REDCap and Twilio – User’s Guide

REDCap has the capability to send SMS text messages to survey respondents by using a third-party web service named Twilio (www.twilio.com). In this way, you could invite a participant to take a survey by sending them an SMS message instead of an email invitation.

To use Twilio in your REDCap project, you must obtain approval by the IRB. Additionally, there is a $1,000 activation fee per project.

SETUP & CONFIGURATION: To use this feature, you must have a Twilio.com user account that is funded with some money (since there is a cost for each phone call made and for each SMS message sent). If you do not have a Twilio account, it is very easy to go to Twilio.com and create one. Once your REDCap project is connected to your Twilio account by entering your Twilio account credentials on your REDCap project’s Project Setup page, you can then configure how you want to use Twilio in your project. In general, not much is different between administering a survey normally in REDCap than when using Twilio SMS services.

COMPATIBILITY: Most of REDCap's survey features still function much the same when taking a survey via SMS invite. This includes the enforcement of required fields, field validation, branching logic, using the Survey Queue for multiple surveys (only works with Auto-Start enabled), survey email notifications and confirmations, the Participant List, Automated Survey Invitations, survey Stop Actions, and computer adaptive tests (CATs) downloaded from the REDCap Shared Library. One of the few survey features that is not compatible is the Survey Login feature.

COST: Buying a phone number for Twilio services is $1/month. In order to use the Twilio SMS and Voice Call services in a REDCap project, you will have to connect your project to your Twilio account by entering your Twilio credentials into REDCap during the setup process. As REDCap sends SMS messages using this service, all charges to your Twilio account will be made based upon its usage. This is not done by REDCap but is done internally by Twilio as you use its services. In this way, no monetary transactions are made by REDCap, and thus it is your responsibility to maintain the funds in your Twilio account in order to ensure that the service continues to work for your REDCap project. If your Twilio account runs out of funds, the Twilio services in REDCap will cease to function. For information on the cost of each SMS message, visit your Twilio account to view the rates.

PRIVACY & SECURITY INFO: It is important to understand that this feature utilizes the third-party service Twilio.com, which means that all SMS messages will be routed through Twilio's servers. However, REDCap goes to great length to ensure that SMS transcriptions do not stay in Twilio's logs but are removed shortly after being completed. This is done for security and privacy concerns (e.g., HIPAA), in which your survey participants’ phone numbers and their
survey responses do not get permanently logged on Twilio's servers but instead remain securely in REDCap.

**TWILIO ACCOUNT SETUP INSTRUCTIONS:**

You may enable the Twilio SMS services in this project for sending survey invitations via SMS text messages. Before you begin the setup steps below, you must **1) set up your own Twilio account** at [www.twilio.com](http://www.twilio.com). Once your Twilio account has been created, you must **2) fund your account with some money** (using the Billing page in Twilio) and then **3) purchase a phone number** to be used for this REDCap project (see the Numbers page in Twilio). Once a phone number has been purchased for the account, obtain the Account SID and Auth Token for your account (see the API Credentials section on the main Account Settings page), and then enter the Account SID, the Auth Token, and the phone number into the 'Twilio account credentials' section below. NOTE: Whenever you set the services as Enabled and then click the Save button, REDCap will check with your Twilio account to confirm if all the credentials and info are correct. REDCap will not allow you to enable the Twilio SMS services until it has verified that the Account SID, Auth Token, and phone number are all valid.

**QUICK SET-UP GUIDE:**

- **How to set it up**
  - Got to [Twilio.com](http://www.twilio.com) and sign up
  - Set up a payment method—you can use a credit card or PayPal
  - Buy a phone number; numbers are $1/month
    - You can select specific capabilities for the number (text, multi-media messages)
    - You can select local or toll free numbers
  - **Turn off the ‘Request Inspector’ feature**
    - This feature stores data on Twilio’s server and is not HIPAA compliant, so it must be off to use Twilio with REDCap
    - Find it at this path:
      - Dashboard
      - Programmable voice
      - Settings
      - Request Inspector
    - You can test in REDCap to make sure it’s off
  - Enable Twilio in REDCap on the *Project Setup* page (see picture on next page)
    - Enter your account SID and Authorization (found on the account settings page)
    - Enter the phone number (found on your Twilio dashboard)

- **Configuring Twilio**
  - A new box will appear on the *Project Setup* page allowing you to configure Twilio
  - Choose a language and a voice (male/female)
  - For ‘Choose survey invitation types to use, select “Send survey invitation with survey link via SMS.”
- SMS will send a link
  - Append instructions for voice calls, if necessary
  - Choose a default invitation type
  - Optional: Designate a phone number field (similar to designating an email field to use for the Participant List)
  - Decide how to handle overlapping messages

- **Ways to send it out**
  - **Public Survey Link**
    - Send invitation to a list of phone numbers
    - Get a code the participants can send to your phone number for voice call
  - **Participant List and Automated Survey Invitations**
    - Can enter both or either of phone number and email
    - Select the participant’s preference when adding them to the list
    - You have the option to send out invitations via email, SMS, or the participant’s preference

**REDCap Configuration**
Listed below are all the configuration settings for the Twilio services for this project. These settings control which parts of the Twilio services are available for use throughout the project, and they control how certain parts of the service functions. To set or change any settings, modify them below, and click the Save button.

**Language and gender used for voice calls**
Choose the language of your survey question text, and select the regional dialect in which you want it to be spoken (used in voice calls only).

**Choose survey invitation types to use**
You may select several different ways for participants to be invited to take surveys and also the medium in which they will take the surveys.

**Survey as webpage**
- Send survey invitation with survey link via SMS
- Send survey as voice call
  - Initiate survey as voice call
  - Send survey invitation via SMS to take survey as voice call (respondent makes call)
  - Send survey invitation via SMS to take survey as voice call (respondent receives call when replying via SMS)

**Automatically append response instructions to questions?**
If this option is set to ‘No’, then the survey respondent will be given only a question’s field label and option choices’ text as-is, which means that you will need to modify your question text to say ‘For chocolate, press 1. For vanilla, press 2.’... But if you set this option to ‘Yes’, you may leave your existing question text ‘Chocolate, Vanilla, …; and REDCap will automatically add ‘Press ’1’’ to the end of the ‘Chocolate’ choice text for a voice call, for example. And for an SMS message, it will add ‘1’ to the beginning of the choice text in the message.

**Choose the default invitation preference for new participants**
If new participants are created via data entry form (rather than via survey), then you may select their default survey invitation preference that will get assigned to them when their record is created. This is useful if you are creating records using a data import or on a data entry form, but wish to send survey invitations later for SMS surveys or voice call surveys, in which this setting automatically sets their invitation preference for you. Without this setting, you would otherwise have to set each participant’s preference individually in the Participant List. Also, this value will be used as the pre-selected setting of the delivery preference on the Participant List page when adding new participants to the list.

- **(Optional) Designate a phone number field for survey invitations**
  You may capture phone numbers for sending invitations to your survey participants by designating a field in your project. This can be done in addition to (or as an alternative to) entering phone numbers directly into the Participant List. So if a participant does not have a phone number that was added to the Participant List, it will use the value of this field when sending survey invitations via SMS or as voice calls.

- **Behavior for overlapping SMS invitations**
  If you will be sending SMS invitations for multiple surveys within this project, then you will need to choose the default behavior for when a participant has received SMS invitations.

**SMS invitation (contains survey link)**

--- select a field ---

Listed above are all Text fields having either Integer validation or Phone (U.S.) validation.

**Take surveys in same order as participant received the invitation**
Only used when sending SMS invites for multiple surveys in this project.
INVITING PARTICIPANTS – QUICK SETUP GUIDE

Public Survey URL:

- Voice Calling and SMS options for the Public Survey
  You may invite participants to complete the public survey via voice call or SMS. If you wish to invite them directly *right now*, click the button below to open a popup for entering phone numbers to call or send an SMS text message to the participants.
  
  1) Invite participants now: invite participants via Voice Call or SMS

  Alternatively, if you instead want the participants to initiate the survey themselves, then you may provide your participants with the instructions for one of the options below.

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On the screen shown:

- Invite participants via Voice Call or SMS
  In the textbox below, enter the phone numbers of the respondents to which you wish to send survey invitations, either as a voice call or SMS text message.

  Enter phone numbers below with one number per line

  **Phone numbers (one per line)**

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Choose how these participants will take the survey and be invited:

- **SMS invitation (contains survey link)**

Enter custom SMS message:

**enter message that will be sent with the text**

NOTE: Invitations here are sent out in real time, so please be patient if you are sending out many invitations as it may take a couple seconds to send each one at a time.

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Send Invitations

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Participant List:

- Participant List belonging to
  
  (Initial survey) "Asthma Symptoms" - Day 1 survey 1

  Displaying 1-1 from

  Add participants

  Compose Survey Invitations

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<table>
<thead>
<tr>
<th>Email</th>
<th>Phone</th>
<th>Participant Identifier (optional)</th>
<th>Invitation preference</th>
<th>Responded?</th>
<th>Invitation Scheduled?</th>
<th>Invitation Sent?</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>[No email listed] (ID 1)</td>
<td>[Redacted]</td>
<td>[Redacted]</td>
<td>[Redacted]</td>
<td>[Redacted]</td>
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Automated Survey Invitations: