Notes on Scenario-Based Testing for Certification

V1

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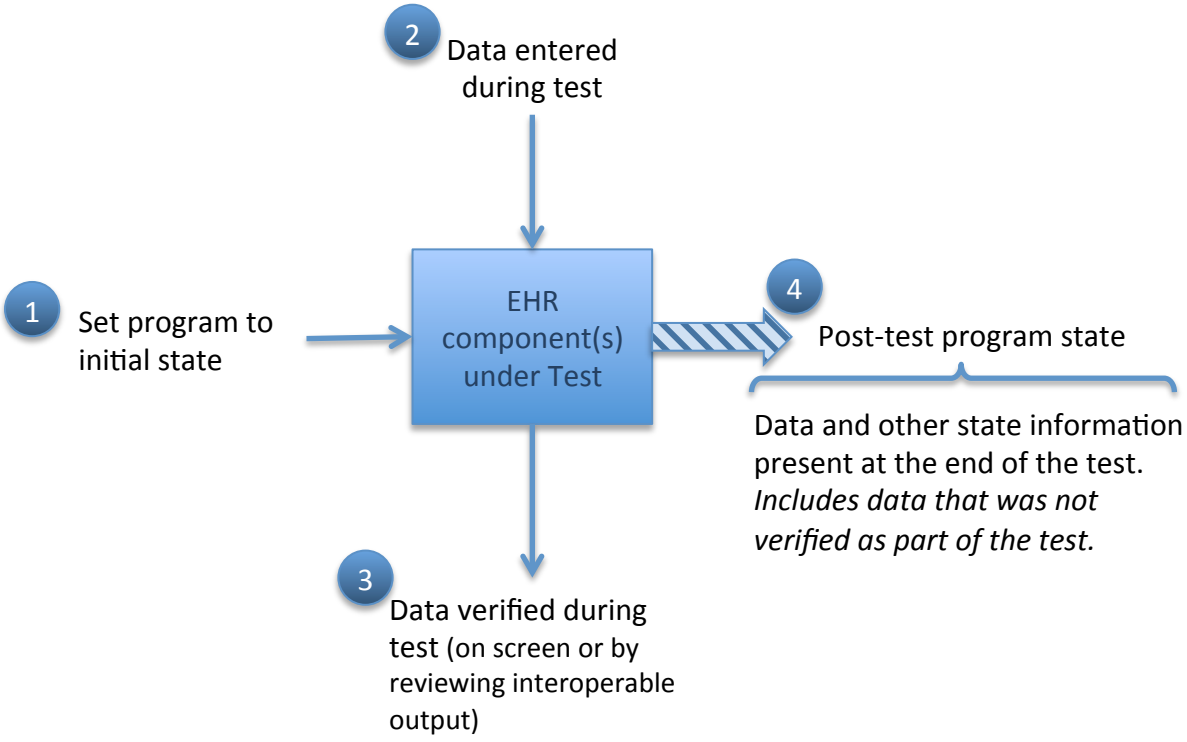
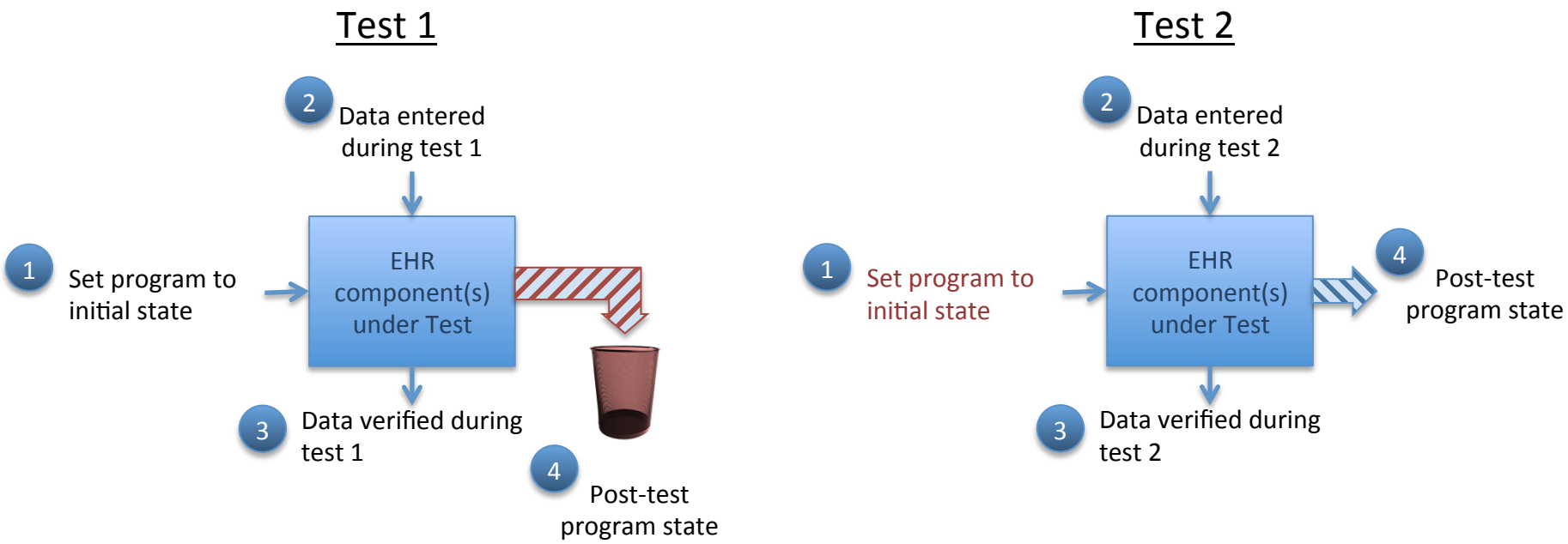
The purpose of these slides is to call out clearly certain concepts and issues related to scenario-based testing.

One Unit Test



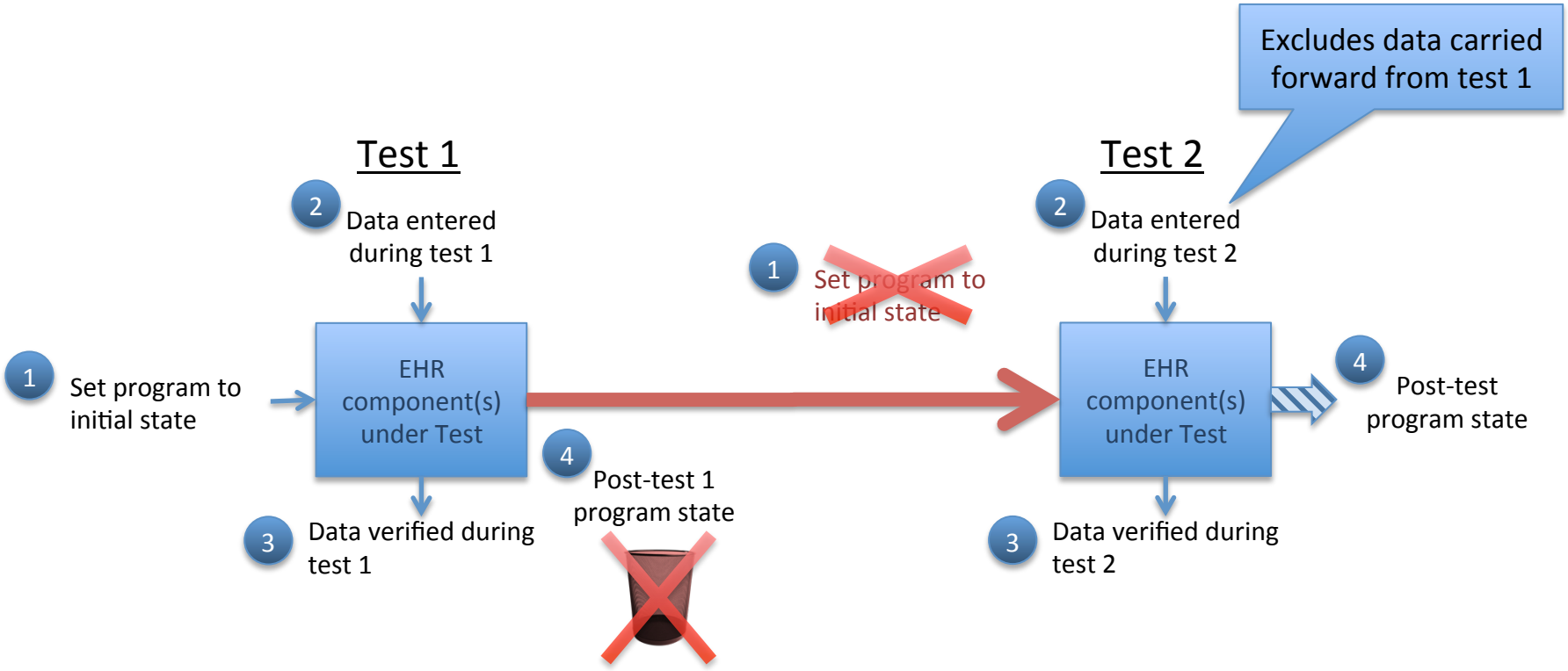
Two Unit Tests



Notes:

1. Current testing practices call for unit tests to be independent. Testing frameworks often randomize the sequence of unit tests in order to detect any accidental carry-forward of data or program state from one test to the next.

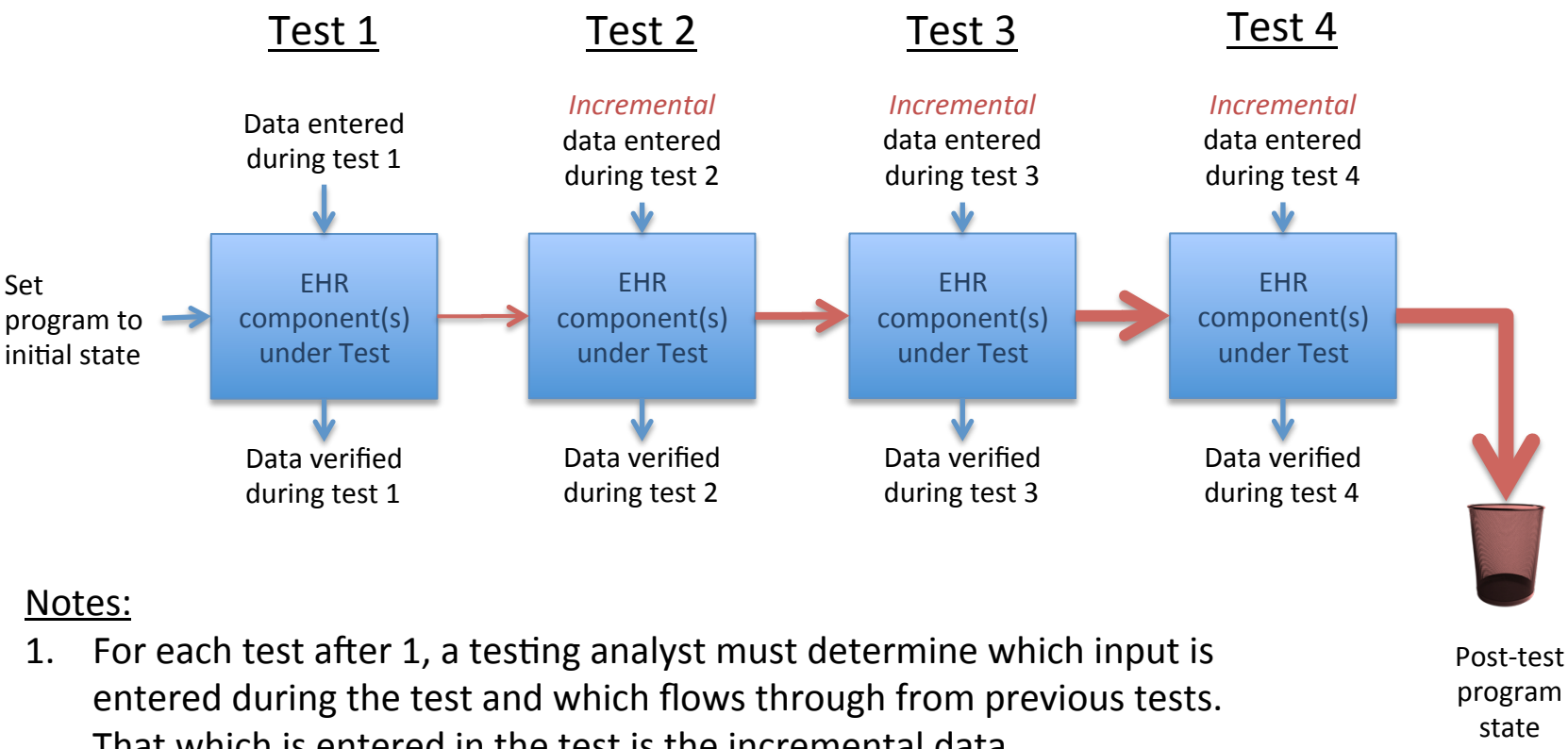
Scenario-Based Test Sequence



Notes:

1. In order to avoid redundant data entry this test sequence assumes a the sequence of unit tests.
2. This is acceptable because the purpose of certification is different than that of quality testing. For certification we verify that the expected outcome can occur. We are not certifying that the code is bug free.

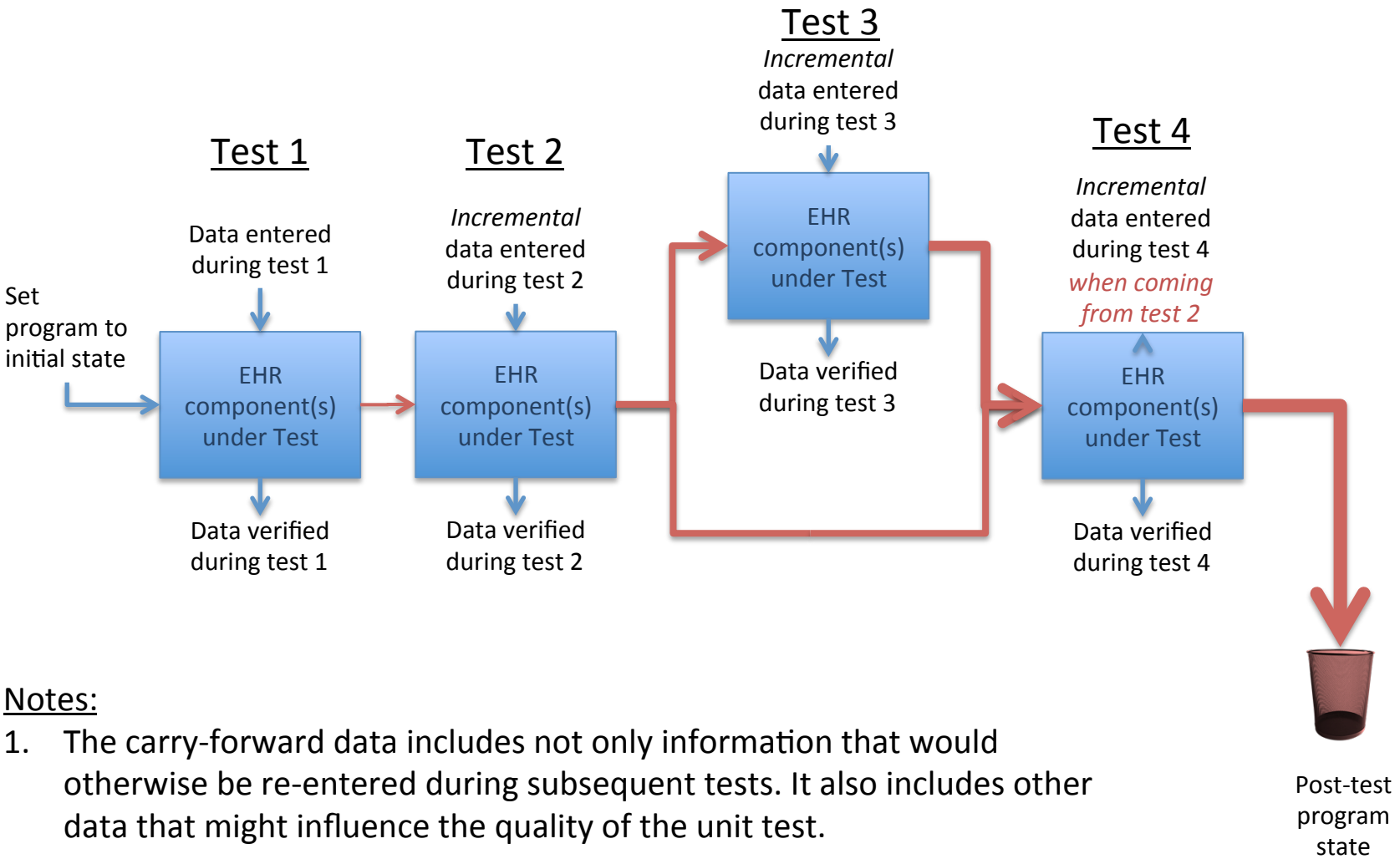
Multi-Test Scenario



Notes:

1. For each test after 1, a testing analyst must determine which input is entered during the test and which flows through from previous tests. That which is entered in the test is the incremental data.
2. There are two testing scripts for each of tests 2, 3 and 4 one with all data entered and one that only enters the incremental data.
3. The flow-through data includes not only information that would otherwise be re-entered during subsequent tests. It also includes other data that might influence the quality of the unit test.
4. The volume of flow-through data is compounded with each test in the scenario.

Scenario-Based Sequence: Optional Tests



Notes:

1. The carry-forward data includes not only information that would otherwise be re-entered during subsequent tests. It also includes other data that might influence the quality of the unit test.

Is there a simplified method of preparing these Highly redundant test scripts?

Data	Test 1	Test 2	Test 2	Test 3	Test 3	Test 3	Test 3
Value	Unit	Unit	Scenario	Unit	Test 1 Done, Not 2	Test 2 Done, not 1	Tests 1 and 2 Done
PCP	X	X					
Occupation	X	X		X		X	
Home Addr		X	X				
Weight		X	X	X	X		
Medication				X	X	X	X
Problem				X	X	X	X
Allergy				X	X	X	X

Notes:

1. On first glance it looks tedious, but not complex.
2. There are special cases such as when data may be entered in test 1, deleted in test 2 and normally re-entered in test 3.

Scripting is easier if each test can include a "confirm or enter" instruction.

Data	Test 1	Test 2	Test 3
Value	Unit	All variations	All variations
PCP	Enter	Confirm or Enter	
Occupation	Enter	Confirm or Enter	
Home Addr		Enter	
Weight		Enter	Confirm or Enter
Medication			Enter
Problem			Enter
Allergy			Enter

Notes:

1. Less savings in test time because of the need to confirm data already present.
2. Provides a more complete audit of each test because the values present are confirmed.