

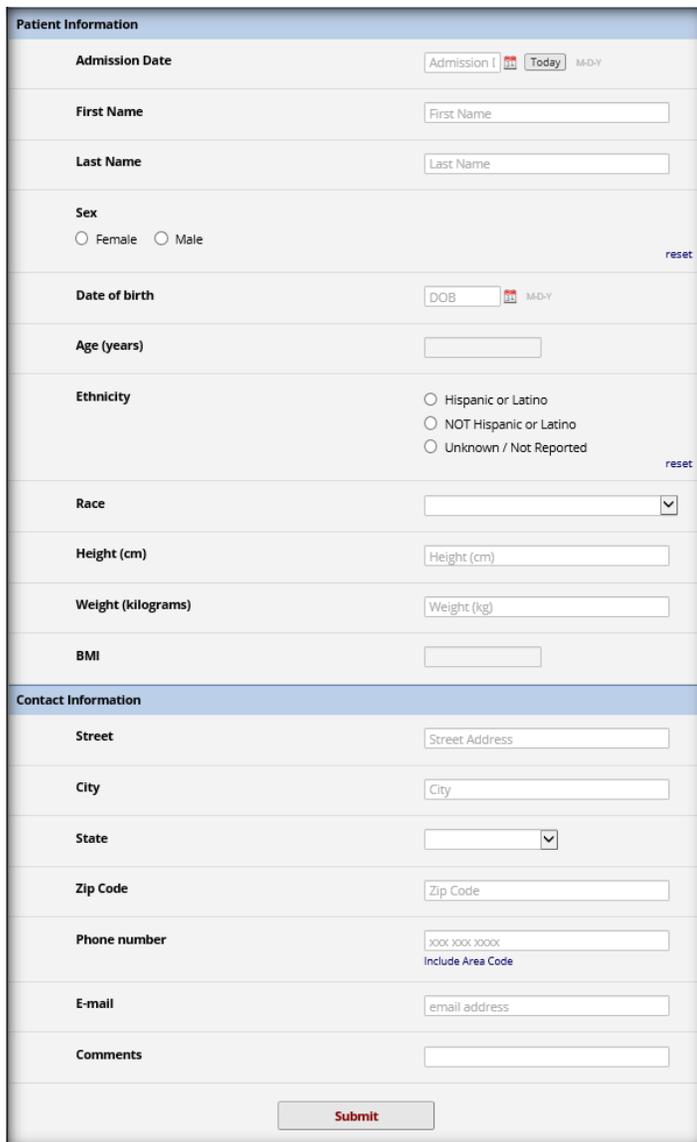
## How to use REDCap Embedded Fields

Embedding fields is an advanced REDCap topic, which gives you greater control over the look and feel of your REDCap instruments. The 'Field Embedding' feature of REDCap does not add new function to your project; it is a way to customize your surveys and data collection instruments to make them look more closely to how you want. Field Embedding allows you to reposition field elements on a survey page or data entry form so that they are positioned in a new location on that same page.

Start by watching this short [10 minute video](#) which explains how you can use embedded fields in your project.

When building your REDCap project look for this icon  to learn more about embedded fields.

Traditionally the layout of REDCap instruments and surveys has been one question per horizontal row. You were unable to combine multiple questions so they fit on a single horizontal row. Your survey or instrument would look something like this (long and skinny):



The screenshot displays a REDCap form with a long, narrow layout. It is divided into two main sections: "Patient Information" and "Contact Information".

**Patient Information Section:**

- Admission Date: Includes a date picker and a "Today" button.
- First Name: Text input field.
- Last Name: Text input field.
- Sex: Radio buttons for "Female" and "Male".
- Date of birth: Includes a date picker.
- Age (years): Text input field.
- Ethnicity: Radio buttons for "Hispanic or Latino", "NOT Hispanic or Latino", and "Unknown / Not Reported".
- Race: Dropdown menu.
- Height (cm): Text input field.
- Weight (kilograms): Text input field.
- BMI: Text input field.

**Contact Information Section:**

- Street: Text input field.
- City: Text input field.
- State: Dropdown menu.
- Zip Code: Text input field.
- Phone number: Text input field with a placeholder "xxx xxx xxxx" and a link "Include Area Code".
- E-mail: Text input field with a placeholder "email address".
- Comments: Text input field.

A "Submit" button is located at the bottom of the form.

With embedded fields, you can now reposition your fields so the layout of your instrument is more intuitive and compact. I used embedded fields to change the above instrument so it now appears like this:

The screenshot shows a form titled "Patient Information" with a light blue header. The form is organized into sections. At the top, there is an "Admission Date" field with a calendar icon and a "Today" button. Below this are "First Name" and "Last Name" text boxes. To the right of these are radio buttons for "Female" and "Male", with a "reset" link below them. The "DOB" field includes a calendar icon and "M-D-Y" text. To its right is the "Age at Admission" field. Below these are "Height (cm)" and "Weight (kg)" text boxes, followed by a "BMI" field. The "RACE" field is a dropdown menu. To its right are radio buttons for "Hispanic or Latino", "NOT Hispanic or Latino", and "Unknown / Not Reported", with a "reset" link below them. A "Contact Information" section follows, containing "Street Address", "City", "State" (dropdown), "Zip Code", "Phone" (with a placeholder "xxx xxx xxx"), and "Email address" (with a placeholder "email address"). At the bottom is a "Comments" section with a text box.

Following is how I used embedded fields to accomplish the new layout of my instrument.

- You start by designing your instrument(s) as you always have by grouping related questions into instrument sections. A field must first exist before it can be embedded elsewhere. Here is a portion of my Patient Information Section from the above example. At this point no embedding has been used, I have simply defined my fields.

The screenshot shows the design tool interface for the "Patient Information" section. The section title is highlighted in yellow. Below the title are "Add Field" and "Add Matrix of Fields" buttons. The tool displays three field definitions:
 

- Admission Date:** Variable: admission. Includes a calendar icon, "Today" button, and "M-D-Y" text. Includes "Add Field" and "Add Matrix of Fields" buttons.
- First Name:** Variable: first\_name. Includes a text box with the placeholder "First Name". Includes "Add Field" and "Add Matrix of Fields" buttons.
- Last Name:** Variable: last\_name. Includes a text box with the placeholder "Last Name". Includes "Add Field" and "Add Matrix of Fields" buttons.

 Each field definition also includes a "How to embed a field elsewhere" link.

- After all my fields and sections have been defined, it is now time to determine whether or not embedded fields would be useful in my project. Remember that “Embedded Fields” will not add new function to your survey or data entry form it simply allows you to rearrange the position of your fields. The most common place to embed a field is on the Field Label of a Descriptive Text field.
- I think it would be nicer if my survey layout listed several of my fields on a single line instead of each field being on a single line. Instead of 11 lines each containing a single field I think I would like my layout to be:
  - Admission Date
  - First Name, Last Name, Sex
  - DOB, Age at Admission
  - Height, Weight, BMI
  - Race, Ethnicity
- I start by adding a descriptive field to my project and then embedded my fields in the Field Label. For field embedding to work correctly, the field variable name must be enclosed in curly brackets { }. In the example: admission, first\_name, last\_name & sex are examples of the existing variable field names in my instrument. Remember “Field Embedding” will only relocate the actual input element (e.g., the text box, radio buttons). **It will not relocate the field label or field note.** In my example for some of my embedded fields I have had to add labels, for other variables (first\_name, last\_name, sex), I have not added a label because I made use of the “@PLACHOLDER=” Action Tag on the original field definition.

**Edit Field**

You may add a new project field to this data collection instrument by completing the field definition form on this page. For an overview of the different field types available, you may view the field type page.

**Field Type:**

**Question Number** (optional)

Displayed only on the survey page

**Field Label**

Admission Date: {admission}  
 {first\_name} {last\_name} {sex}  
 DOB: {dob} Age at Admission: {age}  
 Height: {height} Weight: {weight} BMI: {bmi}  
 RACE: {race} Ethnicity: {ethnicity}

**Edit Field**

You may add a new project field to this data collection instrument by completing the form on this page. For an overview of the different field types available, you may view the [Field Types](#) page.

**Field Type:** Text Box (Short Text, Number, Date/Time, ...) ▼

**Question Number** (optional)   
Displayed only on the survey page

**Field Label**

First Name

**Action Tags / Field Annotation** (optional)

@PLACEHOLDER="First Name"

Learn about [@ Action Tags](#) or [using Field Annotation](#)

- My design layout in the Online Designer looks to be correct but unfortunately the only way to be sure it is accurate is to either take the survey or enter data into your data collection form. When I take my survey following is what I see. As you can tell this isn't what I expected and not very useful to someone entering the information. The First and Last Name are not on the same line, neither is Height, Weight, BMI or Race and Ethnicity.

**Patient Information**

**Admission Date:** Admission [  ]  M-D-Y

First Name

Last Name   Female  Male

[reset](#)

**DOB:**   M-D-Y **Age at Admission:**

**Height:**  Height (cm) **Weight:**

Weight (kg) **BMI:**

**RACE:**   **Ethnicity:**

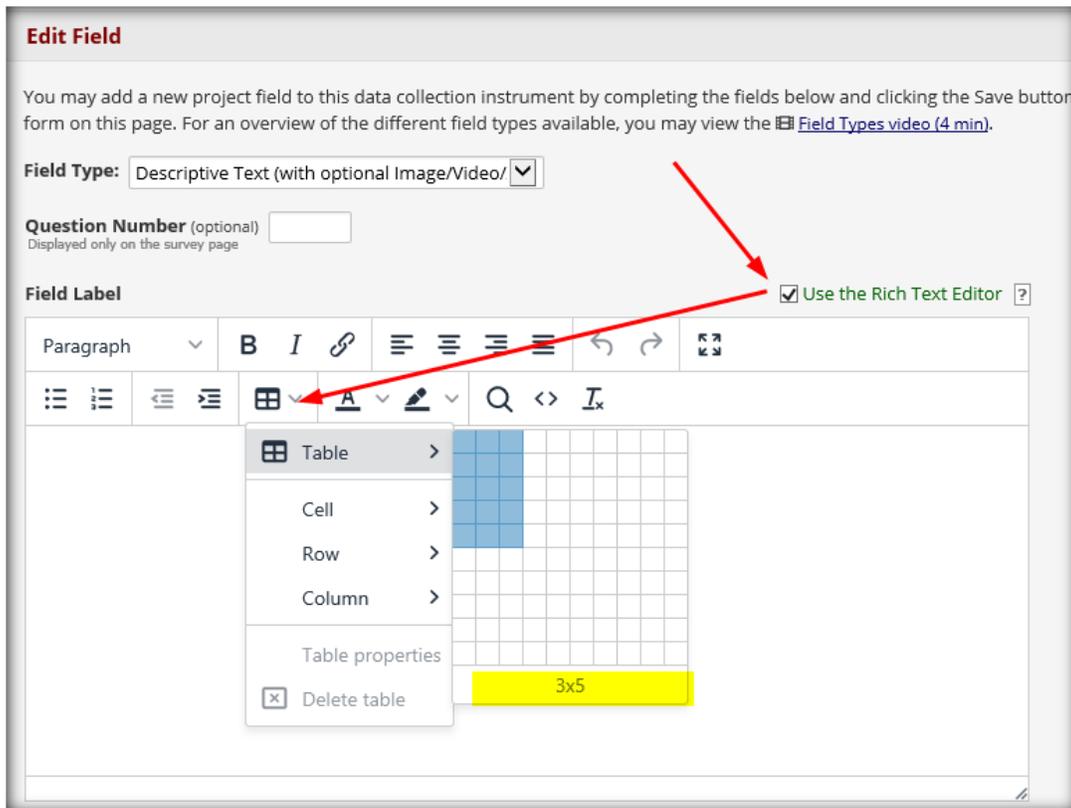
Hispanic or Latino

NOT Hispanic or Latino

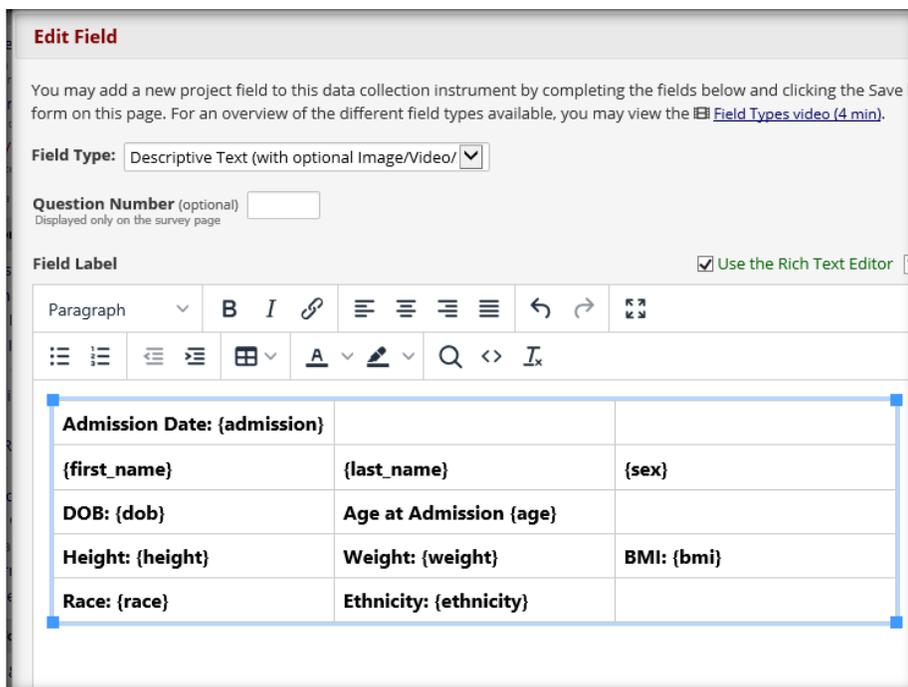
Unknown / Not Reported

[reset](#)

- So how can you get more control of where embed fields are to be positioned? Your best option and the one you will use most frequently is to embed your fields into a table. A table is not required but using it helps you group and align the fields. Here I am using the Rich Text Editor to add a 3 by 5 table to my Descriptive Text Field Label. Why did I choose a 3 x 5 table? Well remember I thought my 11 fields could be shown on 5 lines with a maximum of 3 fields on any one line.



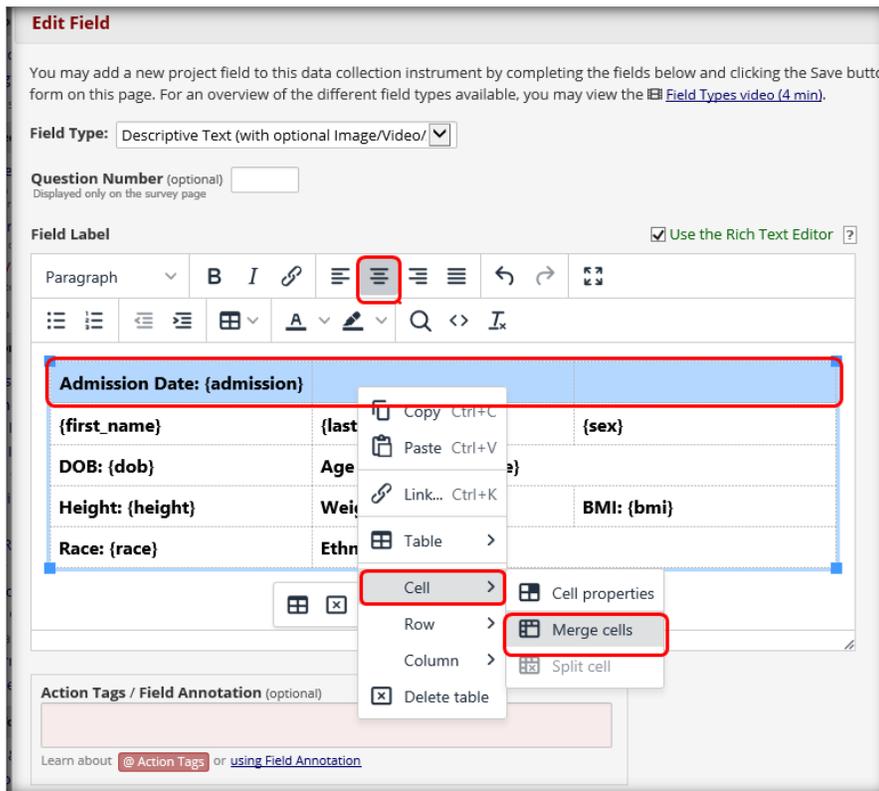
- Next I add my labels and embedded fields into my 3 x 5 table. This appears to be what I want but again the Online Designer does not give you an accurate representation of how the questions will actually appear. The only way to know for sure is to either take the survey or enter data into your data collection form.



- When I take my survey this is what I now see. This is better than my first attempt but still not exactly, what I would like.

- Since the user does not need to know, I am using a table I want to take the border off the table and cells. Start by clicking on the table, when the icon ribbon appears, click on the “Table Properties” icon and change the Border width to zero and save your changes.

- Next I would like the Admission Date to occupy all three columns of the first row and be centered above the rest of the fields. Start by highlighting all three columns for the Admission date, then right click and select Cell, followed by Merge cells. For this one row, the three cells of the table are merged into one cell. Finally click on the Center icon in the Rich Text Editor.



I have also changed the fields “Age at Admission” and “Ethnicity” to span the second and third columns of the table. After my changes are complete here is now how my survey appears.

The screenshot shows the 'Patient Information' survey form. It includes the following fields and options:

- Admission Date:** Admission [ 31 ] Today M-D-Y
- First Name:** [Text input]
- Last Name:** [Text input]
- Sex:**  Female  Male [reset](#)
- DOB:** DOB [ 31 ] M-D-Y
- Age at Admission:** [Text input]
- Height:** Height (cm) [Text input]
- Weight:** Weight (kg) [Text input]
- BMI:** [Text input]
- Ethnicity:**
  - Hispanic or Latino
  - NOT Hispanic or Latino
  - Unknown / Not Reported[reset](#)
- Race:** [Dropdown menu]

- This is now a more compact survey or data entry form. As you will find out there is a lot of trial and error before you will arrive at an acceptable layout so using Embedded Fields may or may not be beneficial to your project.

### Embedded Fields Requirement and Limitations

When using Embedded fields there are requirements and limitations, so their use may not be appropriate for every situation.

- Field embedding will not work across instruments but only on the current instrument/survey being viewed.
- On a multi-page survey, the embedded field must be on the same survey page as its host field.
- Fields may be embedded only in the following places: the Field Label, Field Note, Section Header, or Choice Label of another field on the same instrument.
- Fields cannot be embedded into drop-down labels, survey instructions, survey acknowledgment text, survey queue text, or into any outgoing emails/invitations/alerts.
- If your survey is using Enhanced radios and checkboxes, embedded fields will not work with checkboxes but they do work with radio buttons.
- If a field is embedded and has branching logic, the branching logic for that field will operate as it normally does, in which the embedded field will be hidden when its branching logic evaluates to FALSE. Additionally, if the host field contains branching logic that causes it to be hidden, then all fields embedded within it will be hidden as well (since they are considered part of the host field). When the host field is being hidden, if any of the embedded fields inside the host field have a value, then the user viewing the data entry form (surveys are excluded) will be given the 'Erase current value of the field?' prompt for each embedded field. In this case, if the user responds to the prompt with 'Cancel' in regard to erasing the value of *any* of the embedded fields, then the host field will not be hidden but will remain visible.
- A field cannot be embedded inside itself (i.e., in its own Field Label).
- A field cannot be embedded in another field's Field Label or Field Note if that field is also embedded elsewhere. If this is done, an error message will appear when viewing the instrument.
- The Field Notes from the field being embedded are not included.
- The Record ID field (the first field in the project) cannot be embedded because it is a special field.
- On a data entry form if a field's Data History, Field Comments, and (if enabled) Missing Data Codes icons need to be displayed you can do so by appending **:icons** to the variable name inside the curly brackets. So instead of embedding a field like this: **{last\_name}** you would so like this **{last\_name:icons}**.