

NEW DIGS

FoCUS

Financing and Reimbursement
of Cures in the US

RESEARCH BRIEF

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Precision Financing challenges for solid tumor adoptive T-cell therapies. Durable gene and cell therapies represent a unique challenge to the US healthcare insurer/payer landscape, given the one-time treatment and associated high upfront cost but potentially durable outcomes. Previous research briefs^{1,2} and a white paper³ have addressed financing and other challenges relating specifically to chimeric antigen receptor T (CAR-T) cell therapies.

Adoptive T-cell therapy (ACT) is the expansion of a patient's T lymphocytes to enhance anti-tumor activity; CAR-T and TCR are both types of ACT. While CAR-Ts use a similar technology for hematologic cancers, T-cell receptor (TCR) therapies target more specific antigen and HLA combinations such as NY-ESO-1 with HAL-A*0201⁴. This new precision medicine approach for cell therapies uses companion diagnostics to offer more personalized approaches towards targeting solid tumors.

A previous research brief⁵ specifically considered clinical trials and investment trends and showed that investment in TCR therapies, while lower than those in CAR-Ts, have continued to increase over time.

TCR THERAPIES PRESENT A FINANCING CHALLENGE FOR THE NEAR FUTURE

FoCUS projections of the clinical trial pipeline show fewer likely product launches in solid tumors relative to hematological; however, TCR therapies in solid tumors could have a significant impact on the US healthcare system in a different way to CAR-T therapies, and at a greater scale. The scale effect is because the patient population size, both incident and prevalent, is much greater across all solid tumors.

At the same time, though, target mutations will limit the treated patient population size – or parse patient populations across multiple

KEY TAKEAWAYS

TCR therapies promise immunotherapy power with precision medicine targeting for solid tumors.

If TCR therapies achieve organ-agnostic labels or allogeneic breakthroughs large patient populations could benefit. Over time, they should also move into earlier line of therapy with larger treatable population sizes.

Such expansion beyond first-generation initial targeted populations pose provider capacity expansion financing issues as well as classic durable therapy financing challenges:

- Community providers capacity and skill expansion
- Payers need tools to mitigate performance risk
- Risk sharing amongst payers, providers, and developers for failed manufacturing, product risk vs healthcare network risk
- Long-term performance tracking

therapies, if launched. Early launches are likely to be autologous products, which will see more limited uptake and be performed in Centers of Excellence. Pipeline projections suggest low likelihoods of CD19 or BCMA products launching before 2023, and

allogeneic products even later; these will lead most to spread to community-based providers and higher uptake.

TCR therapies can – potentially – be administered in a community setting, rather than a hospital setting, and this presents structural differences in financing and access for all stakeholders: patients, providers, payers, and developers. Outcomes-based contracting may involve providers more, or providers of a different type, potentially meaning expansion of centers of excellence and associated changes to certification, billing, and contracting.

The learnings presented in this research brief were developed over two MIT Design Labs, in October 2018 and April 2019. They were based on a case study for non-small cell lung cancer (NSCLC); no specific product was used, although several anti-NY-ESO-1, anti-MAGE, and anti-WT1 TCR therapies are in development for this indication.

GENERAL CHALLENGES

One point of focus for TCR therapies is success of tumor-agnostic and/or allogeneic products. Like CAR-T therapies, TCR therapies are also expected to be used first in later lines of therapy, then move up. Over time, two dimensions of challenges could emerge:

1. Vertically to earlier lines of therapy/disease stages over time leading to increases in
 - a. The size of the eligible patient population
 - b. Total spend on treatment
 - c. TCR manufacturing and administration service specifications/capacity increases needed
2. Horizontally expanding the sites of administration to include outpatient and community centers, which will
 - a. Increase the size of the eligible patient population and/or uptake
 - b. Expand treatment outside of the current service specification and financing paradigm compared to CAR-T
 - c. Create new challenges for providers (administration, billing, payment) and for development (manufacturing at a greater scale, logistics).

The financing challenges of the move to front-line therapy are not novel for TCR therapies; the challenges presented by the expansion in administration are the basis for this research brief.

At the April 2019 Design Lab, attendees identified summary challenges by key stakeholder. Not all of the challenges are direct financing challenges. For them to arise, the move to community treatment settings – with TCR therapies in NSCLC specifically, but also for cell therapies in solid tumors generally – would have to happen at scale. Our expectation is that no single therapy necessarily will catalyze this, but, over time, enough therapies in enough indications will.

KEY CHALLENGES

A paradigm shift in treatment is needed to move from an inpatient, centers-of-excellence treatment setting to a community outpatient setting. This shift would need further support by the medical community – for example, by changes to clinical guidelines and patient pathways. Payers' approach to centers and networks of excellence will need to expand to include community providers, and interoperability and patient-sharing challenges will need to be met.

Community providers could face certification challenges as a secondary outpatient care center, complexity with administration and billing, standardizing care across centers and addressing patient-sharing.

This will involve education as well as financial investment – about the therapy as well as about center of excellence qualification, certification, and billing.

Being a partner to long-term, performance-based reimbursement and outcomes management may also challenge these providers in different ways as they take on tracking data, collecting co-pays for visits, and more.

Investment in new infrastructure is needed for treatment delivery and follow-up care, particularly if a backlog, or surge, arises for TCR or other adoptive cell therapy. This is true across all providers and payers; existing centers of excellence are too few to handle the growth in demand.

Capacity breaches for community providers is among the biggest operational risks and finding financing to address those is amongst the greatest challenges.

Compared with existing, inpatient centers of excellence/specialist centers, outpatient centers will need to expand and upskill many of their staff, and invest in infrastructure to handle billing and coding, but also administration and capacity to treat.

The risks to providers, patients and payers of failed manufacturing processes must be addressed, particularly as community providers may be smaller, in which case the financial risks become greater if they pay upfront and absorb costs related to apheresis and conditioning, then management of the patient if the product is not available for reinfusion.

Clear identification and management are needed of product risk vs healthcare network risk, and provider risk-sharing, since outcomes could depend more on providers, in the near to medium term. For the payer these also include coverage of the same patients if they are returned to specialist inpatient care in the case of treatment failure or adverse events.

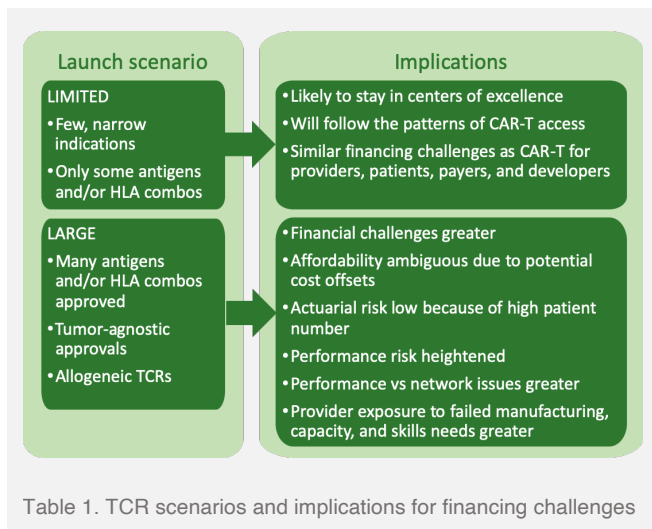
Outcomes-measurement and tracking is needed for longer-term outcomes, particularly non-survival outcomes, which would be needed for FDA post-approval tracking as well as for considering outcomes-based financing solutions.

There will need to be a scaled, systematic way of tracking and measuring outcomes, accounting for patient mobility between payers, but also settings of care, as inpatient and community specialist centers both are likely to be used.

WHAT DID WE LEARN?

A flow of challenges exists and depends upon the scenario arising with TCRs (see Table 1).

Overall, MIT Design Lab attendees agreed that milestone-based payments, performance-based annuities or a mixture of both approaches may be needed to handle the multiple financing challenges for a TCR treatment for NSCLC – and, by extension, other solid tumors. As outlined above, most issues were operational, and many were only different in this context because of scale.



Note that the issues outlined below reflect the perspectives of the people attending the MIT Design Lab and do not represent current or future policies of any given stakeholder.

- Transitioning to or incorporating treatment in community settings
 - Payers contract with a center of excellence for community services to provide incentives and structure for bringing community providers into networks
 - Payers authorize providers for all services at once – including combination therapies – to incentivize efficient treatment practices
 - Payers waive all patient-copays, particular if patients are out of network with community providers.
 - A federal mandate for real world evidence and registries to help ensure appropriate billing and coding
- Community providers
 - 'White bagging': payers provide upfront discounts or faster payment to mitigate financial risks from buy-and-bill
 - Payers provide higher payments/tariffs to offset costs to providers for training and capacity
 - Reimbursement for providers that mimics terms between payers and developers in case of manufacturing failures as well as treatment failures
 - Payers provide higher payments/tariffs for providing patients with paid travel and accommodation.

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ABOUT FOCUS

The MIT NEWDIGS consortium FoCUS Project (Financing and Reimbursement of Cures in the US) seeks to collaboratively address the need for new, innovative financing and reimbursement models for durable and potentially curable therapies that ensure patient access and sustainability for all stakeholders. Our mission is to deliver an understanding of financial challenges created by these therapies leading to system-wide, implementable precision financing models. This multi-stakeholder effort gathers developers, providers, regulators, patient advocacy groups, payers from all segments of the US healthcare system, and academics working in healthcare policy, financing, and reimbursement in this endeavor.

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