

## **BJS CENSUS OF PUBLICLY FUNDED CRIME LABORATORIES: PRETEST RESULTS AND RECOMMENDATIONS**

### **OVERVIEW**

Due to a growing need for information about forensic laboratories in the United States, the Bureau of Justice Statistics (BJS) obtains information from crime labs as part of its Census of Publicly Funded Crime Laboratories (CLC) data collection series. The Urban Institute (UI) has been contracted to perform the 2009 CLC. In accordance with guidelines from the Office of Management and Budget (OMB), the Urban Institute administered the draft BJS CLC instrument to nine publicly funded forensic labs as part of a pretest. The purpose was to pilot the instrument to assess the level of burden for respondents, the utility of the collection, and identify measurement issues or areas needing further clarification. The current report details observations from the administration of this pretest, as well as findings from post-administration interviews with each of the pretest sites.

### **METHODOLOGY**

The pretest for the CLC consisted of two tasks. First, the research team administered a draft version of the survey instrument to nine eligible crime labs along with a pretest respondent questionnaire to obtain additional feedback about the survey. Second, the research team contacted all pretest site respondents by phone to discuss the experience of completing the survey, obtain opinions on items being considered for revision, and clarify any unclear responses.

#### **Survey Administration**

The CLC draft instrument was mailed to the nine pretest laboratories on February 11, 2010. Lab responses were delayed due to a snow storm in the Washington, DC area. However, all responses were received by March 31, 2010. Respondents were also asked to complete a separate questionnaire asking about completion times and resources expended to complete the survey (see Appendix A).

#### **Post-Administration Interviews**

The UI team asked all pretest site respondents a series of questions, in addition to any questions that arose in regards to the lab's particular responses. All pretest site respondents were asked the following:

- Do you want your pretest response to count as your official response for the 2009 Census of Publicly Funded Crime Labs?

- Are cases or requests easier for your lab to report? Are you able to track by both? Did you have any problems counting cases for items D3 and D4 and counting requests for items D8-D20?
- How comfortable are you reporting the lab director salary?
- Did you calculate or estimate the turnaround time? Was this a burdensome or difficult question to answer? How important do you think this question is to the field?
- What is your opinion on item F7, asking about performance expectations? Was this a burdensome or difficult question to answer? How important do you think this question is to the field?
- Did you use the help text or glossary? How helpful were these?
- Do you have any additional suggestions or is there anything else you want to share about the experience of completing the census?

These questions were asked to gain a better understanding of the general experience of completing the survey and to hear respondent opinions about items being considered for revision. In addition, the UI team discussed potential survey changes with the two forensic consultants included on the team. Their opinions are also identified below.

## **FINDINGS**

The following findings are divided into four categories: (a) reported amount of time to complete the survey by pretest sites, (b) general feedback on instrument, (c) respondent opinions on items being considered for revision, and (d) observations of other survey issues and responses to questions about individual survey responses.

### **Completion Times**

Pretest sites reported a wide range in survey completion times. The overall time to complete the survey ranged from 1 hour and 50 minutes to 52 hours and 53 minutes (see Table 1). On average, pretest sites took nine and a half hours to complete the survey. Lab 7 was an outlier, reporting it took nearly 53 hours to complete the survey. Removing Lab 7 from calculations, the average time to complete the survey decreased to 4.1 hours (see Table 2). Lab 7 has more disciplines than the typical lab and explained that they sent the survey out to each unit for completion of the workload sections. Adding the time to complete overall laboratory items to the time for each unit to complete their individual sections resulted in the reported completion time.

The *Current Issues* section took the least amount of time for labs to complete, while the *Workload* section was the most burdensome. The nine pretest sites reported using between 1 and 15 staff members to complete the survey, and no labs reported additional resource expenses to complete the survey other than the listed staff time. Individual lab completion times for each sub-section are listed below in Tables 1 and 2.

### **General Feedback on Instrument**

Conversations with pretest sites did not elicit strong complaints about the census instrument or overall burden in completing it. All sites, except one, wanted the pretest to count as their official submission. While some of the sites reported the Help Text and Glossary were moderately helpful, other labs did not use these tools or could not remember if they had used them. In multiple contexts, labs reported that the most difficult thing about the census is that labs track information differently.

### **Respondent Opinions on Items Considered for Revision**

Pretest sites were asked about the following issues or items that were being considered for removal or revision.

#### *Tracking cases versus requests*

Five pretest labs reported they tracked by request or submission; three labs said they could track by either unit of measurement; and one lab said there was no distinction between cases and requests within their agency (i.e., 10 items come in from one crime and this is one request). A couple pretest respondents had reported requests in items D3-D4 without noting on their survey that they were reporting requests rather than cases.

**Table 1. Response Times for All Pretest Sites**

Section	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Average minutes	Std Dev (min)	Average hours	Std Dev (hr)
A. Organization	3	30	5	30	15	4	3	15	5	12.22	11.12	0.204	0.185
B. Budget	36	60	10	15	30	12	10	60	30	29.22	19.94	0.487	0.332
C. Staff	7	30	15	15	15	16	180	30	30	37.56	54.07	0.626	0.901
D. Workload	60	120	60	30	150	65	2880	120	380	429.44	924.84	7.157	15.414
E. Outsourcing	4	15	10	10	75	7	10	10	15	17.33	21.90	0.289	0.365
F. Quality Assurance	9	60	5	10	60	30	60	60	15	34.33	25.30	0.572	0.422
G. Current Issues	1	15	5	10	15	1	20	5	5	8.56	6.78	0.143	0.113
<b>Entire Survey</b>	<b>120</b>	<b>330</b>	<b>110</b>	<b>120</b>	<b>360</b>	<b>135</b>	<b>3163</b>	<b>300</b>	<b>480</b>	<b>568.67</b>	<b>981.85</b>	<b>9.478</b>	<b>16.364</b>

**Table 2. Response Times for Pretest Sites Excluding Lab 7**

Section	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Average minutes	Std Dev (hr)	Average hours	Std Dev (hr)
A. Organization	3	30	5	30	15	4	---	15	5	13.38	11.30	0.223	0.188
B. Budget	36	60	10	15	30	12	---	60	30	31.63	19.87	0.527	0.331
C. Staff	7	30	15	15	15	16	---	30	30	19.75	8.94	0.329	0.149
D. Workload	60	120	60	30	150	65	---	120	380	123.13	111.32	2.052	1.855
E. Outsourcing	4	15	10	10	75	7	---	10	15	18.25	23.22	0.304	0.387
F. Quality Assurance	9	60	5	10	60	30	---	60	15	31.13	25.02	0.519	0.417
G. Current Issues	1	15	5	10	15	1	---	5	5	7.13	5.62	0.119	0.094
<b>Entire Survey</b>	<b>120</b>	<b>330</b>	<b>110</b>	<b>120</b>	<b>360</b>	<b>135</b>	<b>---</b>	<b>300</b>	<b>480</b>	<b>244.38</b>	<b>141.56</b>	<b>4.073</b>	<b>2.359</b>

Laboratory respondents brought up a few issues for consideration. Respondents reported that it was important to note that requests could have multiple items, so tracking at either the case- or request-level would not indicate the number of evidence samples being analyzed. Regarding D4 (the # of backlogged cases on 1/1/2010), one respondent said this was difficult to answer, because cases could have some backlogged items, whereas other items could be complete. It was unclear from the survey if a case should be counted as backlogged if one or all items were backlogged. In addition, laboratories in multi-lab systems could get separate requests from the same case (i.e., one case could create multiple submissions to different labs). Furthermore, laboratories in multi-lab systems can transfer evidence to other labs for analysis. One pretest site counted requests they received from another lab in the multi-lab system, because they were responsible for analyzing the evidence. In contrast, another pretest site did not count requests they received from other labs in their multi-lab system, because they assumed the originating lab would count this in their requests.

The diagrams below illustrate some of the varying ways that cases and requests can be handled in laboratories (this is not exhaustive) and the relationship between request and item. The item-request relationship is ultimately a function of the physical evidence generated from a criminal event and is not usually affected by laboratory policy. Figure 4 shows how one law enforcement case number may generate two laboratory case numbers. This situation may occur when evidence is collected from a suspect (DNA, fingerprints, etc.) during the course of the investigation for comparison with the original items collected, or when additional evidence is discovered or collected at a later date.

On the issue of using case versus request, the project's forensic consultants agreed that D4 should be changed to requests, but were divided on whether D3 should be tracked as case or request. One consultant felt D3 should remain as is for legacy reasons. The other consultant recommended D3 be changed to requests.

Figure 1. Requests and Cases

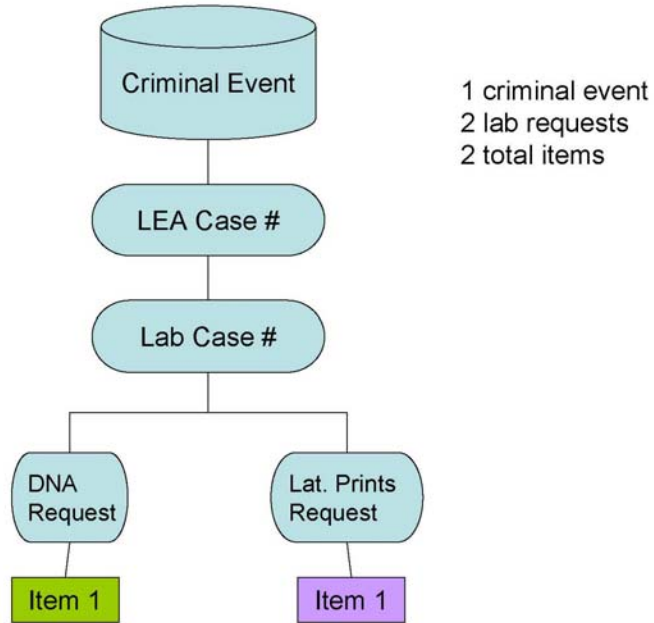


Figure 2. Requests and Cases

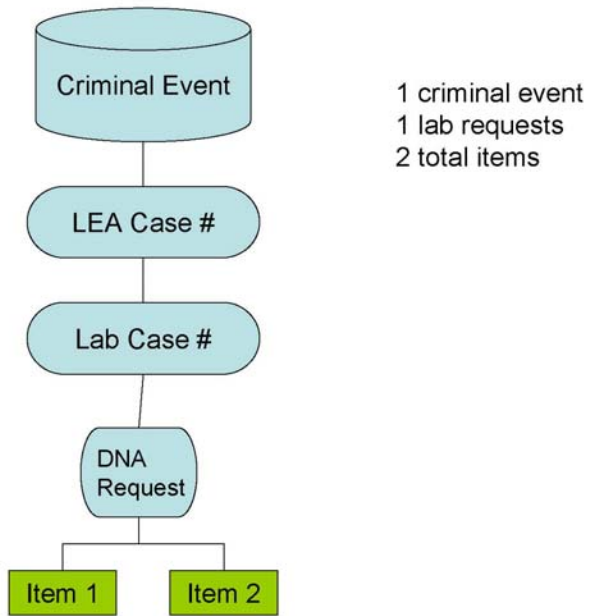


Figure 3. Requests and Cases

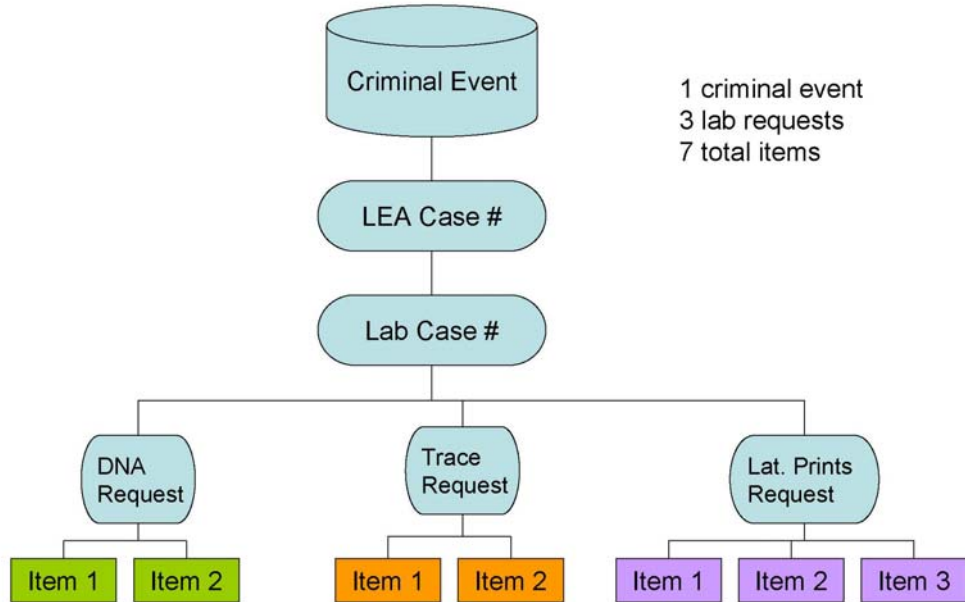
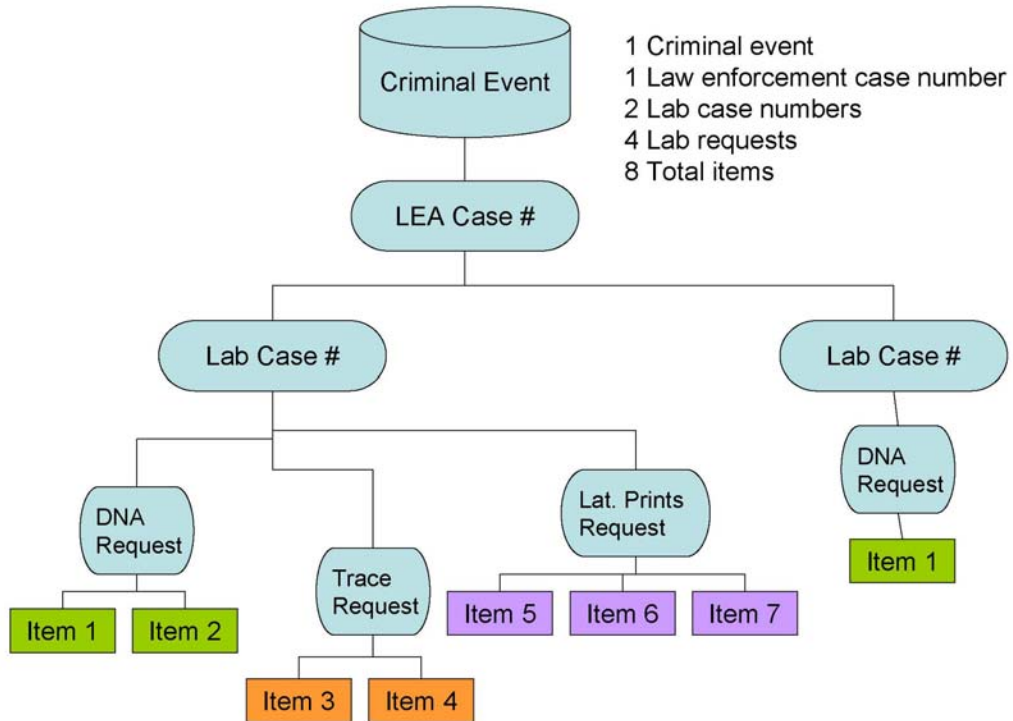


Figure 4. Requests and Cases



*Lab Director Salary*

No lab respondents felt uncomfortable reporting the lab director salary. Every respondent independently brought up the fact that the director salary is public information. The two consultants strongly agreed that reporting lab director salary should not be an issue for labs. One said its absence would be a “hole in the survey.”

*Turnaround Time*

Every interviewed respondent felt the items asking about the current average turnaround time for requests (D8-D16h, measured in full days) were extremely important for the field. Respondents said that this information could be used to make funding decisions or to request new funding or positions (by comparing their lab’s turnaround to the national rate). Labs said this metric was important internally to compare themselves to other labs in multi-lab systems, or to compare their turnaround time to their reported turnaround time in previous years. Most respondents did not find this to be a burdensome question, because they were able to calculate this with their LIMS. However, labs tended to calculate the turnaround time with whatever entry and end stage their LIMS used (i.e., they did not necessarily use the definition reported in the help text). Example entry stages used were (a) evidence submitted to lab, (b) evidence submitted to section, (c) request made, and (d) assignment made. The pretest labs used report complete as the end state. The census instrument used the definition of turnaround time as time of evidence assignment to report generation. One pretest respondent was also concerned about the fact that some analyses take substantially greater time than others (e.g., trace may need to test for 5 substances for one sample and 2 substances for another). Since the item is defined as “average” turnaround time, these differences should average out. However, the research team did notice that the current definition of “turnaround time” does not include a period duration for which to average turnaround time across.

Project consultants differed in their opinions. One of the consultants felt it was important to keep this item in the census, while the other consultant thought it should be dropped because it will vary among analysts and with case submission rates, which are not constant throughout the year.

*Performance Expectations*

Pretest respondents had more mixed opinions on the utility of item F7, asking about performance expectations (expected # requests completed by one FTE examiner per year) for each discipline. Two-thirds thought this information was helpful, while one third were unsure whether it was important. Most respondents did not think this was burdensome to complete. There was concern, however, that this item does not take into consideration the



fact that some analysts have competing responsibilities (e.g., training) and are not expected to perform casework full-time. Therefore, expectations will vary across all staffing levels.

One of the consultants was also concerned with this issue and said that, in particular, entry-level staff would have higher caseload expectations than more senior staff who are more involved with training and supervision. The other consultant said this information is critical to laboratory managers. From the interviews, it was clear that some labs have this outlined in policy, while other labs did not have formal, established expectations. One respondent recommended that it would be more helpful to know actual performance of examiners rather than the performance expectations. Those that thought this was an important question said it would be helpful to see what other labs expect of their staff.

### **Additional Observations and Survey Issues**

In addition to the questions asked of all pretest respondents above, some individual-level concerns and problems arose. These are listed below:

#### *Toxicology Subcategories*

One lab checked all categories for item A9b, because analysts will do BAC only if a high enough BAC is found and then will continue to conduct drug analyses only if the BAC was under a certain limit. This confusion should be alleviated by the previously proposed change to make this item a check-all and modify the wording.

#### *Staffing*

Multiple labs misinterpreted item C2 to mean the number of positions that were funded but not filled (rather than the intended meaning which was overall number of positions that were funded regardless of whether they were filled). One lab also requested additional clarification on where to include lab staff, such as document examiners, latent print examiners, and crime scene specialists.

#### *Budget*

One lab had a large discrepancy between the reported budget (B1) and the sum of budget categories (B2). In the follow-up interview, the lab reported this was due mainly to a large contract for a building lease (and also somewhat to additional operational costs). Two other labs reported \$0 for personnel budgeted amounts, because this cost does not come out of the lab's personal budget (one lab's personnel costs were paid by the state while the other lab's personnel costs were paid by headquarters).

#### *Workload*

A small number of labs had difficulty reporting the forensic biology workload sections when completing the census. One lab did not include convicted offender (D19) and arrestee

(D20) workload statistics in the overall Forensic Biology category (D16), because two separate divisions completed these independently (one section did all casework samples while the other did all convicted/arrestee samples). Another lab could not separate out sexual assault evidence within their LIMS, so they used multiple LIMS queries to come to their best estimate of sexual assault evidence requests.

One lab said it would be easier to complete the census if the workload items were identical across disciplines. Another lab reported they were unable to separate out trace workload from impressions workload statistics (in this lab, these two disciplines are within the same division).

### *Outsourcing*

One lab was unsure whether to put “0” or “NA” for a discipline they have in the lab but which does not outsource. Although the Help Text has instructions on when to use each response option, this pretest respondent did not use the Help Text and, consequently, completed this incorrectly.

## **RECOMMENDATIONS**

The following recommendations are made based on findings from the pretest survey administration, post-administration interviews with respondents, and discussions with the team’s forensic consultants. The research team looks forward to discussing the pretest results and the following UI recommendations in the near future in order to make final decisions on survey revisions.

1. Include additional instruction at the beginning of the census form for respondents to make a copy of their completed census form for their records and to make comments in the Feedback section if they are unable to complete a response according to the directions provided.
  - a. *Conclusion: BJS and UI agree to adopt recommendation 1.*
2. Remove A6 (year lab established) and A8 (have there been any major modifications or improvements in your facility since 2005) as planned, but include A7 (year facility constructed) to help capture part of the phenomenon of lab upgrades.
  - a. *Conclusion: BJS and UI agree to adopt recommendation 2.*
3. In items D3 and D4 (asking about the number of cases the laboratory received in 2009 and the number of cases backlogged on 1/1/2010, respectively), report the number of requests rather than the number of cases. While this still will not capture the number of evidence items being analyzed, it will approximate this definition more closely than the number of cases. BJS should note that if this change is made,

direct comparisons to previous survey waves will not be possible for these items. Cautions about the interpretation of how request is defined (including the fact that this does not directly correlate to the number of items) should be included in publicly available data and reports. Census Help Text should also provide instruction for how to handle cases received/sent to other labs in multi-laboratory systems. For future administrations of the census, BJS may want to use laboratory contacts to learn whether or not it would be *appropriate* and/or feasible for labs to track workload statistics by item (as opposed to requests or cases).

*a. Conclusion: UI and BJS agree to change the unit in D3 and D4 from 'case' to 'request.'*

4. Do not remove item C4-C6a (director salary range), because no pretest sites reported discomfort with this question. If removed, audiences may question why this information is not provided.

*a. Conclusion: UI and BJS agree to include 'Director' as a salary category.*

5. Engage in more discussion over the benefits and drawbacks of including turnaround time (items D8-D16h). On the one hand, labs believe this is a very important measure. On the other hand, labs did not necessarily use the listed definition. If this item remains, the definition should be included in the actual item (as opposed to only being listed in the glossary and Help Text). One option is to keep the item, but include an additional question that asks what start and end stages are being used for the calculations. In addition, there should be additional guidance on what time period to use for averaging. We suggest using the year-long period of 2009, but additional research may be needed to determine if this is a feasible request to make of labs.

*a. Conclusion: UI and BJS agree to remove D8-D17 part h. due to difficulty in ensuring consistent reporting and scope of the data collection.*

6. Revisit the importance of including performance expectations (item F7). While this has been included in past versions, pretest respondents had mixed opinions on the value of this question. Burden was reported to be low, but some labs have formal expectations whereas other labs have no performance expectations as a part of policy and may estimate these or calculate based on actual performance. Furthermore, performance expectations would vary across different examiners depending on responsibilities other than casework. An alternative approach to this question might be to ask whether the labs have formalized performance expectations.

- a. Conclusion: UI and BJS agree to drop the item requesting performance expectations and replace this item with a Y/N item asking if the lab has performance expectations for any discipline.*
7. Change item A9b to be a check-all of the following categories: (1) Antemortem BAC, (2) Antemortem BAC and Drugs, and (3) Postmortem.
- a. Conclusion: UI and BJS agree to adopt recommendation 7.*
8. Change the wording in item C2 from “FTE positions were funded (but not necessarily filled) at your laboratory” to “FTE positions were funded (may or may not be filled) at your laboratory.”
- a. Conclusion: UI and BJS agree to adopt recommendation 8.*
9. Provide additional examples in help text to clarify where respondents should categorize examiners such as document examiners, latent print examiners, and crime scene specialists. The Urban Institute will work with BJS and the project’s forensic consultants to determine where these employees are most appropriately placed.
- a. Conclusion: UI and BJS agree to adopt recommendation 9.*
10. BJS and the Urban Institute should revisit the budget categories and make determinations for when a respondent will be called back to clarify discrepancies in the listed budget and the sum of the budget categories. Since not all budget categories are included in item B2, it is expected that there will always be at least some small discrepancy. However, rules need to be set for if, and at what point, a respondent is called for further clarification for larger discrepancies. BJS and UI also need to discuss how to handle situations where large budget portions are paid by agencies outside of the individual lab. Because it is unknown what is included in the listed budget, it may be beneficial to consider adding a checkbox where respondents can state what categories are included in the budget. An example of how this was done for the BJS Census of State Court Prosecutors is below:

**B2. Does the budget amount entered at B1 include funding for the following budget categories?**

- | Yes                      | No                       |                                     |
|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <b>a.</b> Staff salaries            |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>b.</b> Expert services           |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>c.</b> Investigator services     |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>d.</b> Interpreter services      |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>e.</b> Child support enforcement |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>f.</b> DNA testing               |
| <input type="checkbox"/> | <input type="checkbox"/> | <b>g.</b> Staff training            |

- a. *Conclusion: B2 and B3 have been altered to clarify budget categories.*
11. Include instructions within the item on when to use “0” or “NA” for item E3 on outsourcing.
- a. *Conclusion: UI and BJS agree to add instructions to question E3.*
12. Add explicit instruction on items with multiple “Yes/No” responses that respondents need to check the “No” box and not leave it blank. In addition, BJS and UI should discuss how to handle blank responses on Yes/No items where “Yes” is endorsed but no “No” responses are endorsed- instead they are left blank. Options are to:
- a. Follow-up on all missing items where “Yes” is endorsed and all other parts of item are left blank;
- b. Change item to check-all (this has theoretical problems in that there is no way to determine whether something is left blank intentionally or is a “No” response; or
- c. Only follow-up with respondents if at least one “No” is endorsed but other parts of the item are left blank.
- d. *Conclusion: UI and BJS agree to adopt option a. of recommendation 12.*
13. BJS and the Urban Institute need to engage in discussions to come to a decision on when to encourage or discourage estimations, if an exact number is unable to be provided by the lab (e.g., they do not have an existing mechanism to calculate a statistic, a discipline’s statistics cannot be divided from another discipline, it would be too burdensome to determine, etc.). While estimating will likely not be encouraged on the instrument, BJS needs to provide guidance to UI on how to handle individual situations when following up with labs on incomplete items. Census instructions currently guide labs to contact the help line if they are unable to provide exact counts.
- a. *Conclusion: UI and BJS agree to accept no estimations and re-evaluate decision when collection period is nearing completion.*