KSADS API - Data Transfer Spec
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Version History:

Version	Date	Changes
1.0	9/13/16	Initial Draft with Raw Data
1.1	9/14/16	Modify KSADS code to allow data to be transferred to study
	3/15/2018	NIMH update
1.2	7/20/2018	Updated to a generic format
1.3	8/10/19	Updated the curl command
1.4	1/15/21	Updated the urls for the staging server

Scope:

This document explains the features of KSADS API.
KSADS-COMP is equipped with API to electronically transfer the clients data to their program of choice in a structured format (JSON) so that they can download the data daily/weekly and store them in their own database. We track the data transfer and only send the newly added data. However the data stays on our site, the client can login view/download them anytime from the website.

Summary:
KSADS stores the data in a secured Microsoft SQL server database.
The data is available for authorized users to access as HTML reports from the website. The reports will be available until the account is active.
The reports can be run at the patient level or at the site level and it can be exported to a xlsx format, which can be imported to any relational database or statistical packages like SPSS and SAS.

KSADS is also equipped with an API to transfer the data to the clients.

Note: This requires the clients to program their in-house software to request and import the data from KSADS.

The data is exported in a JSON format, which can be ported to any program or databases.
We export 2 different datasets.
· Raw data
· Diagnosis data

The sites can have their system programmed to call KSADS at a scheduled time with a requesting JSON (input JSON).
KSADS will authenticate, authorize and validate the inputs and then post a JSON (output JSON) with records of patients who have completed the interviews.
KSADS will also maintain a data log that was posted/responded to each request, so in the next request, it will only respond with the newly added data.
The requesting system will send a username/token and password/key in the header of the JSON for us to authenticate and transmit the data securely.

This document defines the scope and approach to automate the data transfer procedure from the KSADS database to the client's system. This procedure transfers data specific to the sites that have access to KSADS.

The following are the 2 different datasets available.

1) Patient Assessment - question/response Data a.k.a Raw Data
2) Patient Diagnosis Data

Each site will be assigned a GroupID and GroupName in the KSADS database. When requesting, the sites should pass GroupID as a parameter along with the shared token to validate/authenticate the request.

Data attributes

Patient Assessment Question/Response Data

FieldName	Desc	DB Type
GroupName	Name of the Group table	Text
TransactionID	Unique ID for each transfer	int
TotalRecords	Total records returned	int

UserResponseID	PK from ksads UserResponse table	int
GroupID	PK from Group table (aka Site)	int
UserID	Int PK from Patients table	int
PatientID	User maintained alphanumeric Patient code	text
QuestionID	PK from Questions table	int
QuestionText	The actual question text the user responded during interview	Text
AnswerText	The response text (eg., Yes or No)	Text
AnswerValue	A value that is used for scales (No-0, yes -1 etc)	Int
FreeText	When the user response is from a free entry text box or from multiple complex fields	text
Comment	Text Comment field (optional)	text
TimeStamp	Date/time of user response	Datetime

Patient Diagnosis Data

Field	Data	Description
ID	**int**	Unique ID for each record
GroupID	**int**	Site ID, passed as parameter
UserID	**int**	Int PK from Patients table
PatientID	**text**	User maintained alphanumeric Patient code

FunctionID	**int**	Unique ID of each function	
ModuleID	**int**	Unique ID for each module	
Module	**string**	Module name	
FunctionType	**string**	Symptom or Diagnostic function	
FunctionName*	**string**	Function Name (self explanatory) and includes present or past qualifier.	
Output	**string**	0- means negative Non Zero- Positive (Can contain 1 or Dynamic Description including FCode)	

Data Transfer Details:

We would use REST protocol to communicate between the Client's service/job and KSADS.
We will use REST Post method.

The Client's service/job will post a json to a URL (in KSADS) and would receive the output in the JSON format as well.

The URL to request for the data from the live site
https://www.KSADSLogin.net/GetData.aspx
(This URL is not active for you yet)

Request/Input JSON
The Client's service/chron Job should send this JSON to request for the patients raw data.

[{"What":"GetRawData","GroupID":"38"}]

The input JSON has the following parameters

Parameter Name	Value	Description
What	GetRawData	A method to request for patients raw data.Basically the question asked and answer responded.

GroupID	38	The groupID is the siteID in KSADS- the primary key of the Client's sites created in KSADS. Once all the sites are created, we will share all the IDs with Client's. The requesting Client's service/job/program can request KSADS for data for/by each groupID

KSADS will share all the patient response data for the site requested for all the patients who've completed the interview at that point of time (data point **<UserResponse.InterviewCompleted>** KSADS also tracks which data has been sent,**<UserResponse.DataTransferred>** So the next time the same request comes, it will only send the newly added data but completed interview data.

The Client's service/job can be scheduled to run by the end of the day, and all the interviews that are completed and not transferred will be included in the output JSON.

The requesting JSON will have a username and password token in the headers

The output JSON for **GetRawData** will have the following fields

Columns	Description	Type
ErrorID	If 0 no errors, then the following columns makes sense	int
ErrorText	Error description when ErrorID!=0	Text
GroupName	Name of the Group table	Text
TransactionID	Unique ID for each transfer	int
TotalRecords	Total records returned	int
UserResponseID	PK from ksads UserResponse table	int

GroupID	PK from Group table (aka Site)	int
UserID	Int PK from Patients table	int
PatientType	T- teen, P- parent, D- Clinician	Text
PatientID	User maintained alphanumeric Patient code	text
QuestionID	PK from Questions table	int
QuestionText	The actual question text the user responded during interview	Text
AnswerText	The response text (eg., Yes or No)	Text
AnswerValue	A value that is used for scales (No-0, yes -1 etc)	Int
FreeText	When the user response is from a free entry text box or from multiple complex fields	text
Comment	Text Comment field (optional)	text
TimeStamp	Date/time of user response	Datetime

The output JSON will contain multiple records for the same client/user as its recorded.
The output JSON can contain multiple client responses based on when they've completed the interview OR when the last data transfer happened.
Once the data is transferred, KSADS will mark all the patient records as **DataTransferred=true**
So in the next data transfer these records will not be included.

GetData.aspx

Sample JSON With Data
{

"ErrorID":0,
"ErrorText":"",
"GroupName":"Telepsychology.net CLIN ADMIN",
"TransactionID":10,
"TotalRecords":7,
"UserData":[
  {
    "UserResponseID":182716,
    "GroupID":1,
    "UserID":15701,
    "UserType":"T",
    "PatientID":"UserTELE026_Alison8_21",
    "QuestionID":1,
    "QuestionText":"",
    "AnswerText":"",
    "AnswerValue":0,
    "FreeText":"",
    "Comment":"",
    "Timestamp":"10/6/2016 9:18:00 PM"
  },
  {
    "UserResponseID":182720,
    "GroupID":1,
    "UserID":15701,
    "UserType":"T",
    "PatientID":"UserTELE026_Alison8_21",
    "QuestionID":2143,
    "QuestionText":"",
    "AnswerText":"",
    "AnswerValue":0,
    "FreeText":"Asian, ",
    "Comment":"",
    "Timestamp":"10/6/2016 9:18:00 PM"
  },
  {
    "UserResponseID":182718,
    "GroupID":1,
    "UserID":15701,
    "UserType":"T",
    "PatientID":"UserTELE026_Alison8_21",
    "QuestionID":3,
    "QuestionText":"",
    "AnswerText":"",

```
      "AnswerValue":2,
      "FreeText":"",
      "Comment":"",
      "Timestamp":"10/6/2016 9:18:00 PM"
   }
  ]
}
```
Sample JSON with No Data

{"ErrorID":1,"ErrorText":"No Data Available.","GroupName":null,"TransactionID":0,"TotalRows":0,"UserData":null}

Please note:
If the ErrorID is 0, can process the JSON data from the UserData field.
If theError ID is non 0, you can get the error description from **ErrorText**, and ignore the UserData.

User defined errors

ErrorID	ErrorText	
1	No data found.	
2	Invalid Method.	

Note: If you have multiple sites, the Raw data and the Diagnosis data has to be requested separately for each site.

Diagnosis Report Data

Request/Input JSON
The client's requesting service should send this JSON something like this.

[{"What":"GetDiagnosisData","GroupID":"38"}]

This uses the same authentication as the raw data.

The input JSON can have the following parameters

What	GroupID
RawData	38
A method which returns all completed users raw data	The groupID is the siteID in KSADS- the primary key of the Study sites created in KSADS. Once all the sites are created, we will share all the IDs with client's study. The requesting Study service/job/program can request KSADS for data for/by each groupID

Output Structure

```
{
        "ErrorID": 0,
        "ErrorText": "",
        "GroupName": " Study_test_Selfadmin",
"TransactionID":5,
"TotalRecords",1234,
        "ReportData": [{
                "ID": 2702,
                "GroupID": 38,
                "UserID": 3980,
"UserType":"T"
"PatientID": "123/123",
                "FunctionID": 822,
                "ModuleID": 23,
                "Module": "Suicidality",
                "FunctionType": "Symptom Function",
                "FunctionName": "Aborted or interrupted suicide attempts, Past",
                "Output": "0"
        }, {
                "ID": 2693,
                "GroupID": 38,
                "UserID": 3980,
"UserType":"T"
"PatientID": "123/123",
                "FunctionID": 813,
                "ModuleID": 23,
                "Module": "Suicidality",
                "FunctionType": "Symptom Function",
```

```
            "FunctionName": "Aborted or interrupted suicide attempts, Present",
            "Output": "0"
        }]
}
```

The above given sample JSON is listing 2 functions, the complete list of functions are given under diagnosis function below.

JSON Structure

Field	Data	Description
ID	**int**	Unique ID for each record
GroupID	**int**	Site ID, passed as parameter
UserID	**int**	PK from DB
PatientID	**text**	User maintained Patient ID
FunctionID	**int**	Unique ID of each function
ModuleID~	**int**	Unique ID for each module
Module~	**string**	Module name
FunctionType	**string**	Symptom or Diagnostic function
FunctionName*	**string**	Function Name (self explanatory) and includes present or past qualifier.
Output	**string**	0- means negative Non Zero- Positive (Can contain 1 or Dynamic Description including FCode)

~Module List

Disorders / Module ID and Name
1 - Depressive Disorders
2- Bipolar Disorders
4 - Psychosis

5 - Panic Disorder
6 - Agoraphobia
7- Separation Anxiety
8- Social Anxiety
9- Specific Phobia
10 - Generalized Anxiety Disorder
11-Obsessive Compulsive Disorder
12-Enuresis and Encopresis
13-Eating Disorders
14-Attention Deficit Hyperactivity Disorder
15-Oppositional Defiant Disorder
16-Conduct Disorder
17-Tic Disorders
18-Autism Spectrum Disorders
19-Alcohol Use Disorder
20-Substance Use Disorders
21-Post-Traumatic Stress Disorder
22-SLEEP PROBLEMS
23-SUICIDALITY
24-HOMICIDALITY
25- Selective Mutism

Before returning the values back to the requesting program, KSADS log the values in a table **<DataTransferLog>**

ColumnName	DataType	Description
ID	int	TransactionID returned to the caller
When	DateTime	Timestamp
Who	int	GroupID
What	varchar	GetRawData, GetDiagnosisData
Data	varchar	Comma separated PatientIDs

TotalRows	int	Total Rows affected.

So in case of issue, we can trace back the data transferred on a particular day and mark it as not sent to get the data transferred again.

How to call the API
After we set up an account you can try these

Sample Client Service
url=   http://www.dsm5screening.net/
Live API URL
https://www.KSADSLogin.net/

Sample Requesting Service
var request = HttpWebRequest.Create(new Uri(url));
request.Headers["Authorization"] = "Basic **$123ABC123**";
 request.Method = "POST";
 request.ContentType = "application/json; charset-utf-8";
 request.ContentLength = data.Length;

Requesting JSON
[{"What":"GetRawData","GroupID":"38"}]
[{"What":"GetDiagnosisData","GroupID":"38"}]
[{"What":"**GetStatsAll_RawData**","GroupID":"9"}]
[{"What":"**GetStatsAll_DiagnosisData**","GroupID":"9"}]

Security
Include a username and password in the header with basic authentication
We will create and share this with you.

REST Errors
http://www.restapitutorial.com/httpstatuscodes.html

CURL Command
You can also use a command line curl command to get the data.

*curl --location --request POST 'http://test.ksads-comp.com/getdata.aspx' \
--header 'ContentType: application/json' \
--header 'Authorization: Basic xxxxx' \
--data-raw '[{"What":"GetDiagnosisData","GroupID":"0000"}]'*

Testing client tools
postman

Tech Details:- (Ignore)
[{"What":"**GetStatsAll_RawData**","GroupID":"9"}]
[{"What":"**GetStatsAll_DiagnosisData**","GroupID":"9"}]

The above requests reports how many total records(users) transferred in each category upto date (no date filters). Uses a stored proc Ksads_GetStatsAll
The transferred data transaction is also stored in <DataTransferLog>
And the records transferred are marked as IsTransferred in <UserAccounts>