Chairman	Kenneth Mattox, M.D.
Chief Executive Officer	Darrell Pile
Vice Chair-Hospital Services	Tom Flanagan
Vice Chair-PreHospital Services	Lon Squyres
Secretary	John Kowalik
Treasurer	Amanda Campos
Member at Large	David Persse, M.D.

SouthEast Texas Regional Advisory Council (Trauma Service Area Q)

Austin, Colorado, Fort Bend, Harris, Matagorda, Montgomery, Walker, Waller and Wharton Counties

SETRAC Data Repository (SDR)

Database Design Document

Version 1.0

9/21/2016

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1.   Introduction

The SouthEast Texas Regional Advisory Council (SETRAC) is a 501(c)(3) non-profit, tax-exempt organization whose primary function is to provide stakeholder support through planning, facilitation, operations, and the provision of technical assistance to the region for preparedness, trauma, injury prevention, stroke, cardiac, and pediatric services. As a coalition, we foster collaboration to educate our communities and to collectively deliver exceptional care with appropriately trained providers.

To assist in providing the best regional systems of care, SETRAC has implemented an application which allows facilities and EMS agencies to input data through a web based portal. This information is collected to provide regional reports to facility/agency executives, the SETRAC Board of Directors, and SETRAC committees to identify improvements to the system of care, serve as a guide in selecting community education topics, and institute processes and guidelines that are replicated in other regions of the state and nation. There is now a need to increase the performance and capabilities of the SDR to support ongoing and future programs.

The purpose of this document is to propose the replacement of the current system and add features to make the system more user friendly, manageable, and increase staff efficiency. The SDR will retain current features and historical data, but will add the ability to import and query data as well as provide custom and static reports.

2.   Scope and Limitation of the System

At this time, the SDR is limited to the facilities and EMS agencies authorize by SETRAC; however, the system should be flexible enough to accommodate future growth and currently unimagined improvements.

Each facility/agency will identify the authorized users for the SDR, who will be required to register an account in the database. Once registered, a notification will be sent to the database administrator(s), who will activate the account after a non-electronic verification process.

Authorized users will log into the system via a single user interface and be redirected to their personal data page. They will be able to enter data based on the guidelines presented to them in the online form. Users will only be able to edit/view based on their defined roles as outlined in this document.

While some reports will be included in the database, there will be a need to have additional reports created through the use of outside software (i.e. Microsoft Excel) so data exporting functions will be necessary.

3.   Objective

The SDR will store information input by users (through manual entry or upload) to be used for individual and regional reporting. The SDR will be implemented in a two-phase process:

Phase I

A new version of the SDR will be developed with current functions and reporting, data, beta tested, and acceptable for use no later than October 31, 2016. (See Appendix A for images of current system).

Phase II

The following database functionalities will be implemented:

- Querying capabilities
- Report writing features to produce custom and static reports
- Mapping and importing data from the National EMS Information System (NEMSIS) database
- E-mail capability from within the database
- Database access report logging
- Other functionalities as outlined (see *Section 5.2 Functional Requirements*)

This phase should be developed, beta tested, and acceptable for use no later than December 31, 2016.

Any items in Phase II that can be completed as part of Phase I with minimal effect on budget and/or completion time of Phase I should be included as such.

4.   Assumptions/Constraints/Risks

4.1   Assumptions

End users will be using workstations in strictly secured environments. No private health information (PHI) will be shared. No data will be shared without expressed written permission from SETRAC.

4.2   Constraints

Browser functionality will be limited based on each facility's and agency's security policies.

4.3   Risks

Browser side scripting, domain redirecting, and other browser functionality may be limited or blocked.

5.   Design Decisions

5.1   Key Factors Influencing Design

Many end-users will enter data from their work locations, many of which have restrictions due to their IT policies. Therefore, the SDR must be accessible through commonly used web browsers with little to no additional downloading requirements. In addition to the items listed in *Section 5.2 Functional Requirements*, the following are non-functional requirements:

- Security considerations: database only allows users to perform their tasks only after successful login. All users will have access to their own interface. The entire web interface must be TLS encrypted. Certificate will be supplied and maintained by SETRAC.

- User interface: the user interface will be attractive, user friendly and easy to use. The system will have consistent interface formats and button sets for all forms/pages in the application.

- Good performance: each component of the SDR should be obtaining/saving data in minimal time.

- Fast response time: when user requests or want to operate a task, the system responds to the request quickly to satisfy the user needs.

- System modification and maintainability: the database will need to be maintained and may need future modification. Therefore, the code should be easily readable and extendable.

5.2   Functional Requirements

The following are the functional requirements of the database:

Phase I

- Register new accounts.

- Activate and deactivate accounts.

- Redirect to appropriate account upon successful login.

- Password recovery.

- Display relevant information based on built-in roles and privileges. *(see Section 5.4 Security and Privacy Design Decisions)*

- Add new facilities and agencies as needed.

- Add and update facility and agency information (address, point of contact, designation, etc.)

- Enter and store data by month for client assigned facility(s)/agency(s).

- Logic implemented to cross-check data entry for accuracy as defined by SETRAC. *(Details to be provided upon execution of contract.)*

- Print and revise data as needed.

- Export data, facility/agency information, and user information to Microsoft Excel or similar software.

- Notify administrators when a new account is registered.

- Session time out for security purposes.

Phase II

- Generate custom and static reports in PDF format.

- Import data from the NEMSIS database and restrict access to PHI.

- Code each facility/agency according to designations (e.g. "comprehensive" stroke center shown in reports with a code or color, "primary" stroke center shown with a different code or color). *(Details to be provided upon execution of contract.)*

- Confirm or edit individual and facility/agency information upon login.

- E-mail all or specific users from the database, including setting pre-written messages at designated times.

- Provide database access and edit logs.

- Enable check box to indicate that there is no data to submit for a specific month.

- Warnings to save data and ability to save data before session time outs.

The SDR must be flexible to facilitate future growth and currently unimagined improvements.

5.3   Database Management System Decisions

Current DBMS is SQL Server. The intention is to continue using SQL Server 2012 or newer.

5.4   Security and Privacy Design Decisions

The SDR will be used only by those authorized by SETRAC. The following categories will be used to establish the roles and level of access for users:

"User": This category will be assigned to those needing access to one facility or agency within a service line. This access level may span multiple service lines and will include the ability to add, edit, print, and export their facility's or agency's data. An option will also be provided to produce a "CEO Report".

"Super User": This category will be assigned to those needing access to multiple facilities/agencies within a system. (i.e. a representative from a regional office would have access to all their company's facilities/agencies). This access level will include the same abilities as the "user" but will be available for all facilities and agencies to which they have access.

"Admin": This category will be assigned to those needing access to all facilities and agencies within a regional advisory council (RAC). This access level may activate and delete "users" and "super users"; add, edit, or delete facilities and agencies, query data, run reports ("CEO Reports" and additional custom and static reports), and access individual facility data across all service lines.

"Super Admin": This category will be assigned to those needing access to multiple RACs (RAC Q *and* RAC R). This access level will include the same abilities as the "admin" but will be available for all facilities and agencies for all RACs.

Table 1 – System User Roles and Access

Capability	"User"	"Super User"	"Admin"	"Super User"
Enter, edit, print, export data	Yes	Yes	Yes	Yes
Multi facility or agency access	No	Yes	Yes	Yes
Multi RAC access	No	To be determined	No	Yes
Run reports	CEO report only	CEO report only	Yes	Yes
Run queries	No	No	Yes	Yes
Activate / delete accounts	No	No	Yes	Yes
Add / delete facilities/agencies	No	No	Yes	Yes

Figure 1 – System Relationships
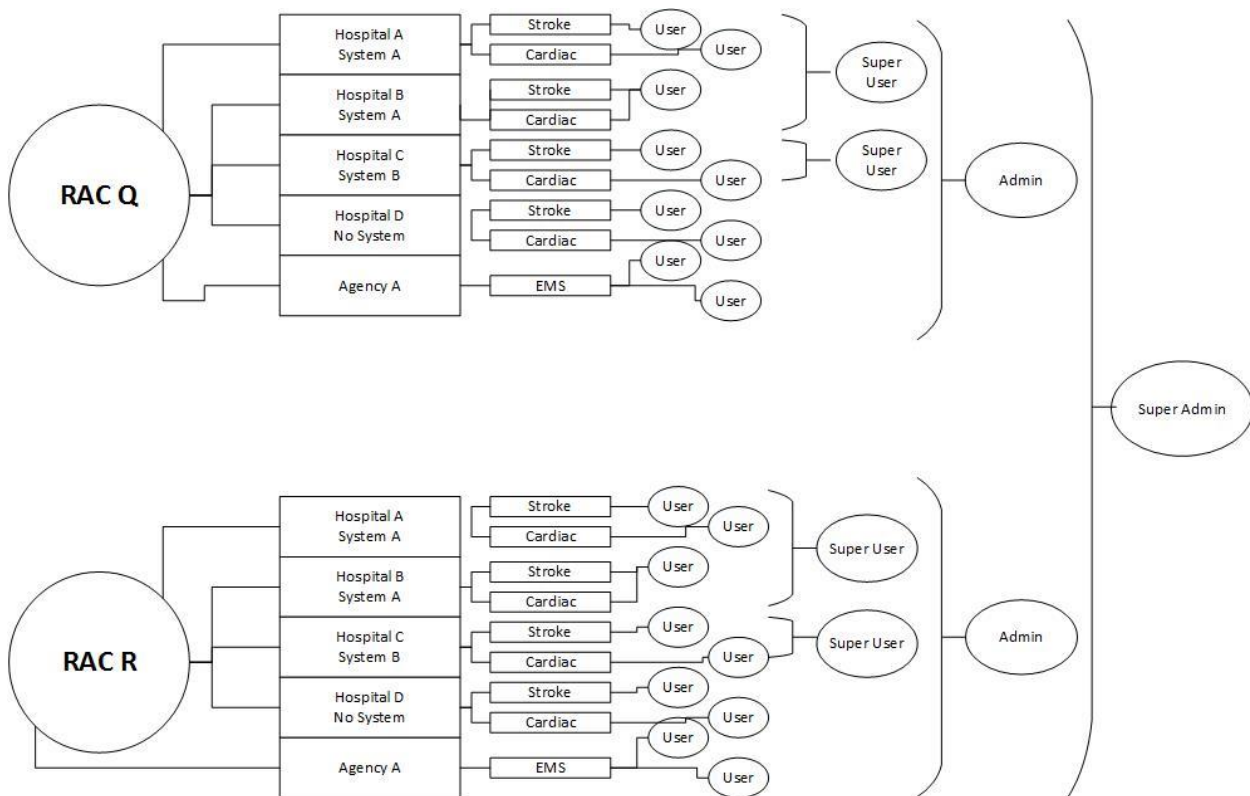
Appendix A: SDR Visuals

The following images are samples of the current SDR as of September 2016 for which Phase I of the project should be based on.

Figure 2 – Log-In Screen

Figure 3 – Facility / Agency Initial View
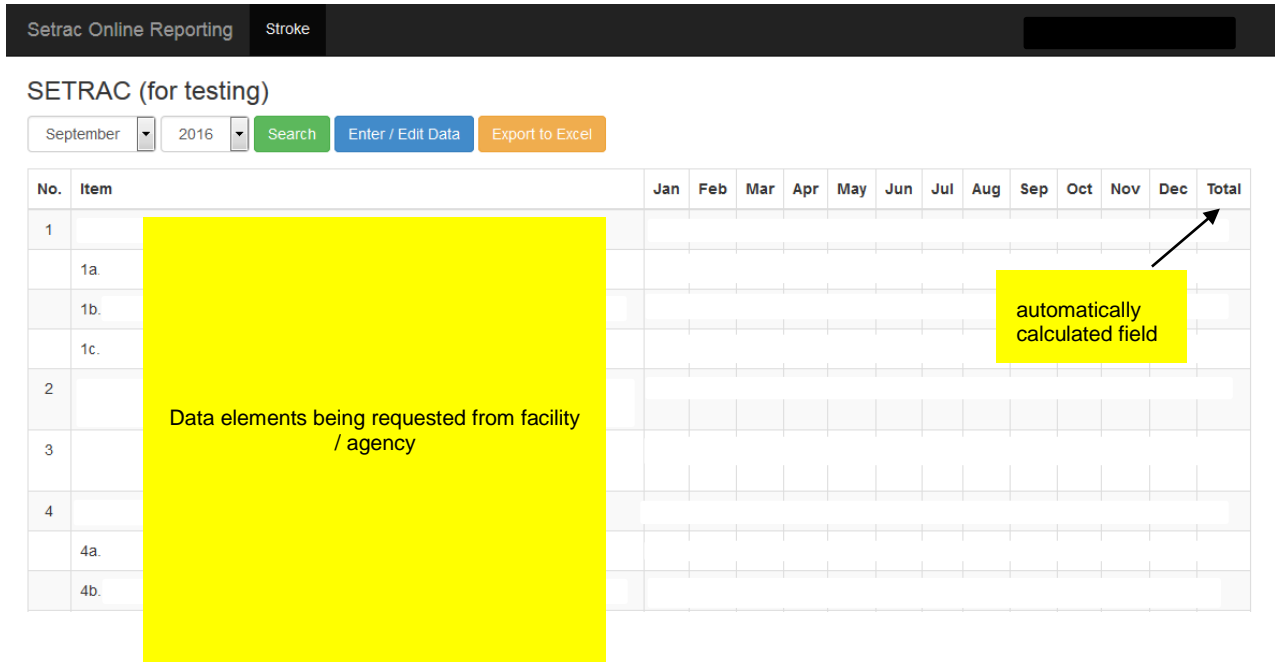
Figure 4 – Facility / Agency Data Entry Page
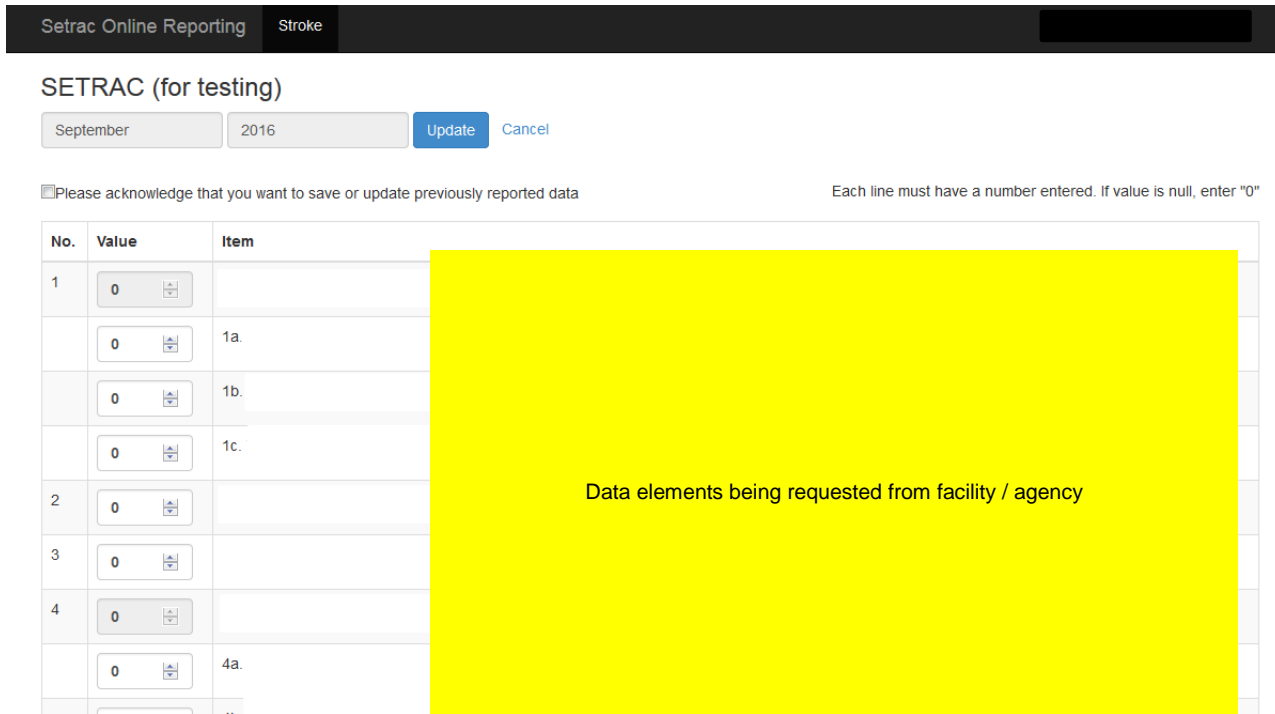
Figure 5 – Administrator Log-In

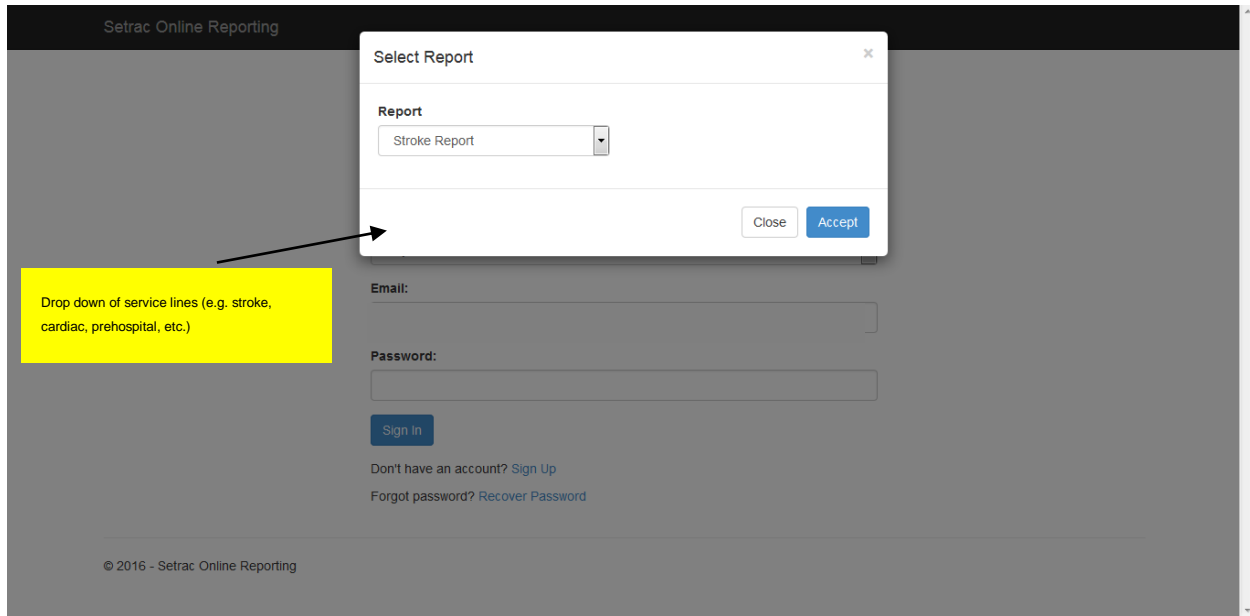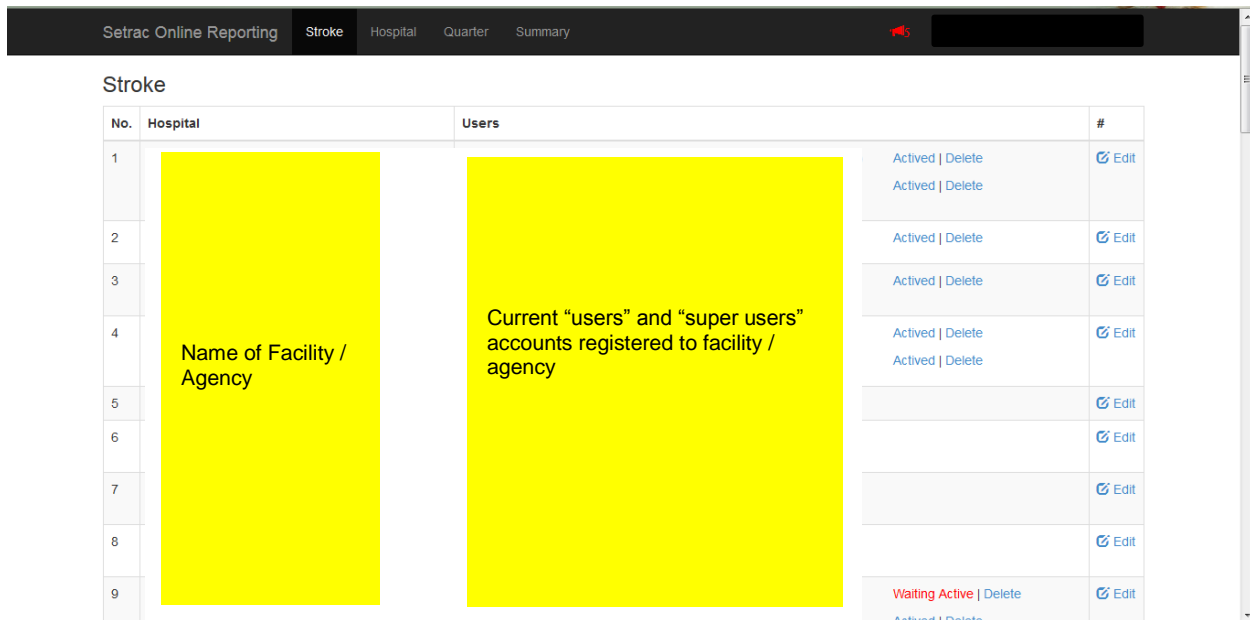## Figure 6 – Administrator View

Figure 7 – Facility /Agency Listing

Figure 8 – Facility / Agency Report

Figure 9 – Summary Report

Appendix B: Record of Changes

Table 1 - Record of Changes

Version Number	Date	Author/Owner	Description of Change
1.0	9/21/16	SETRAC	Initial Document

Appendix C: Acronyms

Table 2 - Acronyms

Acronym	Literal Translation
SDR	SETRAC Data Repository
RAC	Regional Advisory Council
SETRAC	SouthEast Texas Regional Advisory Council
RAC Q	SouthEast Texas Regional Advisory Council
RAC R	East Texas Gulf Coast Regional Trauma Advisory Council
NEMSIS	National EMS Information System (NEMSIS) database
EMS	Emergency Medical Services
CEO	Chief Executive Officer
PHI	Private Health Information

Appendix D: Glossary

Table 3 - Glossary

Term	Acronym	Definition
Regional Advisory Council	RAC	Administrative bodies responsible for oversight within the bounds of a given Trauma Service Area in Texas.

Appendix E: Referenced Documents

Table 4 - Referenced Documents

Document Name	Document Location and/or URL	Issuance Date
Regional Advisory Councils - website	https://www.dshs.texas.gov/emstraumasystems/etrarac.shtm	N/A

Appendix F: Approvals

The undersigned acknowledge that they have reviewed the Database Design Document and agree with the information presented within this document. Changes to this Database Design Document will be coordinated with, and approved by, the undersigned, or their designated representatives.

Table 5 - Approvals

Document Approved By	Date Approved
Catherine Bissell (signature) Name: Catherine Bissell Regional Manager, Clinical Development SETRAC	9/21/16 Date
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date