Tracking COVID-19 Testing Technology

Widespread availability of accurate and efficient diagnostic testing has been cited as a key requirement to getting the COVID-19 pandemic under control and our lives back to normal. To meet that need researchers are racing to optimize testing technology for scalable, rapid testing that meets the unique requirements of personal, clinical and institutional settings.

### Home collection

**Key characteristics and benefits:**
- Ease of use
- Convenient
- Minimal exposure to others
- Durable

**Leading Assay Technologies in Use:**

<table>
<thead>
<tr>
<th>Virus detection</th>
<th>Antibody detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT-PCR</td>
<td>None currently available</td>
</tr>
</tbody>
</table>

### Pharmacies & Doctor’s Offices

**Key characteristics and benefits:**
- Samples collected by skilled staff
- Professional advice available
- Limited exposure to others

**Leading Assay Technologies in Use:**

<table>
<thead>
<tr>
<th>Virus detection</th>
<th>Antigen detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT-PCR</td>
<td>Lateral flow immunoassay</td>
</tr>
</tbody>
</table>

### Hospitals and Health Departments

**Key characteristics and benefits:**
- Analysis of multiple sample types
- Samples collected by skilled staff
- Highest quality equipment
- Greater reliability
- High throughput

**Leading Assay Technologies in Use:**

<table>
<thead>
<tr>
<th>Virus detection</th>
<th>Antibody detection</th>
<th>Antigen detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT-PCR</td>
<td>ELISA, Isothermal</td>
<td>Lateral flow immunoassay</td>
</tr>
<tr>
<td></td>
<td>amplification, CRISPR</td>
<td>Chemiluminescent immunoassay</td>
</tr>
</tbody>
</table>

Virus and antibody tests listed are those approved by the FDA as of 5/4/20.

Source: ACS Cent. Sci. 2020, 6, 5, 591-605 (https://doi.org/10.1021/acscentsci.0c00501)