be tailored to meet host country's needs (both hardware/software and survey administration components)
Identify IT staff who will attend training on file aggregation, programming and configuration of GSS software	Confirm number and availability of host country IT staff for training on file aggregation, programming and configuration of software GSS software
Identify staff who will attend pretest administration training	Confirm number and availability of host country staff who will attend pretest implementation training
Reserve training room	Confirm training room(s) availability with host country; provide information on specifications, if needed.
Identify host country IT team / contact	Obtain contact information for host country IT team / contact
Questionnaire Translation and Development	
Translate *Programmers Guide to GSS*, *Field Interviewer* and *Field Supervisor Manuals*, and *Question by Question Specifications*	
Translate *GATS Core Questionnaire with Optional Questions* (if applicable)	
Back translate *GATS Core Questionnaire with Optional Questions* (if applicable)	
Send back translated questionnaire	Confirm receipt of back translated questionnaire
	Program back translated version of host country questionnaires in GSS as templates for host country
Sample Assignment Planning	
Build case file to assign cases to individual interviewers	
Modify case file to GSS format	
Select case assignment methodology	
Provide information on sample file layout	Collaborate with host country staff to develop sample file
Create electronic file with interviewer name, a 6-digit numeric ID, and a user name and password for network access (if applicable)	

Data Collection Planning	
Plan hardware and software needed at central and/or regional sites	
Inventory and confirm receipt of hardware and accessories	
Test all hardware and accessories (power cords/plugs, batteries, SD cards)	
Assign each hardware device to a pretest interviewer	
Create a label with the serial number and interviewer ID and place it on the back of the hardware device	
Data Management Model	
Select Data Management Model — data transfer and aggregation	Collaborate with host county to design data transfer and data aggregation models
Select/Plan method and frequency of data aggregation	Collaborate with host county on data aggregation needs
Review survey monitoring needs	Review survey monitoring needs
Review survey reporting needs	Review survey reporting needs
Develop plans for install and configuration of web site if it is selected as data aggregation mode	Test web site, if applicable for data transmission model
If needed, assign ID number to each SD card with a sticker or permanent pen. Assign SD cards to devices/interviewers	
GSS Programming	
Collaborate on a remote access process to share screens and file exchanges	Collaborate on a remote access process to share screens and file exchanges
Confirm receipt of GSS software tools	Send GSS software tools and assist in setup procedures
	Review setup parameters for GSS
Translate GSS message tables to host language	
	Test language pack with simple test program
Prepare software tools for data management methods selected	Collaborate to provide assistance on software tools for data management methods selected as needed
	Assist with planning and pre-implementation steps for data management systems

4.2 Pretest and Full Survey Agenda Template for Training and Implementation

4.2a Pretest

Day	Task	Specific Objectives
1 – 3	IT/DM Training Days 1 – 3	Provide in-country staff with IT and data management training for software and hardware (GSS PC suite, GSS questionnaire software, hardware).
4 – 6	FI/FS Training Days 1 – 3	Provide training to field interviewers and/or field supervisors to conduct GATS.
7 – 9	Conduct pretest	Conduct and observe pretest in rural and urban locations.
10	Data Management	Aggregate data; prepare master merge file.
11	Debrief GATS staff	Needs assessment for main implementation; debriefing of WHO, CDC, and other GATS staff.

4.2b Full Survey

Day	Task	Specific Objectives
1 – 3	IT/DM Set-up Days 1 – 3	Provide in-country staff with IT and data management support for software and hardware (GSS PC suite, GSS questionnaire software, hardware).
4 – 8	FI/FS Training Days 1 – 5	Provide training to field interviewers and/or field supervisors to conduct GATS. (This may be a training of trainers or TOT session.)

4.3 IT/Data Management Training Workshop (Pretest/Full Survey)

See GATS Data Management Training Guide for further details about training topics.

Day 1	Morning	Session 1: Final review of questionnaire a. Review final questionnaire on handheld and screen b. Build case file
	Afternoon	Session 2: Set up all handhelds a. Build master SD card b. Set up manufacturing process c. Hard reset all handhelds & create SD card copies d. Set up all handhelds for training and fieldwork
Day 2	Morning	Session 3: Understand the QC process and conduct QC on all handhelds a. Discuss overview and purpose of QC b. Explain method of conducting QC1 and QC2 & finalize all handhelds for training c. Load case file after training
	Afternoon	Session 4: Data monitoring and creating the master dataset a. Data aggregation and transpose b. Data monitoring—reports • Response rates • Frequencies • Pending final result code • Discuss training field supervisors and field interviewers on event coding and finalize all cases c. Master dataset creation d. Data view for looking at data in detail
Day 3	Morning	Session 5: Training preparation and role play a. Review training process b. Conduct full circle role play c. Review summary and action plan for full survey
	Afternoon	Time available if needed

4.4 Field Interviewer/Field Supervisor Training Workshop (Pretest/Full Survey)

Day 1	Morning	Welcome and Introductions Objectives of GATS Overview of GATS Materials Protocol and Procedures Roles and responsibilities Sampling Review of General Interviewing Techniques / Non-sampling errors
	Afternoon	Question by Question Review of Household Questionnaire (paper) Question by Question Review of Individual Questionnaire (paper)
Day 2	Morning	Question by Question Review of Individual Questionnaire (paper) (*continued*)
	Afternoon	Introduction to the handheld Overview of the Case Management System (CMS) Demonstration of the Household Questionnaire (handheld) "Round robin" using Household Questionnaire (handheld)
Day 3	Morning	Demonstration of the Individual Questionnaire (handheld) Round robin using Individual Questionnaire (handheld)
	Afternoon	Paired mock interviews (household and individual)
Day 4	Morning	Review of pending and final result codes (household and individual) Record of calls (ROC) in CMS ROC practice (group exercise)
	Afternoon	Paired mock interviews
Day 5	Morning	(Field Interviewers) Paired mock interviews (Field Supervisors) Data transfer; Quality assurance
	Afternoon	Assignments Administrative issues Closing

5. Data Management

5.1 Handheld Devices

The overarching goal of GATS is to develop a rigorous system to monitor the status of global tobacco use. The World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), the CDC Foundation (CDCF) and RTI International (RTI) conducted a thorough evaluation of the use of Electronic Data Capturing (EDC) for GATS and concluded the use of EDC devices for GATS is not only feasible but also highly recommended.

Countries are strongly encouraged to use EDC devices ("handhelds"). The use of handhelds improves the speed, quality, and cost of data collection and management for GATS. The significant gains in data accuracy, availability, and management, justify the implementation of handheld devices for GATS interviews and enhance the countries' capacity in using these devices for future non-GATS surveys.

To help ensure the success of GATS and handhelds, RTI will assist other GATS partners (including in-country organizations) during handheld implementation. RTI's assistance will be given in the form of ongoing technical support, which also includes its participation during the GATS in-country technical workshops. In the technical support capacity, RTI serves as the global IT coordinator for GATS.

The partners also evaluated the available hardware and software for GATS compatibility. During this evaluation process, the four partners selected handheld hardware and software based on ease of implementation and use at the in-country field level. Additional factors such as the ability to standardize both the data collection and data analysis process were also considered during the evaluation of handhelds.

The partners reviewing handhelds also determined that even though some GATS countries demonstrate proficiency in handheld use, other GATS countries have limited handheld experience and will require assistance implementing handheld devices. Implementation assistance includes but is not limited to the training of appropriate country staff in questionnaire design/development, field interviews using handhelds, data security, and data transmission. RTI's expertise as global IT coordinator is well suited for assisting countries throughout the various stages of handheld implementation.

In conclusion, the partners are fully committed to handheld use for GATS. Additional and ongoing work will be needed to address logistics such as procurement, technical support, and data management; however, GATS partners continue to work together to ensure the successful implementation of handhelds for the survey.

5.2 General Survey System (GSS)

The GSS is a suite of software tools developed to facilitate the administration, collection, and management of survey data on handheld computers, often called Pocket PC systems. The software system is designed to support field data collection activities where Field Interviewers collect data using handheld computers. The software consists of six main programs, each dedicated to a specific function:

1. CMS: a case management system that allows users to manage the case load on the Pocket PC.
2. GSS Engine: a questionnaire development and presentation system engine that allows defining of data collection forms on a standard desktop PC and execution of these data collection forms or questionnaires on the Pocket PC.
3. Xmit: a data transmission program that allows bidirectional movement of data, program updates, and control information to and from the Pocket PC over dialup, wireless, or wired Ethernet.

4. Developer's Tool Set: a developer's menu system that organizes the access to the PC-based components of GSS.
5. Designer: a questionnaire design program that provides a visual interface for preparing and/or modifying a survey instrument. The Designer allows the creation, deletion, and modification of questions in two languages at a time in the GSS.
6. Project Web site: a Web-based suite of tools that facilitates survey management, survey monitoring, and reporting, and brokers the data transmissions to and from the Pocket PC to back end database servers.

Three of the major programs — CMS, GSS, and Xmit — run on the mobile-based handheld that the Field Interviewer uses, and the developers' tools run on a Microsoft Windows-based laptop or desktop PC. The Project Web site runs on a centralized desktop or laptop Microsoft IIS Web Server running ASP.net Web pages linked to a Microsoft SQL Server database for data storage.

It is expected that most countries will use a card-based data collection and management system. Field Interviewer data will be collected and combined daily onto a Field Supervisor or Team Leader laptop. Subsequently, the Field Supervisor or Team Leader will upload the data to a centralized Country NDC FTP site or bring in/send the data to the NDC at a regular interval. For this scenario, the Country project Web site and Xmit functionality will not be used.

6. Sample Weights: Review and Finalization Process

6.1 Review Process and Timeline

Action Number	Resp.	Task
1	CDC	• Send *GATS Sample Weights Manual* (including standard sample weighting process and requirements) to IA
2	IA	• Review of standard sample weighting requirements and acquire preliminary information required for the sample weighting discussions • Prepare a summary of sample weighting process and procedures, and forward it to CDC focal point for approval
3	SRC	• Review summarized process and proposed sample weighting procedure • Send approval on the weighting process or suggestions/adaptations on sample weighting to IA through CDC focal point
4	IA	• Work with CDC focal point to finalize the adapted/approved procedures and compute sample weights and related quality assurance measures on sample weights. • Send the detailed procedure and quality assurance measures to SRC through CDC focal point
5	CDC, SRC	Review Process: • CDC focal point to review and organize expert review on sample weights and related quality assurance measures • Convey the approval of sample weights to IA • Communication and technical assistance between IA and SRC to finalize sample weights as needed
6	IA	• Upon receiving SRC approval notification in writing, start the country report statistical tables generation

CDC	*Centers for Disease Control and Prevention*	SRC	*Sample Review Committee*
IA	*Implementing Agency*	WHO RO	*WHO Regional Office*

Notes:

- SRC oversees both sample design and computation of sample weights and quality assurance approvals.
- The process is strictly confidential and at any stage the sample design/weights, in part or full, should not be disclosed or shared to any other members or person outside SRC without the prior approval/permission from the IA and CDC.
- Communication between IA and CDC focal point should be copied to the WHO RO.
- Titles of documents should consist of the date in which they were created to ensure version control.

Timeline for Sample Weights and Quality Assurance Review Process

Action Number	Task	Number of days
3	SRC will review the proposed process and procedures of sample weights	4 working days
3	Based on the comments if needed, a conference call will be organized with available SRC members and IA and/or NSO focal point to finalize sample weights (CDC focal point will schedule the call)	1 working days
5	SRC will review the sample weights and related quality assurance measures	5 working days
5	Further adaptation/implementation of sample weights computations and additional quality assurance measures as needed	5 working days
5	Ongoing technical assistance will be provided by experts to IA as needed until the sample weights and related quality assurance measures are computed	Ongoing
	Total working duration	15 working days

Note: SRC members are requested to give their comments in writing (with clarifications) to ease the process.

6.2 Quality Assurance of Sample Weights — Reporting Template

I. Key documentation on sample weighting process

Include the following for the review and finalization of sample weights:

- Key accomplishments and processes on fieldwork and data collection
- Sample selection process and members participated in production of sample selection
- Description of data collection operation
- Objectives and outcomes of sample weights workshop, if relevant
- Sample weighting process description and members participated in sample weighting
- Quality assurance (QA) checks of sample weighting (refer the checklist below)
- Relevant tables and information be provided to verify the computational checks of sample weighting

II. Checklist on quality control measures for producing sample weights

1. Careful documentation of sample selection steps
2. Compute measures of the multiplicative effect of variable sample weights for the sample overall and for all population subgroups for which GATS findings are to be presented (e.g., by gender, urban-rural, region, etc.);

   Compute: $\text{Meff}_w = 1 + \frac{s_w^2}{\bar{w}^2}$ $\left(\text{trim weights if } > 2.00\right)$
3. Compute and profile estimates of the overall design effect *(Deff)* for all tobacco use prevalence rate estimates to be presented in the factsheet of GATS findings, indicating <u>also</u> for each estimate:
   a. The number of GATS respondents use to produce the estimate, and
   b. The estimated standard error (or relative standard error) of the estimate.
4. Some computational checks:
   a. Certify that computation of weights was independently verified by another knowledgeable staff person;
   b. Compare the average size of base weights and nonresponse-adjusted weights by computing: $\bar{B}/\bar{W}^{(nr)} \approx \text{Overall Response Rate}$
   c. Demonstrate that the weighted distribution of final sample weights, by post-stratification adjustment cells, matches the distribution of population counts by cell;
   d. Verify that the sum of final sample weights = population size; and
   e. Profile the size of post-stratification adjustments, which should be slightly less or greater than 1.00.

Notes:

- It is recommended that an Excel table be provided to verify checks related to 4c, 4d, and 4e.
- The completed template should be submitted to the CDC focal point for SRC approval.
- Please refer to the *GATS Sample Weights Manual* and *GATS Quality Assurance: Guidelines and Documentation* (*Chapter 5*) for additional details.

Appendix A: Frequently Asked Questions

What is GATS?

The Global Adult Tobacco Survey (GATS) is a standardized global survey used to systematically monitor adult tobacco use and track key tobacco control indicators. GATS is a nationally representative household survey of adults aged 15 years and older, using a consistent and standard protocol which enables unprecedented cross-country and change-over-time comparisons for countries that repeat the survey. GATS is a component of the Global Tobacco Surveillance System (GTSS) which also includes: the Global Youth Tobacco Survey (GYTS); the Global School Personnel Survey (GSPS); and the Global Health Professions Student Survey (GHPSS).

Who are the national partners and international partners in GATS?

National partners include the ministry of health as the lead coordinating agency for GATS and either the national statistical organization or a renowned survey institute as the implementing agency. International partners include the World Health Organization (WHO), U.S. Centers for Disease Control and Prevention (CDC), Johns Hopkins Bloomberg School of Public Health, RTI International, and the CDC Foundation.

Why monitor tobacco use among adults?

Tobacco is the leading preventable cause of premature disease and death worldwide. Tobacco control requires an effective surveillance mechanism to monitor trends in prevalence and other key indicators such as smoke-free environments, advertising bans, and cessation. Surveillance and monitoring are important public health tobacco use tools. They provide critical information to strengthen programs and policies, and to evaluate their effectiveness. “If you can’t measure it, you can’t manage it.”

How many countries have completed GATS?

Fourteen countries (Bangladesh, Brazil, China, Egypt, India, Mexico, Philippines, Poland, Russian Federation, Thailand, Turkey, Ukraine, Uruguay and Viet Nam) completed GATS during 2008-2010. Eight countries (Argentina, Indonesia, Malaysia, Nigeria, Pakistan, Panama, Romania and South Africa) are planning to implement GATS in 2011. Thailand is repeating the survey in 2011.

What topics are covered in GATS?

GATS includes information on respondents’ background characteristics, tobacco use (smoking and smokeless tobacco), cessation, secondhand smoke exposure, economic situation, mass media exposure, and knowledge, attitudes and perceptions towards tobacco use.

What can be accomplished with GATS at the country level?

Countries will have nationally representative data on tobacco use among their adults and on key measures of tobacco control. In addition, the data collected can be compared across countries that implemented GATS. Thus, the survey results can be used to better understand comparative patterns of tobacco use between countries. These can be used to create more effective control programs and monitor the impact of these programs. Over time, GATS will provide detailed information on a range of tobacco-control topics, including cessation, secondhand smoke, economics, media, and knowledge, attitudes, and perceptions. Countries will also have an opportunity to be a part of the GTSS network.

How does GATS relate to the World Health Organization's Framework Convention on Tobacco Control (WHO FCTC) and the WHO MPOWER package?

GATS data will assist countries in monitoring and tracking selected articles of the WHO FCTC and will enable them to develop, implement, and evaluate comprehensive national programs, policies, and action plans in tobacco control. Article 20 of the WHO FCTC calls on countries to monitor tobacco use through surveillance, monitoring, and the exchange of information. Countries that are parties to the WHO FCTC can also use the data for reporting purposes.

GATS data will serve as a tool to monitor the WHO MPOWER, a package of selected measures for reducing demand for tobacco that are contained in the WHO FCTC:

Monitor tobacco use and prevention policies
Protect people from tobacco smoke
Offer help to quit tobacco use
Warn about the dangers of tobacco
Enforce bans on tobacco advertising, promotion, and sponsorship
Raise taxes on tobacco

When will GATS data become publicly available?

GATS data will be released after the country's report is finalized and released by its national government (ministry of health) no later than one year following the completion of data collection and approval of the data by the Data Coordinating Center at the CDC in Atlanta, Georgia, USA.

When will GATS be repeated?

Countries are encouraged to repeat the survey every 4-5 years.

What is the role of the Data Coordinating Center (DCC)?

CDC serves as the Data Coordinating Center and depository of GTSS data. The DCC provides data management, quality assurance, standardization, and data repository functions along with provisioning data sharing, release and dissemination. The DCC ensures the following:

- Individual countries can be assured their data will receive high quality support;
- As countries begin to repeat surveys, they will be assured that their analysis of trends will be grounded in strong and consistent statistical procedures and practices; and
- A coordinated process will enable standardized analysis which will be important to the direction and development of global tobacco control programs and policies.

How is GATS different from other surveys?

GATS is a stand-alone, in-depth tobacco survey using a standard and consistent protocol (questionnaire, sample design, training, data collection and management, quality assurance, and data analysis and reporting). Data are collected face-to-face using handheld computers. Using a standard set of GATS questions will improve the comparability of survey estimates over time and harmonize these estimates with the results of international tobacco surveillance and monitoring activities.

What are the requirements for countries to be a part of GATS and the Global Tobacco Surveillance System?

To be a part of GATS and GTSS, countries must adhere to the scientific and technical requirements of the GATS comprehensive standard protocol. This means that the country must have its proposed questionnaire on tobacco use approved by a GATS expert review committee. In addition to reviewing the questionnaire, the committee will examine the sample design, sample weights, quality assurance measures, and plan for analysis of the data obtained. If a country wishes to incorporate questions on tobacco use into its existing surveys, that country can be considered a part of GTSS provided it follows all the technical and scientific requirements of the GATS comprehensive standard protocol. This is to ensure standardization and enable cross-country comparisons.

How does a country get involved in GATS?

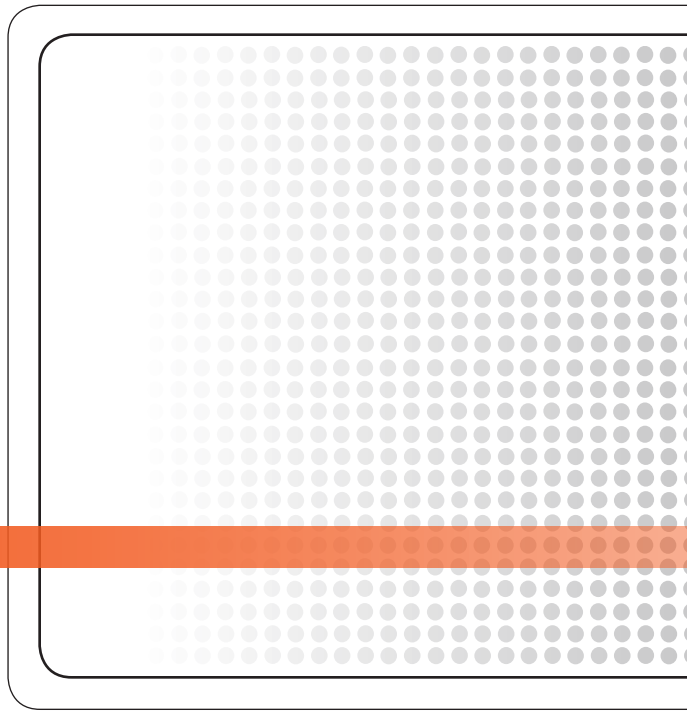
If a country is interested in implementing GATS it should contact the WHO or the CDC.

What is the mechanism for countries that partially or fully fund GATS and wish to be a part of GTSS?

Countries may decide to fully or partially fund the implementation of GATS. However, to be part of the GTSS, countries must adhere to the technical and scientific requirements of the GATS comprehensive standard protocol. Technical assistance and review of the protocol and its approval by experts are available from WHO and CDC for all countries.

What mechanisms other than the stand-alone GATS are available to countries to monitor tobacco use?

To promote systematic monitoring of tobacco use, countries around the world can use a standard subset of 22 questions selected from the GATS Core Questionnaire entitled "*Tobacco Questions for Surveys: A Subset of Key Questions from the Global Adult Tobacco Survey (GATS).*" Using these questions will help countries improve the comparability of their national survey estimates over time and harmonize them with findings from international tobacco surveillance and monitoring activities. Within their existing national surveys, countries can add their own tobacco module and/or incorporate the standard subset of 22 GATS questions. Data collected using TQS, however, may not generate comparable global estimates with GATS due to methodological differences.



GLOBAL TOBACCO SURVEILLANCE SYSTEM (GTSS)