Landscape and Evolution of the Cell & Gene Therapy Marketplace: Public Policy Considerations

Janet Lambert, CEO, Alliance for Regenerative Medicine
About ARM

• **International advocacy organization**
  • Dedicated to realizing the promise of safe and effective regenerative medicines for patients around the world
  • Cell and gene therapy, tissue engineering

• **350+ members**
  • Small and large companies, non-profit research institutions, patient organizations, and other sector stakeholders
  • Across 25 countries

• **Priorities:**
  • Clear, predictable, and harmonized regulatory pathways
  • Enabling market access and value-based reimbursement policies
  • Addressing industrialization and manufacturing hurdles
  • Analysis, communication, and education
  • Facilitating sustainable access to capital
ARM Members Active in IO Include:

- Adaptimmune Tx
- Adicet Bio
- Artiva BioTx
- Astellas Pharma
- Atara BioTx
- Autolus Tx
- Bellicum Pharma
- bluebird bio
- Cabaletta
- Carisma Tx
- Cartherics
- Celgene / BMS
- Cell Medica
- Cellect Bio
- CBMG
- CRISPR Tx
- Editas
- ElevateBio
- ExCellThera
- Fate Tx
- Gamida Cell Tx
- GammaDelta Tx
- Genprex
- GSK
- Intellia Tx
- Iovance BioTx
- Janssen (J&J)
- Kite / Gilead
- Legend Bio
- Magenta Tx
- MaxCyte
- Minerva Bio
- MolMed
- Mustang Bio
- NexImmune
- Nkarta
- Novartis
- Novartis
- OncoSenX
- Oxford BioMedica
- PDC*line Pharma
- Pfizer
- Poseida Tx
- Precigen
- Precision Bio
- Sangamo Tx
- Takeda
- T-knife
- Tessa Tx
- Tmunity Tx
- Unum Tx
- WindMIL Tx
- Zelluna
- Immunotherapy
- Ziopharm
- Oncology

**CAR-T, TCR, NK Cell, TILs/MILs, Gamma Delta, and More**
Background

Cell, gene, and immunotherapies represent the future of treating and curing disease.

- These technologies can significantly disrupt the way physicians treat patients.

- The manufacturing, distribution, and patient access experience is significantly different from many of the current processes and models.

- Many government reimbursement methodologies are ill equipped to support appropriate access to these therapies and adequately reimburse manufacturers for providing them.
Modernizing Current Reimbursement Methodologies

✱ ARM supports market access policies that are patient-focused while also stimulating and rewarding innovation.
   
   ○ This is complicated by the current political and policy environment in Washington.

✱ Most IO therapies are accessed in the inpatient setting.

✱ Some therapies are administered in the outpatient setting (mainly clinical trials); a trend toward outpatient delivery is anticipated.

✱ The combination of the current environment and site of care presents different challenges and opportunities.
Key Policy Issues Facing ARM Members in 2020

**Inpatient Setting**

- Providing equal access to CAR-T therapies.
  - Current add-on payment set to expire later in 2020.
  - ARM working on new bundled payment for providing CAR-T.

**Outpatient Setting**

- Create a Value Based Contracting process.
- Protect market-based pricing, oppose government price controls and/or the “importation” of a foreign price.
New Analysis of 10 Year Cost Impact of Cell & Gene Therapy

• A Transformative Therapy Value Model (TVM): a refined model developed to evaluate long-term value of regenerative medicines.

• Employs 10-year timeframe used by US Congressional Budget Office.

• Sickle cell disease, hemophilia A, and multiple myeloma are case studies.

• Conclusion: cell and gene therapies could provide cost savings of 18-30% over a 10-year period in these indications.

Released January 10, 2019 and available at www.alliancerm.org
Global Regulatory Issues

Maintaining an effective regulatory framework

- In the US – Hundreds of unregulated stem cell clinics; strong FDA regulatory enforcement needed; regulation of novel and platform technologies.

- In Europe – Growing use of Hospital Exemption for commercial purposes; need to limit use of HE to research setting.

Refining guidance for CGTs

- CMC issues at play much earlier in the development process than with conventional therapies.


- CAR-T specific guidance expected in 2020.

Harmonization Across Major Markets
CGTs encompass a wide spectrum of products, each with their own concerns.

Common Concerns:
- Mechanism of action, material qualification, challenges establishing specifications,
- manufacturing facility, product shipping/handling, major manufacturing changes.

Specific Concerns:
- Product tracking and segregation
- High product variability (collection)
- Limited material or time for testing
- Short shelf life
- Manufacturing logistics
- Scale-out

- Donor eligibility
- Qualification of cell banks
- Reproducibility of replacement bank
- Stability of cell banks and intermediates
- Scale up
## Areas of Significant Difference

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<thead>
<tr>
<th>Areas of Significant Difference</th>
<th>Impact</th>
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<tbody>
<tr>
<td>1. Timing and extent of GMP implementation</td>
<td>Stage specific GMP program designed for US may not meet EU requirements</td>
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<td>2. In the EU, a Potency Assay with Acceptance Criteria is required for Ph1/FIH trials</td>
<td>Delay to start of ph. 1 clinical trial in EU vs. US</td>
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<td>3. In the EU, a Qualified Person must ensure GMP compliance and authorizes FP release</td>
<td>US sponsors must hire a QP. Logistical issues</td>
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<td>4. US Cleanroom Air Classification Standards differ from European Guidelines</td>
<td>EU requirement for Grade B vs. ISO 7 “background” disqualifies many US facilities</td>
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<td>5. In the US, testing laboratories must be CLIA certified</td>
<td>Allogeneic cell line derived in EU not usable in US</td>
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<tr>
<td>6. Disease-specific donor testing requirements are not harmonized</td>
<td>Allogeneic cell lines</td>
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Source: IQVIA/ARM EU-US Regulatory Analysis Copyright © 2019 IQVIA.