USAID GUYANA HIV/AIDS REDUCTION & PREVENTION (GHARP) PROGRAM

Monitoring and Reporting Detail Database

DATA BASE ADMINISTRATION

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INTRODUCTION

The USAID Guyana HIV/AIDS Reduction Program (GHARP) – Monitoring and Reporting Summary database is a computerized system designed to capture the data required by the National Monitoring and Reporting Guidelines. These reporting guidelines are to be used by non-governmental organizations implementing HIV/AIDS programs in Guyana.

A working version of these guidelines was published in December 2007. These guidelines define frontline tools, or reporting forms, that NGO's are required to submit monthly. The forms capture monthly activity for a variety of programs including: Community Outreach, Materials Distributed, Multi-Session Programs, OVC and HBC.

An effort to electronically record this data was undertaken in early 2008 and is designed to:

- Reduce data input labor with easy to use data input procedures.
- Increase data input quality through data validation.
- Meet the auditing requirements of funding agencies.
- Provide a wide range of reporting.
- Support for ad-hoc queries.
- Generally enhance the ease of access, reliability, and scalability of Monitoring and Reporting data by placing the data in a Microsoft Access database.

This Monitoring and Reporting (MR) Summary Database Administration manual is designed to assist in the installation and maintenance of the MR Detail database. A User Guide is also available that provides detailed usage information.

HISTORICAL BACKGROUND

In December 2007 the Guyana HIV/AIDS Reduction Program (GHARP), a joint project of USAid and the Guyana national government, issued the National Monitoring and Reporting Guidelines. These guidelines are to be followed by those non-governmental organizations that implement HIV/AIDS programs in Guyana and receive funds from USAid, the World Bank, etc.

The National Monitoring and Reporting Guidelines established a manual, paper based, monthly reporting system. This Monitoring and Reporting Detail database is an equivalent software implementation of the manual procedures designed to record program detail data.

The database was written by a temporary GHARP consultant in April 2008

GHARP's initial funding expires in December 2008. It is unclear, at the time of this writing, what organization might continue to maintain this database. The purpose of this manual is to provide some background for the installation and long term maintenance of this Monitoring and Reporting Detail database.

The administrator of this MR Detail database should have the following background:

- A working knowledge of the December 2007 National Monitoring and Reporting Guidelines.
- General computer skills.
- Microsoft Access experience is not required for installation and usage of the system. If problems develop, or there is a desire to modify the system, then significant Microsoft Access and Visual Basic for Applications experience will be required.

Following is contact information for the original database consultant who authored this system. Note that the consultant is willing to provide no-cost, long term support, from the United States, on a "best effort" basis.

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INSTALLATION

The MR Detail database is supplied on a single CD which consists of one directory.

- **GHARPDatabases**. This directory contains the files necessary to run the MR Detail database. This directory may be placed anywhere that is convenient. Note that by placing the directory on a networked shared drive, and not a local c:\ drive, multiple users can conveniently have simultaneous access. The only installation requirement is that this directory be copied to a location of your choosing.

Also, note that system will automatically create the c:\Program Files\GHARP directory.

- **GHARP**. This directory contains the files necessary to support the built in help system. This directory, and all its sub-directories, must be placed in the directory: c:\Program Files. Note that the system automatically creates this directory on each computer that runs the database. It is not the responsibility of the database administrator to create this directory. If this directory does not get created correctly the only missing functionality will be the built in help system, and otherwise the system will function normally.

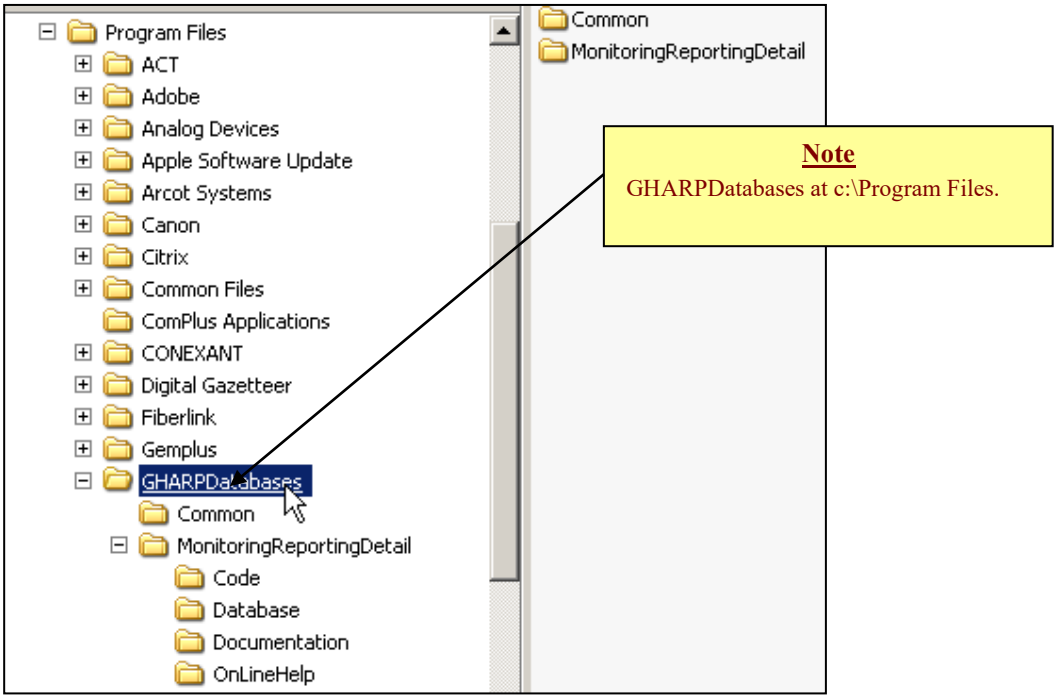
Note that no adjustments should be made to the above directories. Do not add, change, or delete any files or directories noted above. If you wish to track additional information along with the MR Detail database, please establish your own separate directory structures.

Special Note: The following installation procedures have been replaced by the automated procedure Install.xlm as detailed in the User Manual and the Support Personnel manual.

The following provides full instructions for the original installation of the MR-Detail database. While these instructions may be of interest, and provide some insight, to the database administrator, the following is performed only once during the original installation.

Also note that these instructions are a check list of the installation steps; it is assumed the installer has some background in installing the MR-Detail database.

	STEP	PURPOSE	PROCEDURE
1	Install GHARPDatabases directory containing the following two directories: 1) **MonitoringReportingDetail** 2) **Common**	**MonitoringRetportingDetail** contains directories: 1) **Code** (Excel .xlm VBA files and Excel .xlt template files) 2) **Database** (Access .mdb files) 3) **Documentation** (Word .doc files, and the Trouble Report with their Read-Only flag set) 4) **OnlineHelp** (support for the Build in Help)	**Installing for use on a single computer only.** Though designed to be placed at any location, the GHARPDatabases directory generally should be placed in c:\Program Files unless there is a specific reason not to.
		Common contains directories: 1) **Code** (single Common.xlm file) 2) **Misc** (single AccessSecurity.vbs file)	**Installing for use by multiple computers on an office network**. GHARPDatabases should be placed on a share drive accessible to all computers needing access to the database.



	STEP	PURPOSE	PROCEDURE
2	Ease the user startup process		1) Run AccessSecurity.vbs, (located in the GHARPDatabases\Common\Misc folder). This must be run from the c:\ drive of each computer that will run the database.
3	Initialize the data tables.	Clears out test data in the data tables Inserts required "dummy" rows	1) Open the ServiceProvider table, note the ServiceProviderID of the current Service Provider. 2) Open MonitoringReportingDetail.mdb. 3) Alt-F-11 to enter VBA 4) Locate the procedure ClearDataTables in the Admin module. 5) Set the value of: myServiceProviderID 6) Click F5 to execute.
4	Misc items		1) Supply a hard copy of the User Doc. 2) Provide a shortcut to the database on all computers that will run the system. Name the shortcut: **GHARP MR Detail DB**. 3) Set the shortcut to ReadOnly

	STEP	PURPOSE	PROCEDURE
5	Log NGO information	Maintain valuable support information	1) Add an NGO sheet to MRDetailSupport.xls 2) Add contact information to MRDetailSupport.xls in the ContactInfo sheet
6	**Test**: Program Areas And Reports		1) Each module 2) 1 Access report 3) 1 Excel report 4) User Doc button 5) Built-in help 6) Delete test data entered above
7	**Test**: Admin functions		1) Backup Database 2) MRDetailUpdate.zip (without a front end file) 3) Trouble Report 4) User Maint 5) CreateSystemAdmin.zip
8	Add users through User Maintenance		Give one person the ability to run the User Maintenance utility.

Access 2007 specific installation issues:

	STEP	PURPOSE	PROCEDURE
1	Enable Macros	Allow the front end VBA to execute.	1) Launch Access (not the database). From Access, select the Office Button in the top left of the screen. 2) Select Access Options in the bottom right. 3) From Access Options select Trust Center located on the left side of the screen. 4) Select Trust Center Settings… right side of screen. 5) In Trust Center, select Macro Settings. Enable all macros. See: …MonitoringReportingDetail\Misc\Access2007EnableMacros.doc for screen snapshots.

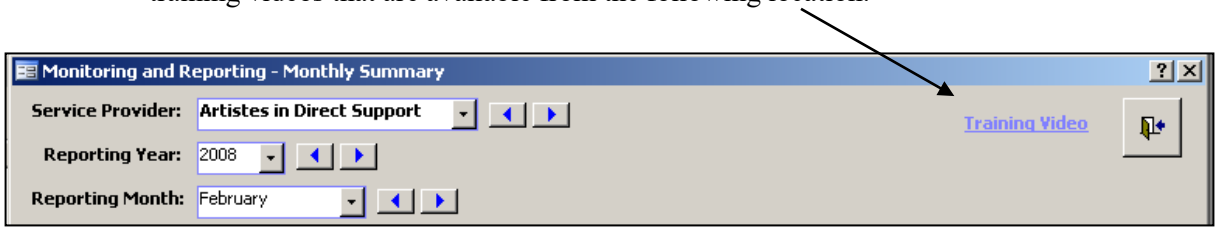
SOFTWARE DEVELOPMENT TOOLS

The following software was used to develop the MR Detail database:

- **Microsoft Access**. The primary database system, including the database tables, forms, and reports, were developed in Microsoft Access 2003. Both development and usage of this system require Microsoft Access. The system makes heavy use of Visual Basic for Applications.

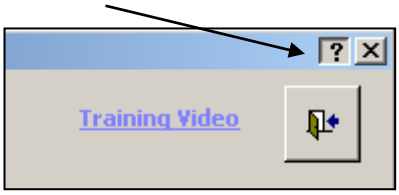
- **Microsoft Excel**. Many of the reports go beyond the capability of Microsoft Access reporting and are written under Excel using Visual Basic for Applications.

- **Qarbon Viewlet Builder 5**. As a training tool, the MR Detail database includes training videos that are available from the following location.



The training videos provide user tutorials, with screen snapshots, simulated mouse movements and descriptive text. Development of the training video requires Viewlet Builder 5 which is available from www.Qarbon.com. Usage of the training video requires Internet Explorer with Flash enabled.

- **HTML Help Workshop**. Built in help is available throughout the MR Detail database and is accessed here.



HTML Help Workshop is a software product that builds the necessary files to implement the built in help system. A full explanation of the HTML Help Workshop is beyond the scope of this manual. The software can be located, and downloaded free, through a Google search. No special software is required to use the built in help system.

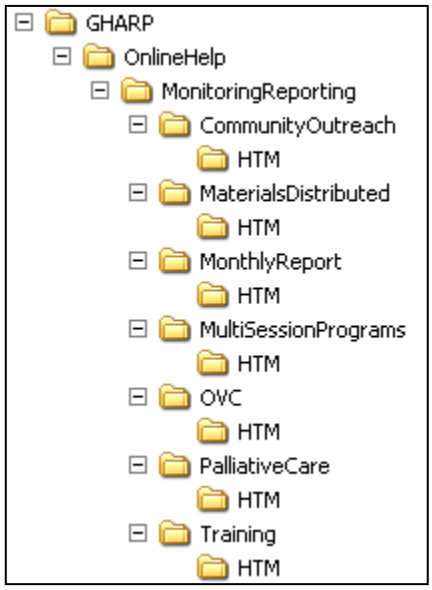
- **Microsoft Word**. Used to create the MR Detail User Guide and Database Administration manual.

SYSTEM DIRECTORY STRUCTURE

The entire system consists of two directories:

1) **GHARPDatabases**. This directory is supplied on the installation CD. The directory may be placed anywhere. During the initial startup from a new location, the system "learns" its location. Do not make any adjustments to this directory structure or its files.

2) **GHARP**. This directory structure is created in the c:\Program Files directory of each computer that runs the MR Detail database. The system administrator does not have any responsibilities regarding this directory. The lack of this directory will disable only the built in help system; the database itself will function normally. Do not make any adjustments to this directory structure or its files.



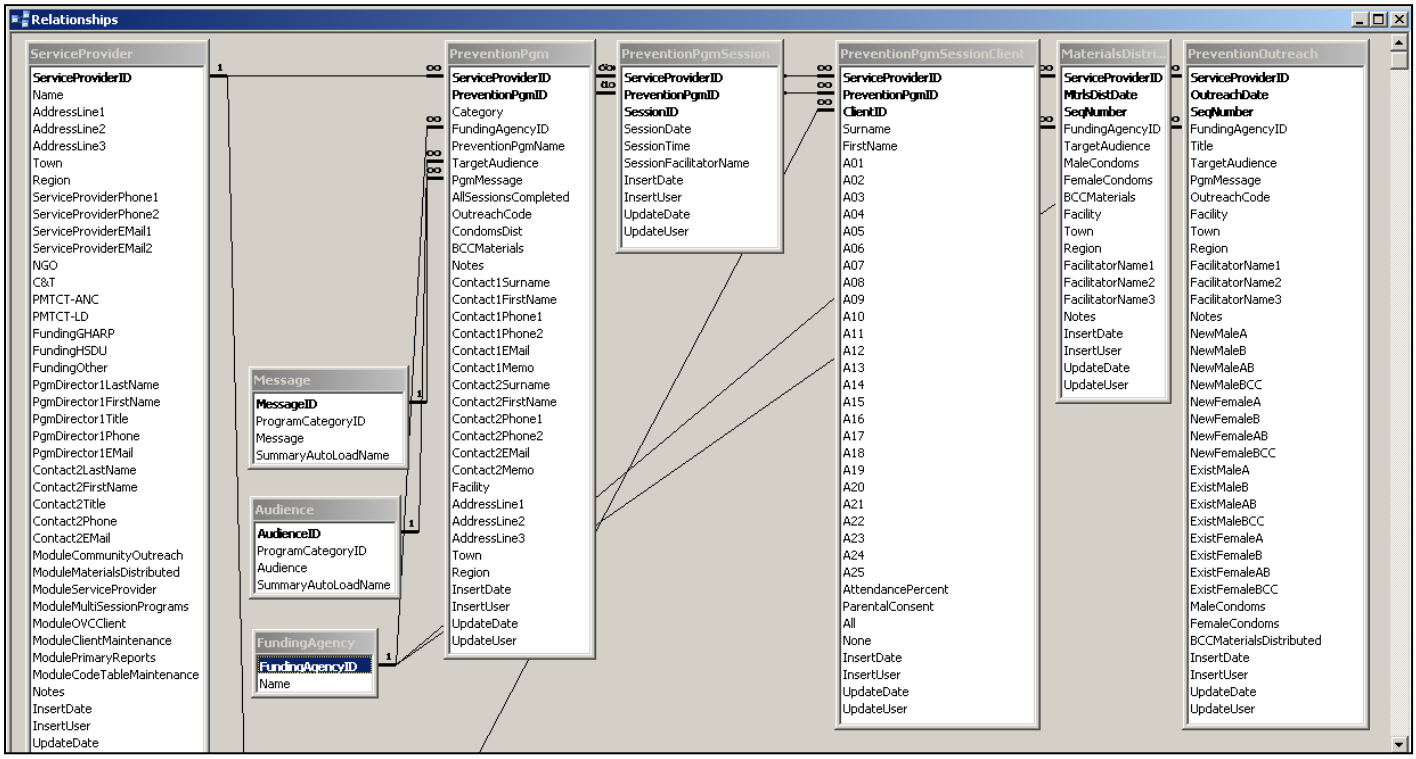
Within the MonitoringReportingDetail/Database folder are the two Access files that comprise the database. MonitoringReportingDetail_be.mdb contains the Access tables which contain the actual data. All other Access objects are in MonitoringReportingDetail.mdb:

Using the system requires the user launch: MonitoringReportingDetail.mdb.

DATABASE TABLES

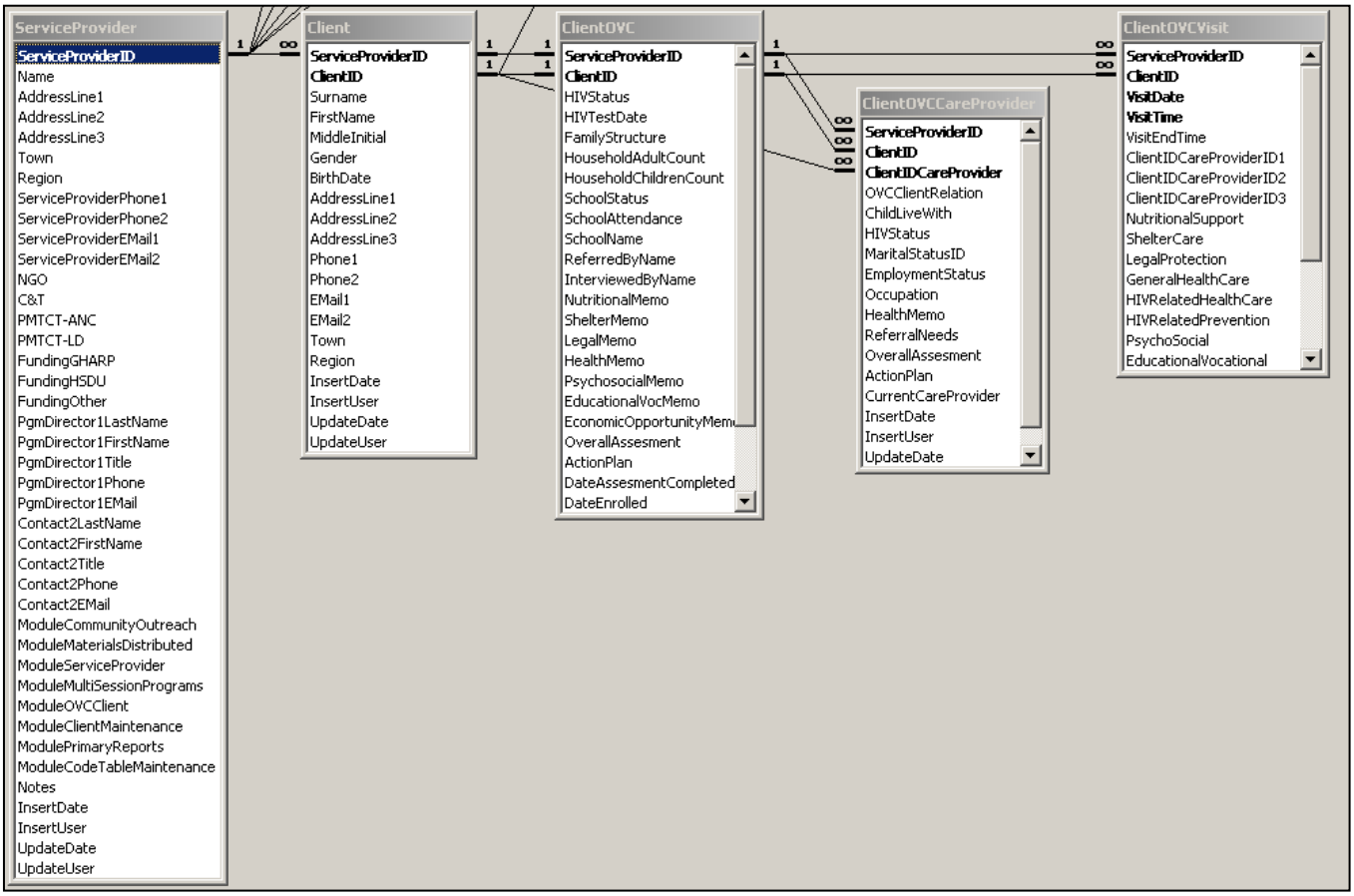
The database tables and their relationships are presented in the following three screen snapshots.

The following tables support the Community Outreach, Materials Distributed, and Multi-Session Programs modules.



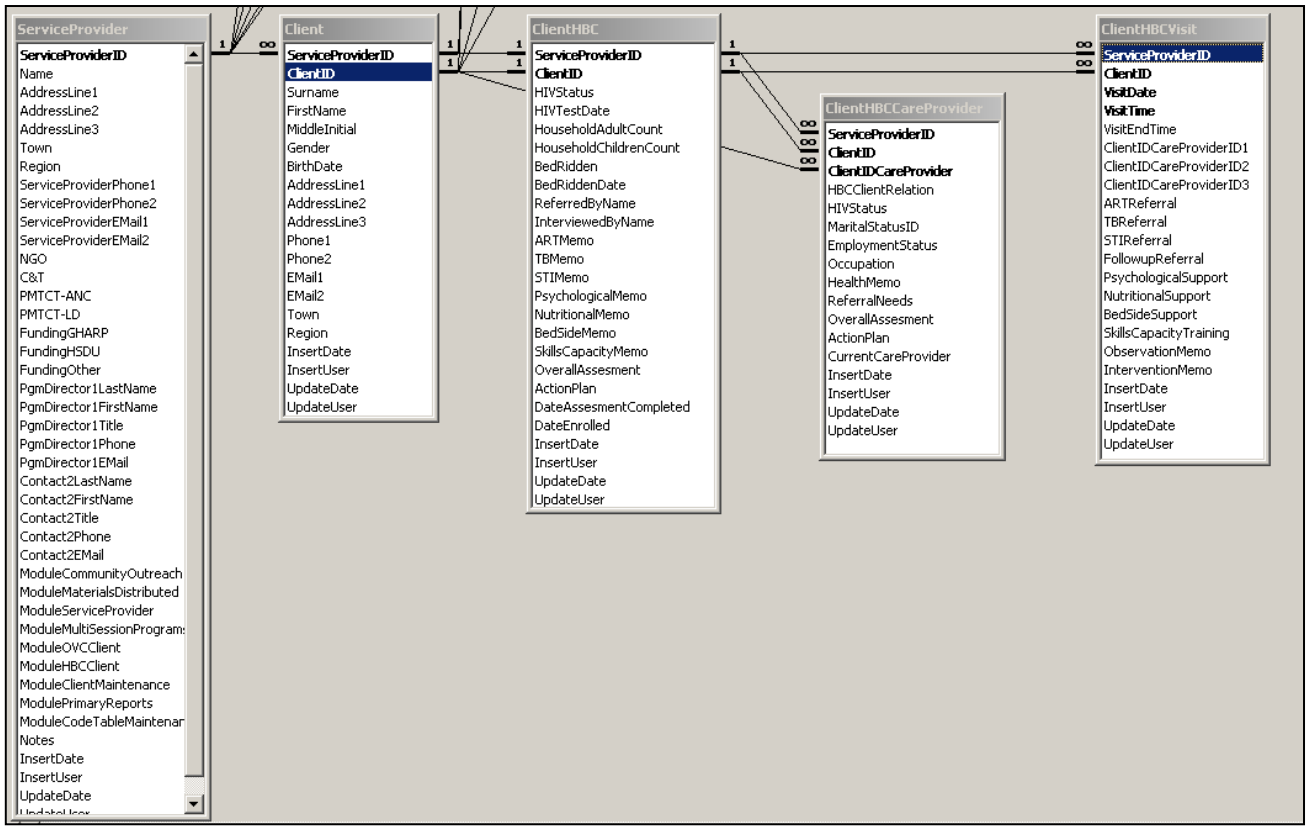
Tables for: Community Outreach, Materials Distributed and Multi-Session Programs.

The following tables support the Orphans and Vulnerable Children module.



Tables for: Orphans and Vulnerable Children.

The following tables support the Home Based Care module.



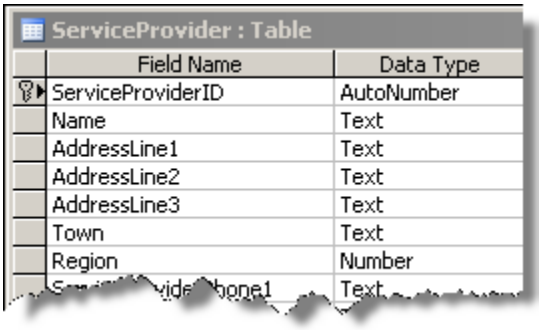
Tables for: Home Based Care.

The database tables can generally be divided into the following groups.

1) **Service Provider**. This table contains information regarding each Service Provider. An Auto Number serves as the primary key. The primary key is named ServiceProviderID and it uniquely identifies a single Service Provider. The term 'ServiceProvider' is intended as a generic term that can encompass NGO's, HSDU units, etc.

   Along with the unique ServiceProviderID there are many fields that contain basic information about the Service Provider, like address, phone, e-mail, etc. info.

   ServiceProviderID serves as the initial field in all data tables. The long term goal is that data from multiple Service Providers could exist in a single database without concern for data collisions. The system was initially developed and tested using data tables with multiple Service Providers, so the system is known to support tables that contain data from multiple Service Providers. However, combining the data provided by multiple Service Providers may be challenging. No procedures for combining data from multiple Service Providers has been developed.



ServiceProvider : Table

Field Name	Data Type
ServiceProviderID	AutoNumber
Name	Text
AddressLine1	Text
AddressLine2	Text
AddressLine3	Text
Town	Text
Region	Number
[illegible]hone1	Text

2) **Data tables**. The following 12 tables contain the actual Service Provider data.

1	Client
2	ClientHBC
3	ClientHBCCareProvider
4	ClientHBCVisit
5	ClientOVC
6	ClientOVCCareProvider
7	ClientOVCVisit
8	MaterialsDistributed
9	PreventionOutreach
10	PreventionPgm
11	PreventionPgmSession
12	PreventionPgmSessionClient

Generally, each data table has 3 parts:

- Primary key. The primary key which begins with ServiceProviderID as noted above in the discussion of the ServiceProvider table.
- Data. A wide range of columns specific to the needs of the individual table.
- Audit Columns. InsertDate and InsertUser indicate who and when the row was originally inserted, and once written, these values do not change for a given row. UpdateDate and UpdateUser indicate the last person to adjust the row. Auditing information can be helpful in troubleshooting.

3) **Code tables**. The tables Audience, FundingAgency, and Message contain ServiceProvider specific codes. For example, FundingAgency contains the list of all agencies that fund a Service Providers programs. This list varies across the Service Providers.

Individual Service Providers may add rows to the code tables through the Code Table Maintenance selection in the Admin tab of the main switchboard. There is no support for removing codes from the code tables. Also note that, unfortunately, the Code tables do not begin with ServiceProviderID. Any attempt to combine data from multiple Service Providers will first need to add ServiceProviderID as the first field in each code table.

4) **Misc tables**. There are two miscellaneous support tables: AppMetrics and MonthName.

AppMetrics records the usage of the system. A record is written to AppMetrics when modules are launched, reports are produced, and when selected system features are executed. The recording of system usage can be helpful in a variety of trouble shooting scenarios, and to document the business value of the system. Like the code tables, AppMetric does not begin with ServiceProviderID. Additional loggings can easily be added through a single line of code similar to the following (which logs the production of the Multi-Session Sign-In Register):

```
Call WriteAppMetrics("Sign-In Register Report", 1)
```

MonthName provides a convenient way to map a month number to a long version of the month name (for example, ‘January’), and a short version of the name (for example: ‘Jan’).

PROGRAM MODULES

The MR Detail database consists of the following modules:

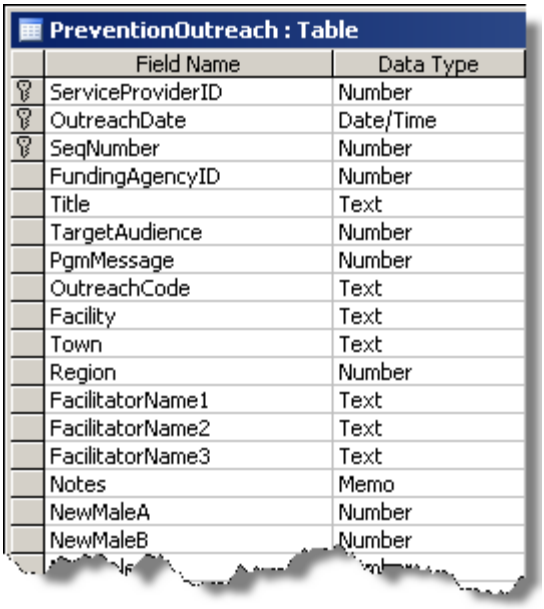
1. Community Outreach
2. Materials Distributed
3. Multi-Session Programs and Training
4. Orphans and Vulnerable Children
5. Home Based Care
6. Client Maintenance

The database objects required to support these modules tend to fall under two categories.

1. **Single table**. These modules are straight forward, requiring a single Access database table, and a single form (possible with multiple sub-forms). Data entry is accomplished by inserting rows into the single table. An example is the Community Outreach module, and it is detailed below. The other single table modules follow a very similar pattern.
2. **Multiple table**. These modules are more complex, requiring multiple, related, Access database tables and multiple forms. The multiple table modules are: Multi-Session Programs, Home Based Care, and Orphans and Vulnerable Children. Since these modules are more complex, and each is individually detailed below.

Community Outreach

The Community Outreach module is supported by the PreventionOutreach table below:



PreventionOutreach : Table

	Field Name	Data Type
🔑	ServiceProviderID	Number
🔑	OutreachDate	Date/Time
🔑	SeqNumber	Number
	FundingAgencyID	Number
	Title	Text
	TargetAudience	Number
	PgmMessage	Number
	OutreachCode	Text
	Facility	Text
	Town	Text
	Region	Number
	FacilitatorName1	Text
	FacilitatorName2	Text
	FacilitatorName3	Text
	Notes	Memo
	NewMaleA	Number
	NewMaleB	Number

PreventionOutreach is uniquely keyed on: ServiceProviderID + OutreachDate + SeqNumber.

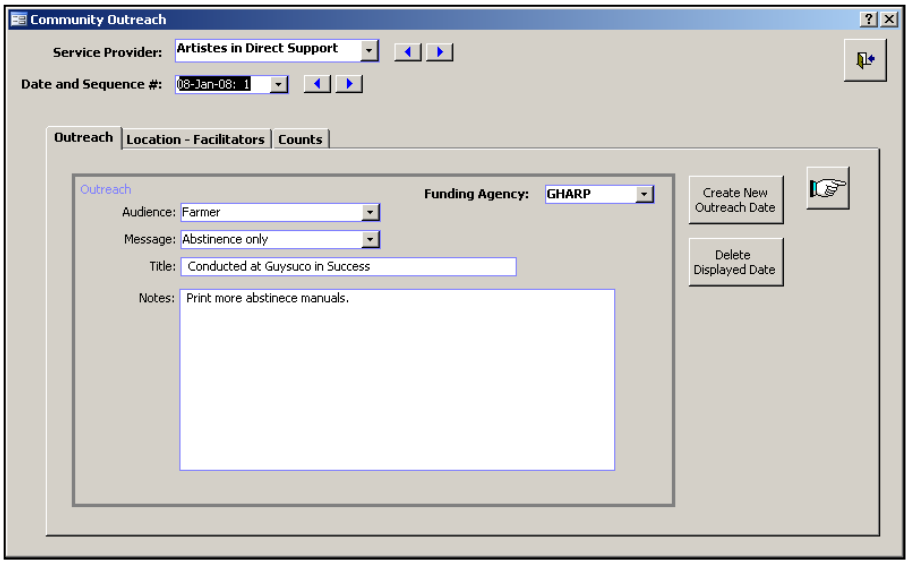
Regarding the role of ServiceProviderID throughout the MR-Detail system, the following critical points should be understood:

- For all MR-Detail data tables ServiceProviderID is the initial field in the key. This value is uniquely established in the ServiceProvider table when a Service Provider is initially created, and the relationship is the following:

- The MR-Detail system is designed to be run at multiple Service Providers. However, note that the systems will not physically share the same data. For example, NGO #1 and NGO #2 will use the same MonitoringReportingDetail.mdb file (i.e., the forms, reports, etc will be identical). However NGO #1 and NGO #2 will not share the same MonitoringReportingDetail_be.mdb files (the format of the tables will be identical for all Service Providers, but the actual data in those tables will not be shared).

- Placing ServiceProviderID as the initial field in the key will allow a central location, like GHARP or MOH, to centrally merge MonitoringReportingDetail_be.mdb tables from multiple Service Providers without fear of one Service Providers data over writing another.
- Many MR-Detail forms have a drop down selector for Service Provider. However note that when installed at a single Service Provider, the only row in the ServiceProvider table will be the single row for that particular Service Provider. Also, note that the Service Provider module is de-activated (by turning ServiceProvider. ModuleServiceProvider off), thus preventing additional rows being added. So when run at a single Service Provider only one Service Provider is selectable.

Collection of Community Outreach data is captured through the following:



The logic followed by the system is essentially the following:

- The system automatically populates Service Provider as discussed above.
- Date and Sequence # are populated in descending order (i.e. the most recent Outreach is listed first).
- When an Outreach is selected, the data in each tab is populated, and the user may make adjustments to the data as desired. (See the MR-Detail User Guide for a review of the user interface).
- Each new Outreach writes a single row to CommunityOutreach.
- Note that almost all MR-Detail tables contain the following auditing fields. The InsertDate and InsertUser are set when the row is first written, and their data never changes. The UpdateDate and UpdateUser fields are adjusted each time the row is updated. Note that the user field is populated with the USERNAME environmental variable (i.e. the username entered when the computer is turned on).

PreventionOutreach : Table

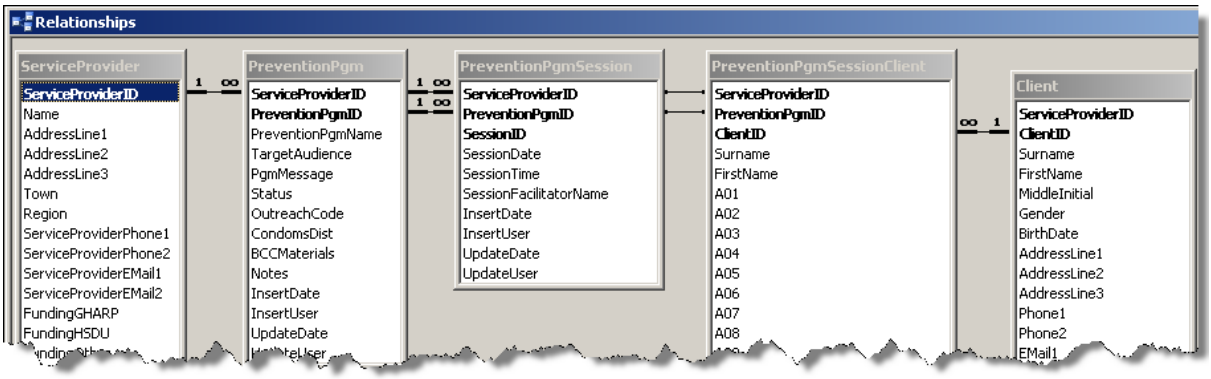
Field Name	Data Type
InsertDate	Date/Time
InsertUser	Text
UpdateDate	Date/Time
UpdateUser	Text

Materials Distributed

Materials Distributed is driven off the MaterilasDistributed table, and operates in an identical manner as the Community Outreach table.

Multi-Session Programs and Training

The Multi-Session Programs module is supported by the following tables: ServiceProvider, Client, PreventionPgm, PreventionPgmSession, PreventionPgmSessionClient. The relationship of these tables is presented below. See the MR-Detail User Guide for user interface details.



The Multi-Session Programs module supports the following objects which establish the relationships between the tables:

- **Program**. The overarching term, or object, that details "header" information for a series of meetings. The PreventionPgm table establishes the Program and is keyed by ServiceProviderID + PreventionPgmID (an Access generated field of type AutoNumber). A single Program will have a single PreventionPgm row.
- **Session**. A Program consists of a series of meetings, or times when the Program meets with Clients. For each Session established by the user, a single row is written to the PreventionPgmSession table.

  When the Program is initially established there are zero PreventionPgmSession rows. There is a system limit of 25 Sessions per Program. Note that this limitation is somewhat arbitrary, and could, with modest difficulty, be increased. However, note that if this maximum of 25 is an issue (and occurs very infrequently), another option is to split the single Program into multiple Programs.

  The PreventionPgmSession table is keyed on ServiceProviderID + PreventionPgmID + SessionID (an Access generated field of type AutoNumber). The data content of the row is essentially the date, time, and facilitator of the single Session.

  When creating Session rows, note that there is no requirement that Sessions be added in date/time order.
- **Client**. Clients attend the Sessions, and their attendance at each Session is recorded in the PreventionPgmSessionClient table. The PreventionPgmSessionClient table is keyed on ServiceProviderID + PreventionPgmID + ClientID.

  For each client participating in a Program, a single row is written to the table. A series of yes/no fields, named A01, A02… up to A25 record attendance. Field A01 references attendance in the first Session that occurs in date/time order, field A02 references the second Session, etc.

  Note the following scenario:

  - The user establishes a new Program with three Sessions. The Sessions are to meet on Monday, Wednesday, and Friday. Several Clients are assigned to the Program.

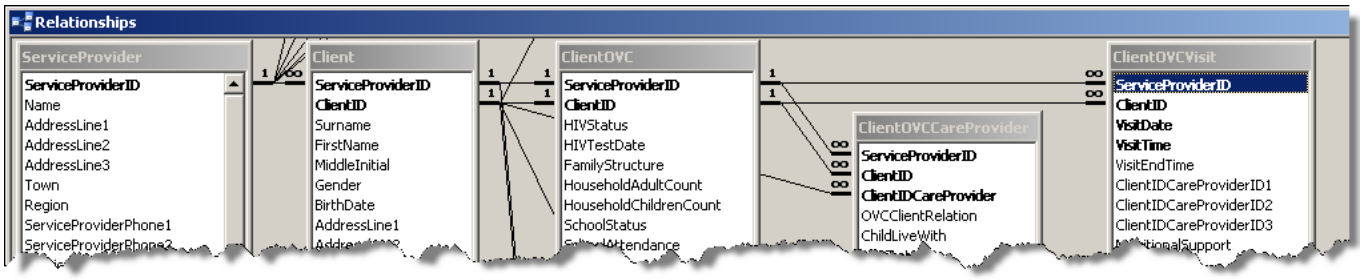
- The Monday Session is held and Client attendance is recorded in the system. Note that the A01 field represents the Monday session, A02 the Wednesday session, etc.
- The facilitator decides to add a Tuesday session. That is, the new Tuesday Session occurs between the Monday and Wednesday Sessions.
- The system will shift the attendance fields in the PreventionPgmSessionClient table to accommodate the newly added Session that falls between the initially established Sessions.
- The same procedure occurs if Sessions are deleted, so the end result is that the A01 fields always match the Date/Time order of the Sessions.

As a special note, notice that Surname and FirstName are recorded in the PreventionPgmSessionClient table even though ClientID exists in the table. In standard database design the ClientID would be sufficient, and would be used to lookup all additional Client information. The unusual addition of the name fields to this table was done as a user interface convenience for the frmPreventionClient form. Also, note that the Client Maintenance module will adjust the Surname and FirstName in PreventionPgmSessionClient in the unusual event either is changed in Client Maintenance.

OVC and HBC

MR-Detail supports both Orphans and Vulnerable Children (OVC), and Home Based Care (HBC). While separate, the modules function virtually identically, and differ primarily in the services provided and a few of the indicators. For purposes of this documentation, only OVC is discussed.

The Orphans and Vulnerable Childern (OVC) module is supported by the following tables: ServiceProvider, Client, ClientOVC, ClientOVCCareProvider, and ClientOVCVisit. The relationship of these tables is presented below. See the MR-Detail User Guide for user interface details.



OVC specific tables are discussed below:

- **ClientOVC**. This table contains Client information specific to an OVC client. Most information is either OVC Client profile information (for example: HIV status, number of adults in household, family structure, etc), or Client Risk Assessment information (school attendance, nutrition information, etc.). Also note that there are several memo fields that can be used for extensive narratives.

  The primary key for ClientOVC is ServiceProviderID + ClientID. Note that ClientID is **not** an AutoNumber. The ServiceProviderID + ClientID is the same ServiceProviderID + ClientID that exists in the Client table.

  Think of ClientOVC as an extension of Client. Since the ClientOVC can be large (particularly with the number of memo fields), and will be used by only OVC clients, the single "logical" table is broken out into two separate "physical" tables to save space.

- **ClientOVCCareProvider**. This table contains details regarding Care Providers for OVC clients. Examples of the collected information includes: care provider relation to the OVC Client, occupation, and employment status.

  The primary key for ClientOVCCareProvider is: ServiceProviderID + ClientID + ClientIDCareProvider. Note that ServiceProviderID + ClientID point, of course, to the OVC Client. ClientIDCareProvider points to the Care Provider ClientID within the Client table.

  It is important to note that a single person could serve as a Care Provider for multiple OVC Clients. Thus the same person can be in the ClientOVCCareProvider table multiple times, once for each OVC Client they serve as a Care Provider for.

- **ClientOVCVisit**. The table contains details regarding individual Care Provider visits to an OVC Client. Examples of collected information include: observation information, support provided, and the Care Provider(s) that visited.

  The primary key for ClientOVCVisit is: ServiceProviderID + ClientID + VisitDate + VisitTime.

Client Maintenance

Client Maintenance is supported by the single Client table keyed on ServiceProvoderID + ClientID (an AutoNumber). The data consists primarily of contact information.

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The primary noteworthy item regarding processing of the Client table is the systems ability to identify, and most likely prevent, multiple entries of the same person. The system uses a procedure referred to as the Levenshtein Distance to calculate "similarity" between two names.

A full review of this procedure can be found at: www.merriampark.com/ld.htm. The same article can be located in the file named: \Common\Misc\Levenshtein Distance.htm.

REMOTE SUPPORT

As noted in the section Historical Background, the database consultant who originally authored the MR Detail database is willing to provide no-cost, long term support, from the United States, on a "best effort" basis. Support will generally fall into one of two categories:

- **Bug Fixes**. Bug fixes are specific failings in existing functionality. Such errors might include: the display of the VBA debug dialog box, reports that present erroneous data, or the inability to perform a system feature as described in the MR Detail User Guide. Such errors will, if at all possible, be given high priority.

- **Enhancements**. Enhancements generally cover requests for new functionality. For example, additional reports, the capture of new data, or requests for new software features that do not exist in the MR Detail User Guide. While all such requests will be considered, no promises for implementation are made.

  Criteria for the possible implementation of enhancements include: the estimated time required, the number of Service Providers that would benefit from the enhancement, the degree of functionality that would be added, and how often the enhancement would be used.

The MR Detail User Guide has a section titled Trouble Report which details how and where to submit requests for service.