Replacing Manipula in Blaise 5

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We have done a lot of tricky things in Blaise 4 by calling Manipula procedures from within the instrument that the data model alone cannot handle, for example, showing dialog, calling a third-party program and importing its output into the in-memory data of the ongoing interview, and starting different instruments in order with conditions. In Blaise 5, a lot of these can be accomplished with the use of the resource database.

Although Blaise 5 Manipula is still a very powerful tool, Manipula process scripts cannot be used in browsers. This paper discusses how, with the resource database, hopefully we can have similar flexibility in both windows and browsers on some occasions.

1. Things We Tried So Far

1.1 Replacing Manipula Dialog

In Blaise 4, we used the Maniplus Dialog to display text information, display images and let the user browse through it, obtain information from the user, and enter data directly into a Blaise data set. To do this, we tied the Manipula procedure that defined the dialog box to the type in the data model properties.

In Blaise 5, with the resource database, is the Maniplus Dialog a necessity for this purpose? A Page Template can display extra elements with label control, image control, and even video control. This is useful if we do not want to maintain multiple projects and packages to run Manipula procedures. However, that is not to say that displaying a page template from the resource database can totally replicate the experience of displaying a Maniplus Dialog.

A Maniplus Dialog can overlap the data entry window as a second window; the use of a master page template or a custom page template leads to a new page in the same window. While both can display the same elements and collect the same data, visually they are two different experiences. With a Maniplus Dialog, the user can tell they are being diverted to a new window while they can still see the original data entry window in the background; with a new page (even supported by a different page template for a different look and feel) in the same window, everything just seems to be part of the same flow to the user. Where one’s preference lies depends on the situation and the purpose of the page.

In addition, Maniplus Dialog still has the advantage of being able to define precise dialog height and width that we cannot do in a page template.

1.2 Running Third-Party Programs

In Blaise 4, we used the Maniplus Run function to execute external applications. To do so during runtime, we tied the Manipula procedure in the data model properties to the type that needs to run the third-party application.

The introduction of the StartLocalProcess action in Blaise 5.13 opened the door to a whole new world. The StartLocalProcess action is very handy for the purpose of running third-party applications. It eliminated the needs for a Manipula procedure to run external applications. In the middle of a survey, we can introduce something that cannot be programmed in Blaise, or something that simply can be programmed more efficiently outside of Blaise.

With the Blaise 5 SessionData API, we should be able to create external programs that pass data between the Blaise data in the current session and the external programs. What happens in Vegas does not have to stay in Vegas anymore. We might be able to bring home the money.

However, it is also worth noting that, like Manipula, the StartLocalProcess action does not work in browsers.

1.3 Flexible Routing

We always count on Blaise to follow the rules. In a Blaise survey, a field cannot be on route more than once in the rules. Rules are checked constantly to ensure data integrity. That is a strength. However, this can also become inflexible on occasion. When needed, we would like to not follow the rules.

In Blaise 4, the easiest we could do might be the INVOLVING instruction in an edit check. But that has to be presented as an error, not a choice. Of course, the next thing we could always count on was, again, Manipula because we could use the Maniplus instruction SETACTIVEFIELD.

In Blaise 5, with various resource database actions, it is relatively easy to change the flow of routing when necessary. For instance, rather than asking the respondent to move back many pages to change something, we can let them press a button to jump back to a certain point. With the GotoField action in Blaise 5, we can provide respondents with the opportunity to jump between questions without triggering any errors or maintaining Manipula scripts.

However, this happens while the rules are still running constantly. So we need to keep in mind that what we are doing outside of the rules still needs to be in compliance with the rules.

1.4 Running Multiple Surveys in Order

In Blaise 4, when we need to run multiple instruments together in a certain order, we would use the Maniplus Edit function/method to start multiple data entry sessions in one sitting. This usually happens outside of the instrument in Manipula.

In Blaise 5, we can use the StartSurvey action for this purpose without the help of Manipula. The StartSurvey action can be used in more than just the OnEnd event. Using the StartSurvey action in the OnEnd event, we can easily run multiple surveys from start to end in one order. Using the StartSurvey action in the OnLoad event of a page, or an event triggered by a layout control such as an OnClick event of a button, we do not have to wait until a survey is completed before the next survey starts. The current session will end and the survey data will be saved before the StartSurvey action is performed.

We can still see the value of controlling the flow of multiple surveys in Manipula with the Edit function/method if it is preferable to keep the programming of that flow in one place, that is, one Manipula project. However, using the StartSurvey action outside of Manipula gives us the flexibility of when, where, and how different surveys start consecutively. More significantly, the StartSurvey action also works in web surveys, while Manipula still cannot.

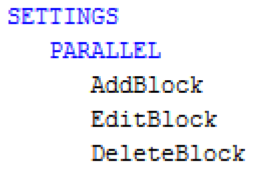
2. Examples

2.1 Replacing Manipula Dialog Boxes with Parallel Blocks

In Blaise 4, we used Maniplus Dialog to collect roster member information in a dialog box, where we could offer options of actions like add, edit, and delete. In this example, we use a combination of parallel blocks and resource database actions to collect a roster of medicines. This involves off-route flows that are transparent to the respondents.

2.1.1 Data Model

In the data model, we define a parallel block for each individual “dialog” path.

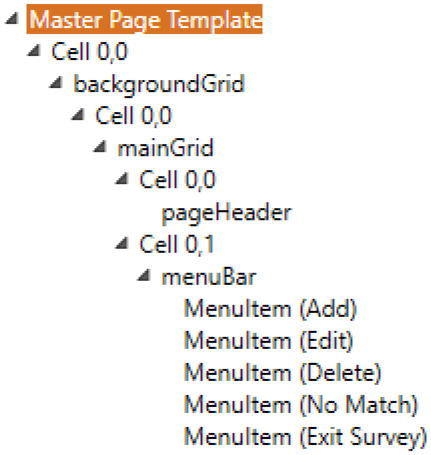


```
SETTINGS
  PARALLEL
    AddBlock
    EditBlock
    DeleteBlock
```

Each parallel block adds/edits/deletes medicines and saves the medicines back to the Main parallel block. As a result, the data collected in the parallel blocks are disposable.

2.1.2 Resource Database

In the resource database, we can use menu bar items, buttons, or keyboard shortcuts to provide access to the parallel blocks. In our example, we use menu bar items with a shortcut property to lead to the parallel blocks and other off-route flows.



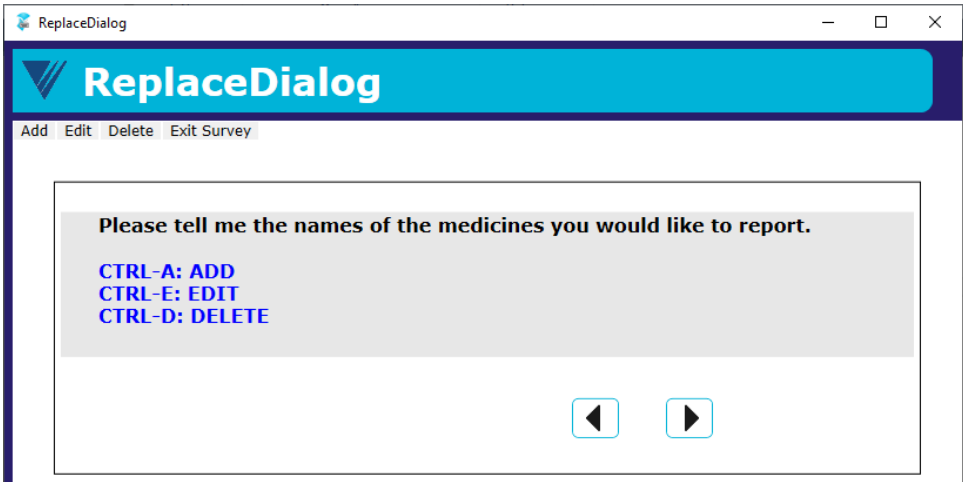
```
◢ Master Page Template
  ◢ Cell 0,0
    ◢ backgroundGrid
      ◢ Cell 0,0
        ◢ mainGrid
          ◢ Cell 0,0
              pageHeader
          ◢ Cell 0,1
            ◢ menuBar
                MenuItem (Add)
                MenuItem (Edit)
                MenuItem (Delete)
                MenuItem (No Match)
                MenuItem (Exit Survey)
```

```
<MenuItem Text="Add" Shortcut="Ctrl+A" Visibility="{Expression IF
ENDSWITH(State.ActiveFieldName, 'Roster') THEN 'Visible' ELSE
'Collapsed' ENDIF}" OnClick="{Action SetParallel('AddBlock')}" />

<MenuItem Text="Edit" Shortcut="Ctrl+E" Visibility="{Expression IF
ENDSWITH(State.ActiveFieldName, 'Roster') THEN 'Visible' ELSE
'Collapsed' ENDIF}" OnClick="{Action SetParallel('EditBlock')}" />

<MenuItem Text="Delete" Shortcut="Ctrl+D" Visibility="{Expression IF
ENDSWITH(State.ActiveFieldName, 'Roster') THEN 'Visible' ELSE
'Collapsed' ENDIF}" OnClick="{Action SetParallel('DeleteBlock')}" />

<MenuItem Text="No Match" Shortcut="Ctrl+Z" Visibility="{Expression IF
Page.ActiveField.TypeName = 'TLookupString' THEN 'Visible' ELSE
'Collapsed' ENDIF}" OnClick="{Action AssignField('NoMatchButton', '1',
{Expression 1});Save();GotoField('AddBlock.PMedNoMatchString')}" />
```

Sending the user to a parallel block is the easy part. Clearing out the data from the parallel blocks while keeping the data in the Main parallel could take some effort. Of course, we can always create arrays of the parallel blocks so that each call of the parallel block is a new instance, rather than clearing out anything. But that also means we would be keeping duplicated data that are not necessary, unless it is desirable to keep the history of all the add/edit/delete instances.

2.1.3 Result

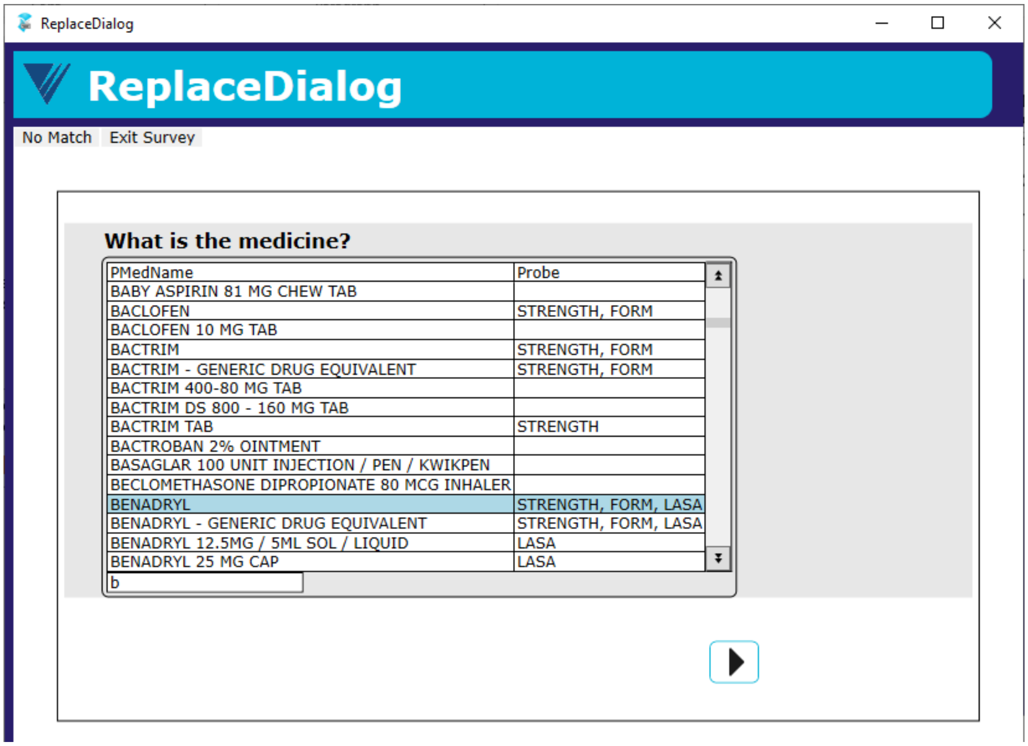
We first start in the Main parallel.



Please tell me the names of the medicines you would like to report.

CTRL-A: ADD
CTRL-E: EDIT
CTRL-D: DELETE

Either CTRL-A or the "Add" on the menu bar leads us to the parallel AddBlock.

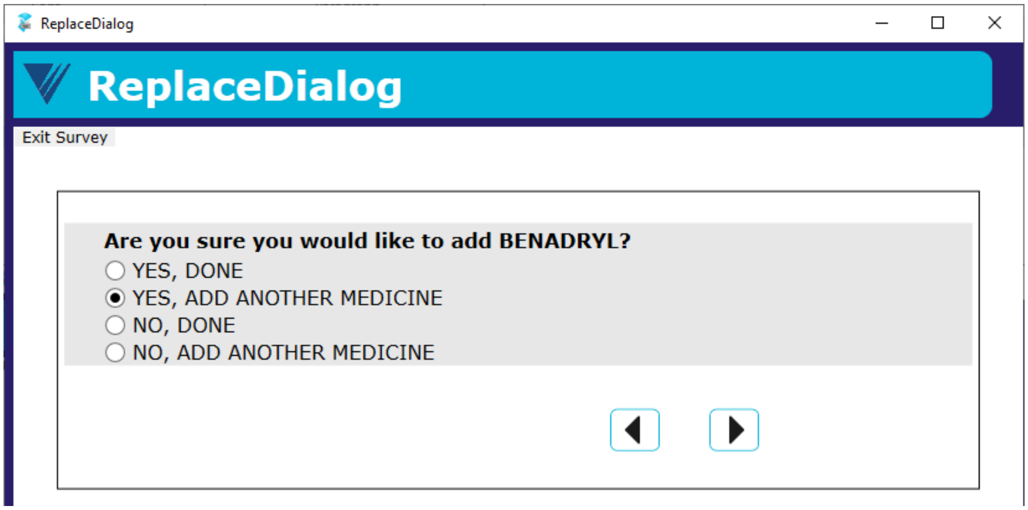


What is the medicine?

PMedName	Probe
BABY ASPIRIN 81 MG CHEW TAB	
BACLOFEN	STRENGTH, FORM
BACLOFEN 10 MG TAB	
BACTRIM	STRENGTH, FORM
BACTRIM - GENERIC DRUG EQUIVALENT	STRENGTH, FORM
BACTRIM 400-80 MG TAB	
BACTRIM DS 800 - 160 MG TAB	
BACTRIM TAB	STRENGTH
BACTROBAN 2% OINTMENT	
BASAGLAR 100 UNIT INJECTION / PEN / KWIKPEN	
BECLOMETHASONE DIPROPIONATE 80 MCG INHALER	
BENADRYL	STRENGTH, FORM, LASA
BENADRYL - GENERIC DRUG EQUIVALENT	STRENGTH, FORM, LASA
BENADRYL 12.5MG / 5ML SOL / LIQUID	LASA
BENADRYL 25 MG CAP	LASA

b

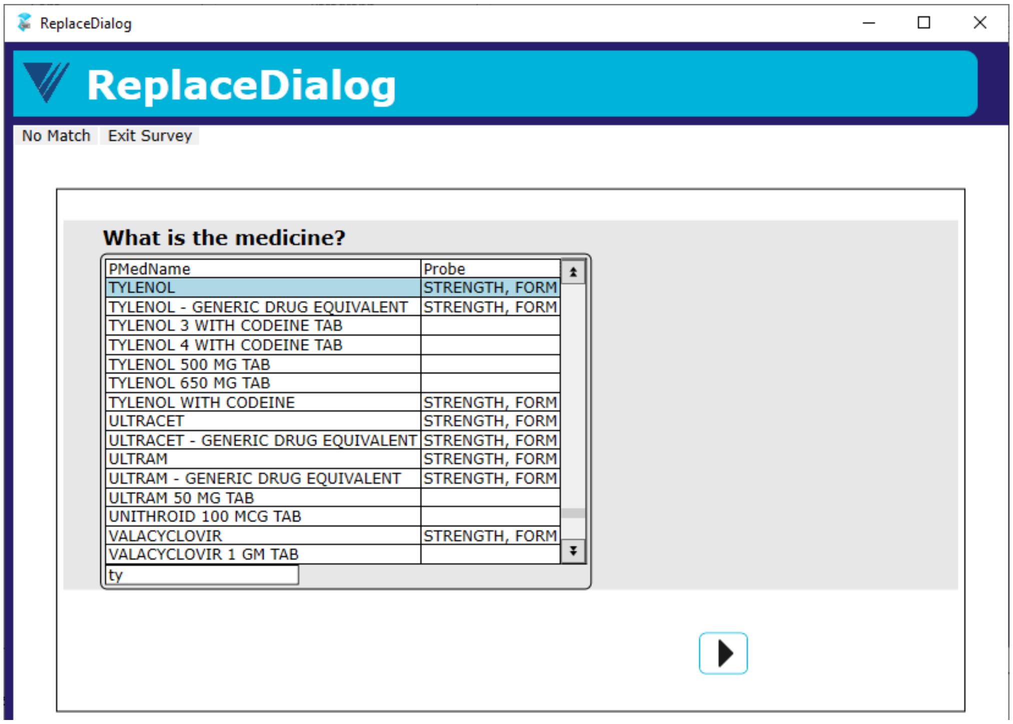
Select BENADRYL and click the forward arrow.



Are you sure you would like to add BENADRYL?

○ YES, DONE
● YES, ADD ANOTHER MEDICINE
○ NO, DONE
○ NO, ADD ANOTHER MEDICINE

Confirm adding and plan to add another medicine.

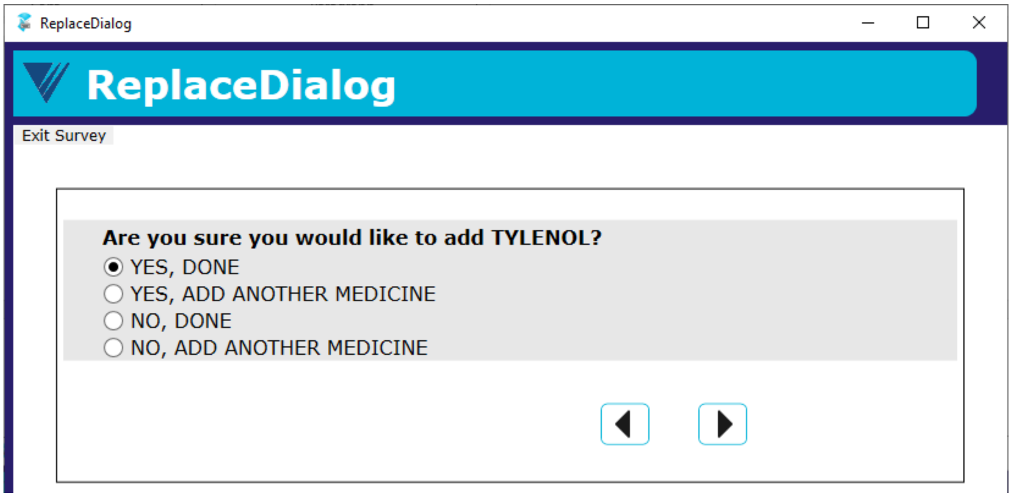


What is the medicine?

PMedName	Probe
TYLENOL	STRENGTH, FORM
TYLENOL - GENERIC DRUG EQUIVALENT	STRENGTH, FORM
TYLENOL 3 WITH CODEINE TAB	
TYLENOL 4 WITH CODEINE TAB	
TYLENOL 500 MG TAB	
TYLENOL 650 MG TAB	
TYLENOL WITH CODEINE	STRENGTH, FORM
ULTRACET	STRENGTH, FORM
ULTRACET - GENERIC DRUG EQUIVALENT	STRENGTH, FORM
ULTRAM	STRENGTH, FORM
ULTRAM - GENERIC DRUG EQUIVALENT	STRENGTH, FORM
ULTRAM 50 MG TAB	
UNITHROID 100 MCG TAB	
VALACYCLOVIR	STRENGTH, FORM
VALACYCLOVIR 1 GM TAB	

ty

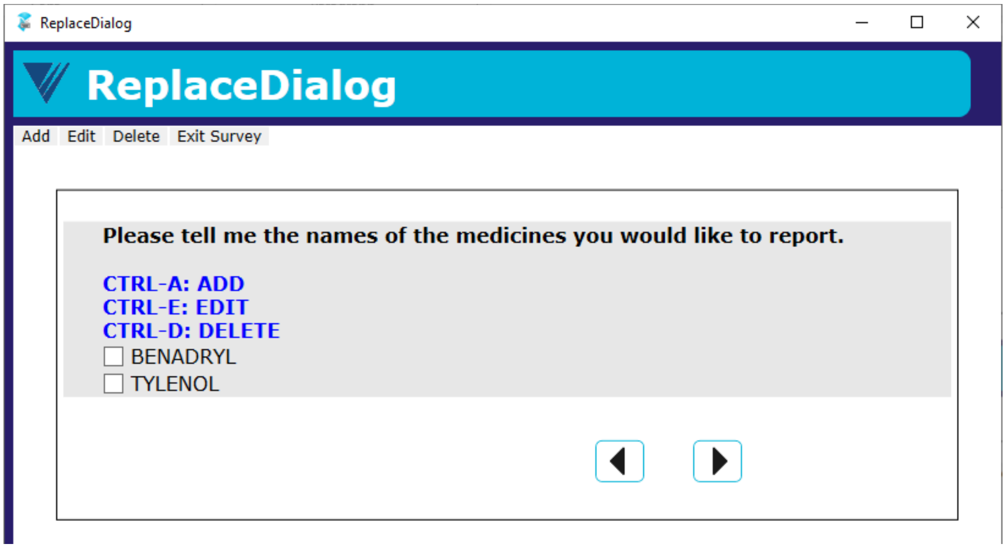
Select TYLENOL this time and move forward.



Are you sure you would like to add TYLENOL?

● YES, DONE
○ YES, ADD ANOTHER MEDICINE
○ NO, DONE
○ NO, ADD ANOTHER MEDICINE

The end of the parallel AddBlock leads us back to the Main parallel.

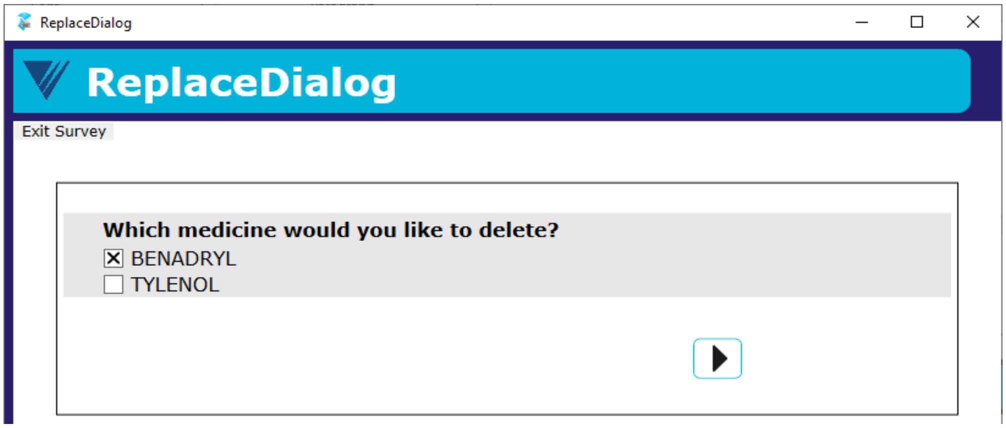


Please tell me the names of the medicines you would like to report.

CTRL-A: ADD
CTRL-E: EDIT
CTRL-D: DELETE

□ BENADRYL
□ TYLENOL

Either CTRL-D or “Delete” on the menu bar leads us to the parallel DeleteBlock.

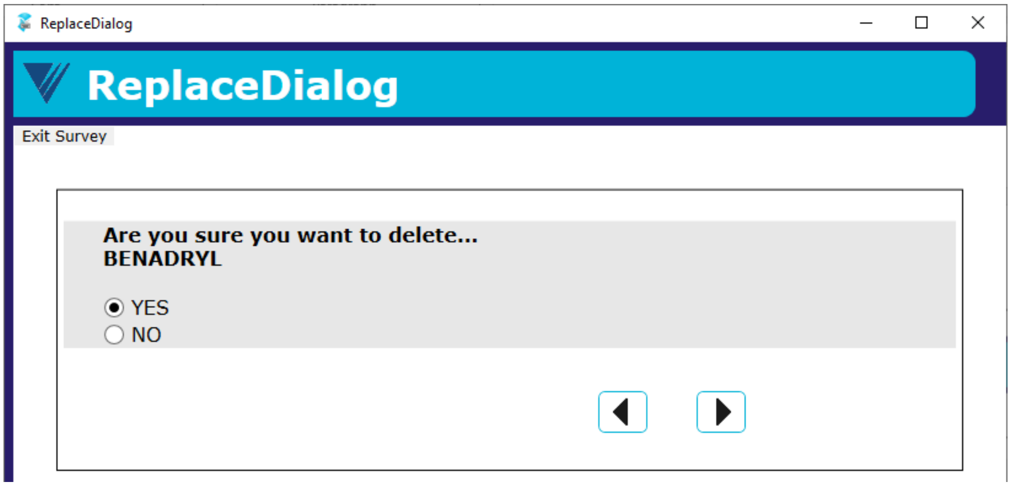


Which medicine would you like to delete?

☒ BENADRYL

□ TYLENOL

Select BENADRYL to delete.

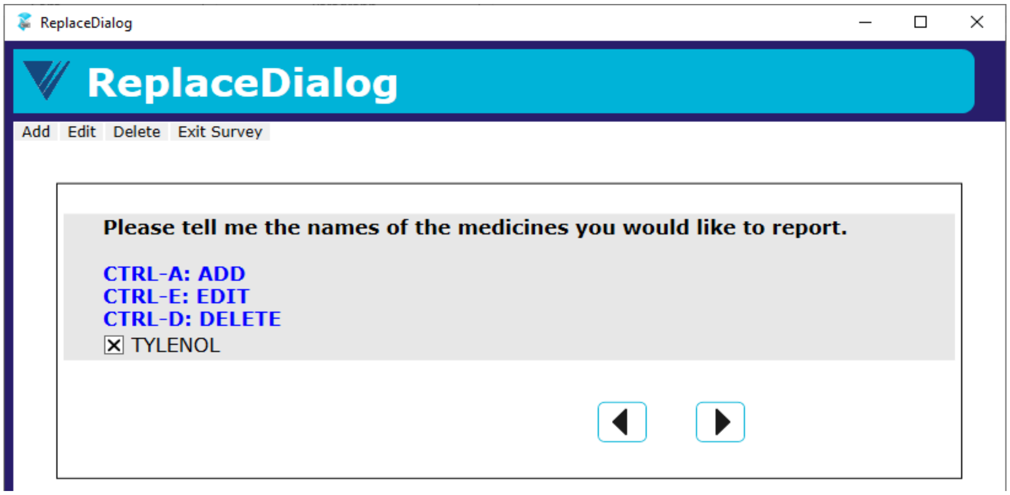


Are you sure you want to delete...
BENADRYL

● YES

○ NO

The end of the parallel DeleteBlock leads us back to Main parallel.

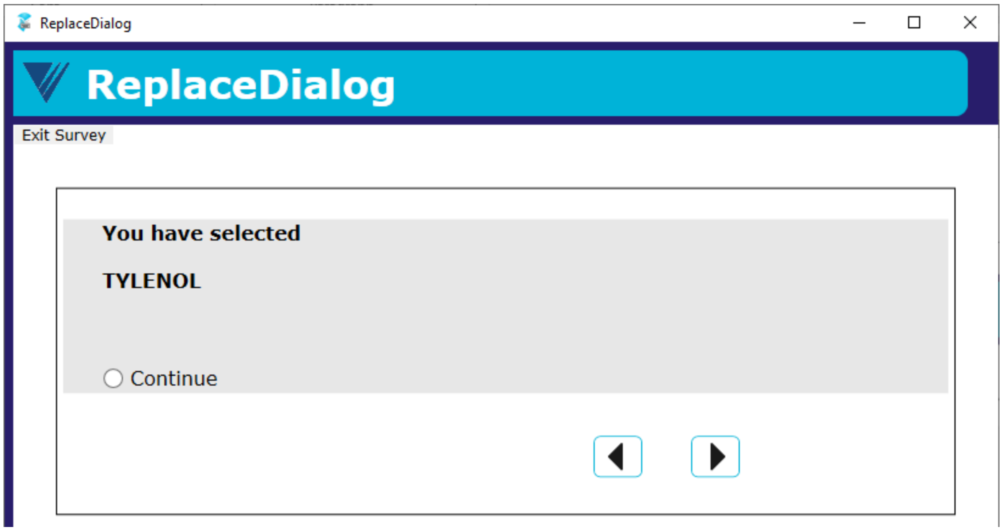


Please tell me the names of the medicines you would like to report.

CTRL-A: ADD
CTRL-E: EDIT
CTRL-D: DELETE

☒ TYLENOL

Click the forward arrow to the next page in the Main parallel.



You have selected

TYLENOL

○ Continue

We see the medicines that we added but not the ones we deleted.

2.2 Off-Route to Go Back to an Earlier Question

In this example, we collect family household member information on the phone one by one. When the user stops adding more people, we ask them to confirm. When the confirmation is denied, rather than asking the user to keep pressing the “back” button to move backward to the beginning to correct the answers, we lead the user back to the page where the first household member was collected.

To the respondents, this happens when they simply answer the questions. They do not need to use extra buttons or keys to go off-route.

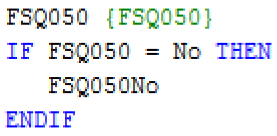
2.2.1 Resource Database

In the resource database, we created master page template PageGoToFieldMobile that goes to a certain field on load. We are hardcoding the field being redirected here for simplicity. However, with the addition of a page template parameter or a conditional action, this page can easily serve the purpose of redirecting to more than one field.

```
<MasterPageTemplate DesignWidth="320" DesignHeight="480"
OnLoad="{Action
GotoField('FSQ.PersonTable.HHRoster[1].FSQ010IntroMobile')}">
```

2.2.2 Data Model

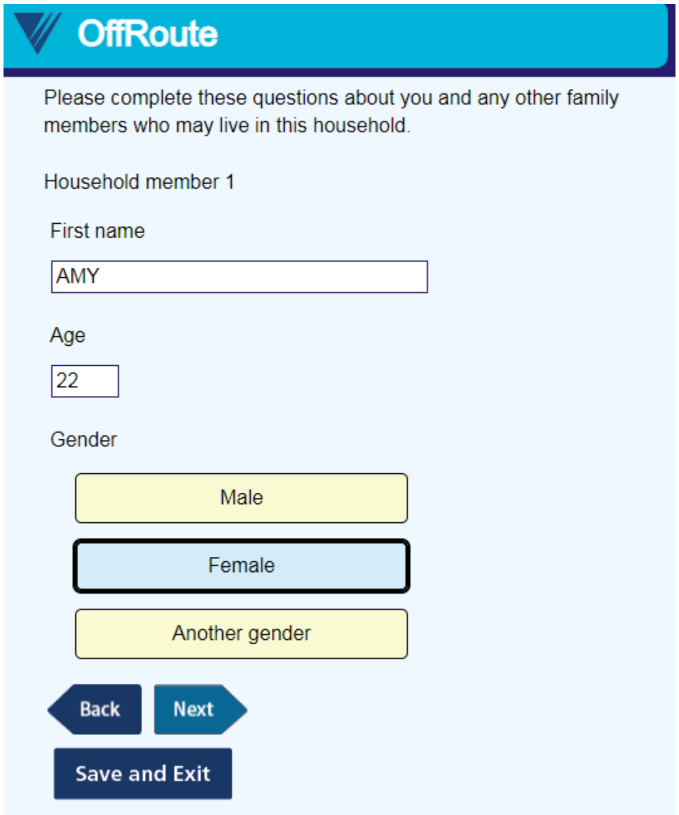
In the data model, after confirmation is denied, we route to a dummy page that uses the above mentioned PageGoToFieldMobile page template to go back to the first household member collected.



```
FSQ050 {FSQ050}
IF FSQ050 = No THEN
   FSQ050No
ENDIF
```

```
LAYOUTSET "Phone"
   AT FSQ050No MASTERPAGE TEMPLATE "PageGoToFieldMobile"
```

2.2.3 Result



Please complete these questions about you and any other family members who may live in this household.

Household member 1

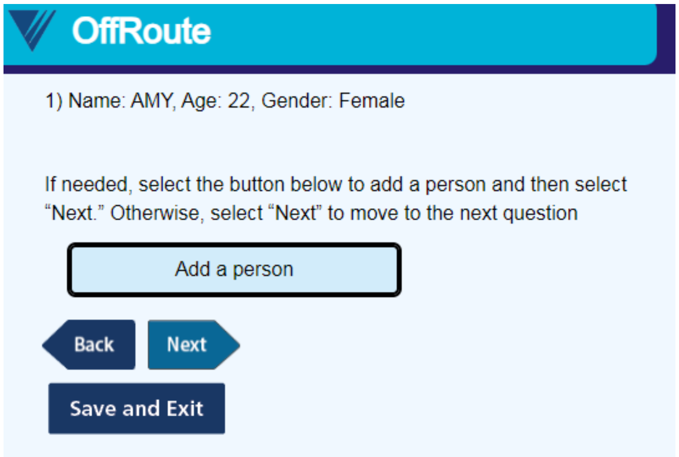
First name

AMY

Age

22

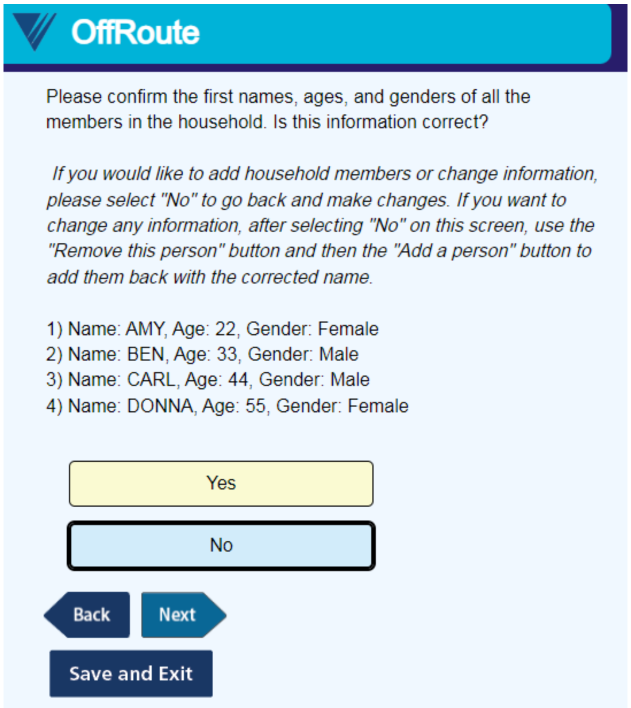
Gender



1) Name: AMY, Age: 22, Gender: Female

If needed, select the button below to add a person and then select "Next." Otherwise, select "Next" to move to the next question

And a few more household members later …



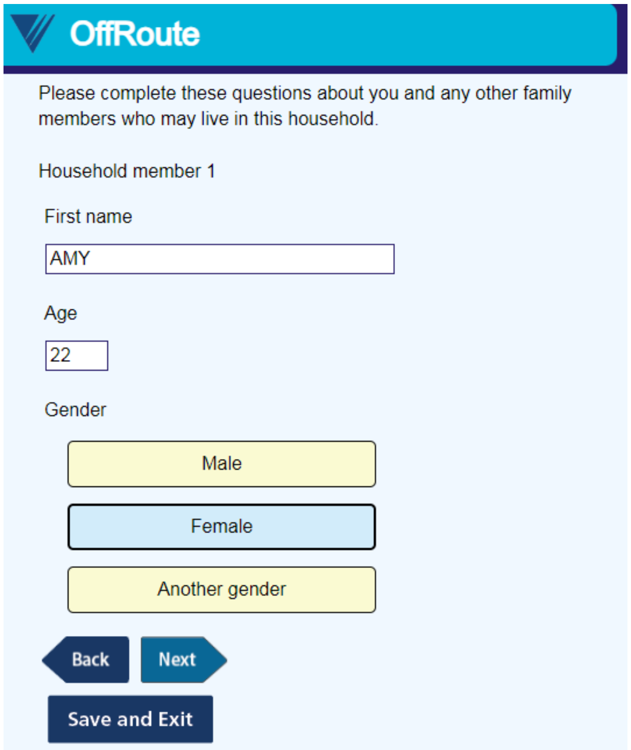
Please confirm the first names, ages, and genders of all the members in the household. Is this information correct?

If you would like to add household members or change information, please select "No" to go back and make changes. If you want to change any information, after selecting "No" on this screen, use the "Remove this person" button and then the "Add a person" button to add them back with the corrected name.

1) Name: AMY, Age: 22, Gender: Female
2) Name: BEN, Age: 33, Gender: Male
3) Name: CARL, Age: 44, Gender: Male
4) Name: DONNA, Age: 55, Gender: Female

Yes [✓ No]

After the answer "No" is selected and the "Next" button is clicked, we are led back to the first household member collected.



Please complete these questions about you and any other family members who may live in this household.

Household member 1

First name

AMY

Age

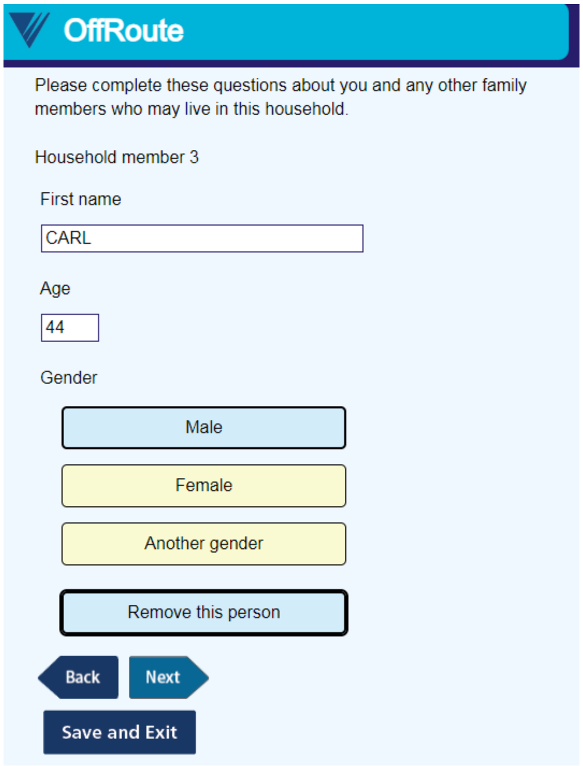
22

Gender

Male [✓ Female] Another gender

Now, let us remove Carl.

We click the “Next” button a few times to move forward to Carl’s page.



Please complete these questions about you and any other family members who may live in this household.

Household member 3

First name

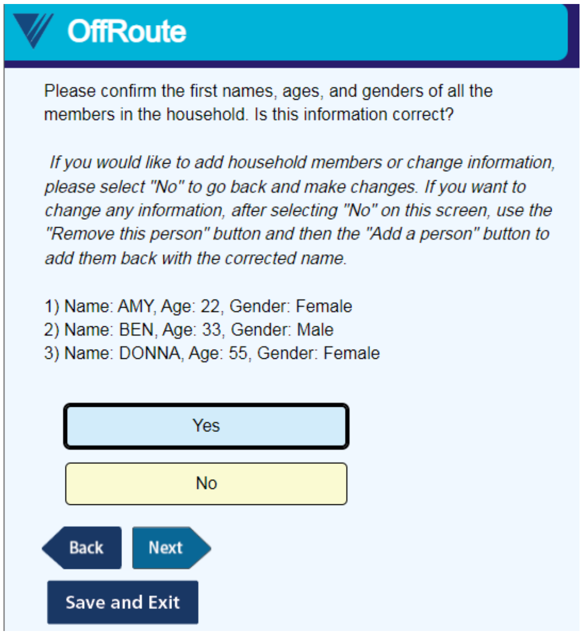
CARL

Age

44

Gender

We click the “Remove this person” button, and then we click the “Next” button a few times to move back to the confirmation page.

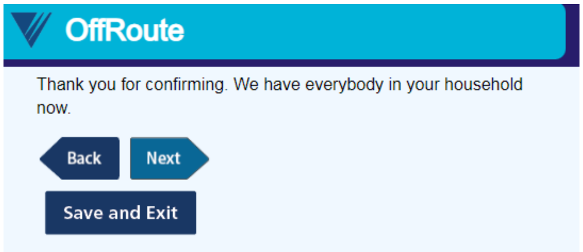


Please confirm the first names, ages, and genders of all the members in the household. Is this information correct?

If you would like to add household members or change information, please select "No" to go back and make changes. If you want to change any information, after selecting "No" on this screen, use the "Remove this person" button and then the "Add a person" button to add them back with the corrected name.

1) Name: AMY, Age: 22, Gender: Female
2) Name: BEN, Age: 33, Gender: Male
3) Name: DONNA, Age: 55, Gender: Female

Now we click the “Yes” button to confirm and move forward.



Thank you for confirming. We have everybody in your household now.

It routes to the next page.

To make this more sophisticated and less for the respondent to navigate, we can also make the collected household member roster available as an enumerated type question for the respondent to choose which household member they would like to go back to change.

3. Conclusions

With the resource database, it is relatively easy to run third-party programs, navigate off-route, or even start multiple surveys given different conditions consecutively. We just need to be mindful of covering all grounds, especially when we try to program routing outside of the rules.

However, while we can program similar functionality and collect the same data without Manipula Dialog, I cannot say we can really recreate the experience of a Manipula Dialog box yet without Manipula. It is because there are controls that we do not have outside of Manipula Dialog like sizing of the window. Moreover, the laying over of windows cannot happen within one survey project.

Unfortunately, Manipula still does not work in browsers. So the web experience would still be somewhat limited when compared to the Windows DEP experience.