The 2020 AST Education Needs Assessment Survey was distributed to all AST members from February 6 to March 6, 2020. The survey included a topical specialty section based on each of AST’s Communities of Practice (COP).

123 participants began the “Diagnostics/Pathology” specialty section and 116 completed the section. A breakdown of the information gathered from these participants is provided in this report.

I. “Diagnostics/Pathology” Specialty Section Participants

Role of Participants:

Participants were asked, “Which best describes you? (please choose one).” Based on the 123 participants who started the TxDx COP specialty section, the chart below outlines the roles that were represented (results from all participants in the survey are provided for comparison).

<table>
<thead>
<tr>
<th>Role</th>
<th>Specialty Participants</th>
<th>Overall Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician/Primarily Research</td>
<td>11 (9.0%)</td>
<td>65 (8.7%)</td>
</tr>
<tr>
<td>Physician/Primarily Clinical</td>
<td>59 (48.0%)</td>
<td>316 (42.4%)</td>
</tr>
<tr>
<td>Surgeon/Primarily Research</td>
<td>4 (3.3%)</td>
<td>12 (1.6%)</td>
</tr>
<tr>
<td>Surgeon/Primarily Clinical</td>
<td>5 (4.1%)</td>
<td>45 (6.0%)</td>
</tr>
<tr>
<td>Administrator</td>
<td>2 (1.6%)</td>
<td>34 (4.6%)</td>
</tr>
<tr>
<td>Advanced Practice Provider</td>
<td>13 (10.6%)</td>
<td>43 (5.8%)</td>
</tr>
<tr>
<td>Histocompatibility Specialist</td>
<td>10 (8.1%)</td>
<td>23 (3.1%)</td>
</tr>
<tr>
<td>Nurse/Transplant Coordinator</td>
<td>2 (1.6%)</td>
<td>16 (2.1%)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>5 (4.1%)</td>
<td>104 (14.0%)</td>
</tr>
<tr>
<td>Psychologist/Psychiatrist</td>
<td>0</td>
<td>12 (1.6%)</td>
</tr>
<tr>
<td>Social Worker</td>
<td>1 (0.8%)</td>
<td>19 (2.6%)</td>
</tr>
<tr>
<td>Researcher/Scientist</td>
<td>7 (5.7%)</td>
<td>37 (5.0%)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (3.3%)</td>
<td>19 (2.6%)</td>
</tr>
</tbody>
</table>
Affiliation of Participants:

Participants were asked what is their “Affiliation (please choose one.)” Based on the 123 participants who started the TxDx COP specialty section, the chart below outlines the affiliations that were represented (results from all participants in the survey are provided for comparison).

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Specialty Participants</th>
<th>Overall Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>74 (60.2%)</td>
<td>427 (57.3%)</td>
</tr>
<tr>
<td>Government or Military</td>
<td>1 (0.8%)</td>
<td>9 (1.2%)</td>
</tr>
<tr>
<td>Hospital</td>
<td>37 (30.1%)</td>
<td>256 (34.4%)</td>
</tr>
<tr>
<td>Industry</td>
<td>3 (2.4%)</td>
<td>16 (2.1%)</td>
</tr>
<tr>
<td>Organ Procurement Organization</td>
<td>3 (2.4%)</td>
<td>15 (2.0%)</td>
</tr>
<tr>
<td>Stand-alone Private Practice</td>
<td>3 (2.4%)</td>
<td>13 (1.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (1.6%)</td>
<td>9 (1.2%)</td>
</tr>
</tbody>
</table>

Experience Level of Participants:

Participants were asked to “Please enter your level of experience/years in practice.” Based on the 123 participants who started the TxDx COP specialty section, the chart below outlines the levels of experience that were represented (results from all participants in the survey are provided for comparison).

<table>
<thead>
<tr>
<th>Level of Experience</th>
<th>Specialty Participants</th>
<th>Overall Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not yet in training</td>
<td>0</td>
<td>5 (0.7%)</td>
</tr>
<tr>
<td>In training (resident)</td>
<td>2 (1.6%)</td>
<td>16 (2.1%)</td>
</tr>
<tr>
<td>In training (fellow)</td>
<td>7 (5.7%)</td>
<td>46 (6.2%)</td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>34 (27.7%)</td>
<td>182 (24.4%)</td>
</tr>
<tr>
<td>6-10 years</td>
<td>23 (18.7%)</td>
<td>147 (19.7%)</td>
</tr>
<tr>
<td>11-15 years</td>
<td>20 (16.3%)</td>
<td>123 (16.5%)</td>
</tr>
<tr>
<td>16-20 years</td>
<td>11 (8.9%)</td>
<td>81 (10.9%)</td>
</tr>
<tr>
<td>21+ years</td>
<td>26 (21.1%)</td>
<td>145 (19.7%)</td>
</tr>
</tbody>
</table>
II. TxDx COP’s “Diagnostics/Pathology” Specialty Section Data

A list of important and timely topics was created for the 2020 Needs Assessment Survey specialty sections by TxDx COP Leadership and the AST Education Committee. Participants were asked to “Rate each educational topic’s importance to you” as either 1) “Not interested,” 2) “Interested but have sufficient knowledge” or 3) “Interested & want/need to learn more.”

Here are the results from the 116 participants who completed this specialty section.

TxDx COP Specialty Topics – Overall Ranking: The topic list has been ranked below based on a weighted mean score of up to 3.0, with “Interested & want/need to learn more” weighted highest, “Interested but have sufficient knowledge” weighted next highest, and “Not interested” weighted lowest (out of 116 results).

1. The ensemble of diagnostic tests / cross-disciplinary expertise used to guide transplant care: 2.77
2. Biomarkers for diagnosing allograft dysfunction (i.e. Donor-Derived Cell-Free DNA): 2.71
3. Diagnosis of viral infections after solid organ transplantation: 2.61
4. (Tied) Molecular transcripts as a diagnostic tool in allograft biopsies: 2.6
   (Tied) An update on current concepts in donor specific antibody testing: 2.6
5. Clinical relevance of Non-HLA antibodies: 2.54
6. Antibody-mediated rejection in non-renal transplants: 2.47
7. Changing spectrum of polyomavirus BK infection in the era of routine screening: 2.41
8. Interpretation of therapeutic drug monitoring results: analytical variability and therapeutic ranges: 2.41
9. Borderline Change and Chronic T cell mediated rejection in renal allografts: 2.29

TxDx COP Specialty Topics – “Interested and want/need to learn more” Only: The topic list has been ranked below based exclusively on the number of “Interested and want/need to learn more” results (out of 116 results).

1. The ensemble of diagnostic tests / cross-disciplinary expertise used to guide transplant care: 95
2. Biomarkers for diagnosing allograft dysfunction (i.e. Donor-Derived Cell-Free DNA): 90
3. Molecular transcripts as a diagnostic tool in allograft biopsies: 87
4. An update on current concepts in donor specific antibody testing: 84
5. Clinical relevance of Non-HLA antibodies: 83
6. Diagnosis of viral infections after solid organ transplantation: 80
7. Antibody-mediated rejection in non-renal transplants: 78
8. Changing spectrum of polyomavirus BK infection in the era of routine screening: 72
9. Interpretation of therapeutic drug monitoring results: analytical variability and therapeutic ranges: 68
10. Borderline Change and Chronic T cell mediated rejection in renal allografts: 66
**TxDx COP Specialty Topics – “Not interested” Only:** The following topics received the highest number of “Not interested” results (out of 116 results).

- Borderline Change and Chronic T cell mediated rejection in renal allografts: 32
- Changing spectrum of polyomavirus BK infection in the era of routine screening: 26
- Antibody-mediated rejection in non-renal transplants: 24
- Clinical relevance of Non-HLA antibodies: 20
- Interpretation of therapeutic drug monitoring results: analytical variability and therapeutic ranges: 20

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Please see the pie charts on the following pages for a topic-by-topic breakdown of participant interest in each topic.

If you have follow-up questions, or would like additional details on a result, please contact the AST Education Program Manager, Brian Valeria ([bvaleria@myast.org](mailto:bvaleria@myast.org)) for more information.
**Interpretation of therapeutic drug monitoring results: analytical variability and therapeutic ranges**

- Not interested, 17.24%
- Interested but have sufficient knowledge, 24.14%
- Interested & want/need to learn more, 58.62%

**Antibody-mediated rejection in non-renal transplants**

- Not interested, 20.69%
- Interested but have sufficient knowledge, 12.07%
- Interested & want/need to learn more, 67.24%
Diagnosis of viral infections after solid organ transplantation

- Not interested, 7.76%
- Interested but have sufficient knowledge, 23.28%
- Interested & want/need to learn more, 68.97%

Borderline Change and Chronic T cell mediated rejection in renal allografts

- Not interested, 27.59%
- Interested but have sufficient knowledge, 15.52%
- Interested & want/need to learn more, 56.90%
Changing spectrum of polyomavirus BK infection in the era of routine screening

- Not interested, 22.41%
- Interested but have sufficient knowledge, 15.52%
- Interested & want/need to learn more, 62.07%

Molecular transcripts as a diagnostic tool in allograft biopsies

- Not interested, 14.66%
- Interested but have sufficient knowledge, 10.34%
- Interested & want/need to learn more, 75.00%
An update on current concepts in donor specific antibody testing

- Not interested, 12.07%
- Interested but have sufficient knowledge, 15.52%
- Interested & want/need to learn more, 72.41%

The ensemble of diagnostic tests / cross-disciplinary expertise used to guide transplant care

- Not interested, 5.17%
- Interested but have sufficient knowledge, 12.93%
- Interested & want/need to learn more, 81.90%
Biomarkers for diagnosing allograft dysfunction (i.e. Donor-Derived Cell-Free DNA)

Not interested, 6.90%
Interested but have sufficient knowledge, 15.52%
Interested & want/need to learn more, 77.59%

Clinical relevance of Non-HLA antibodies

Not interested, 17.24%
Interested but have sufficient knowledge, 11.21%
Interested & want/need to learn more, 71.55%