

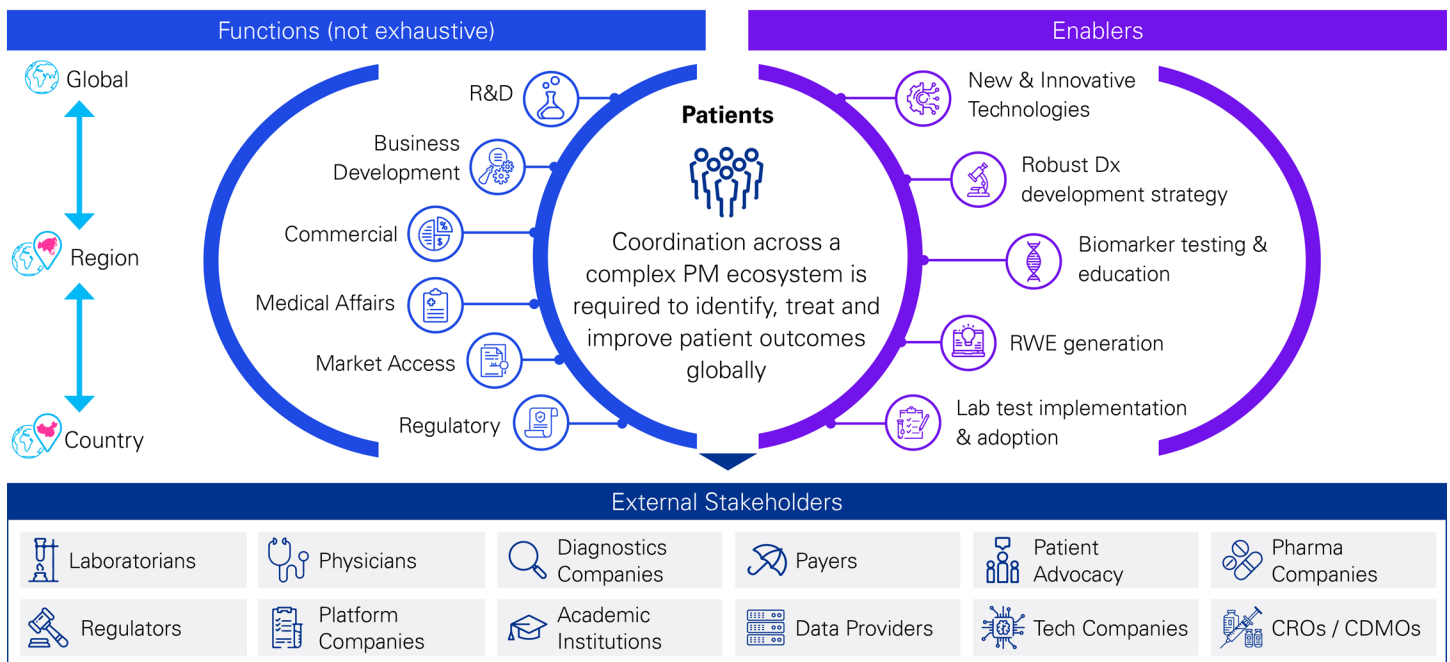


Precision Medicine

Navigating innovation in the new normal
Strategy | Deals | Operations

As the world emerges into a 'new normal' across life sciences due to the COVID-19 pandemic, we are entering a new phase of Precision Medicine (PM). Whether you are a medical institution developing personalized and holistic services for your patients in all therapeutic areas, a clinical laboratory restructuring to include in-house, near-patient, or kit-based offerings, or a pharmaceutical company trying to launch a new drug and diagnostic globally, the field of Precision Medicine has changed for everyone. In this 'new normal' our clients seek advisors who can provide deep scientific, technical and business insights at a local and global level. Part of the Healthcare and Life Sciences Strategy practice, the KPMG Precision Medicine strategy practice is a leader in this innovative area of medicine across all therapeutic areas, in markets around the world, with all relevant stakeholders, and fueled by experience across the value chain.

The Precision Medicine ecosystem continues to layer complexity

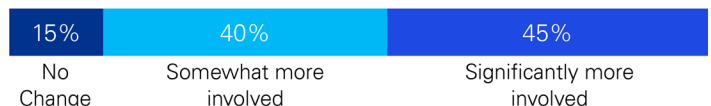


This is highlighted by survey results from our global KPMG Precision Medicine Insights database

To what extent do you believe cancer treatment algorithms will become more or less complex in 5 years vs. today (% respondents)?



Given this complexity, to what extent do you believe that biopharma needs to play a greater role over the next 5 years in educating the clinical care team about the use of diagnostic testing (% respondents)?



Sources: KPMG Precision Medicine Insights database

New technologies and innovations are changing the clinical care paradigm*



Liquid Biopsy

Long promised 'prime time' is here as companies continue to publish data on clinical validation and the market responds with significant M&A activity



Multi 'omics' Data

Advances are being made in understanding the role played by the genome, transcriptome, proteome, epigenome and metabolome in disease pathogenesis



Nucleic Acid Technologies

From 'one-and-done' gene therapies to mRNA, RNAi and ASOs, nucleic acid technologies are changing clinical outcomes across diseases, and could offer functional cures in some cases



Artificial Intelligence

Companies are using AI and machine learning to predict the likelihood of cancer, before the tumor is detectable using traditional screening methods



Tumor Agnostic Therapies

Identification of tumor agnostic biomarkers such as MSI and dMMR set to change the clinical care paradigm in oncology as therapies can be pan-tumor



Multi-Modal Diagnostics

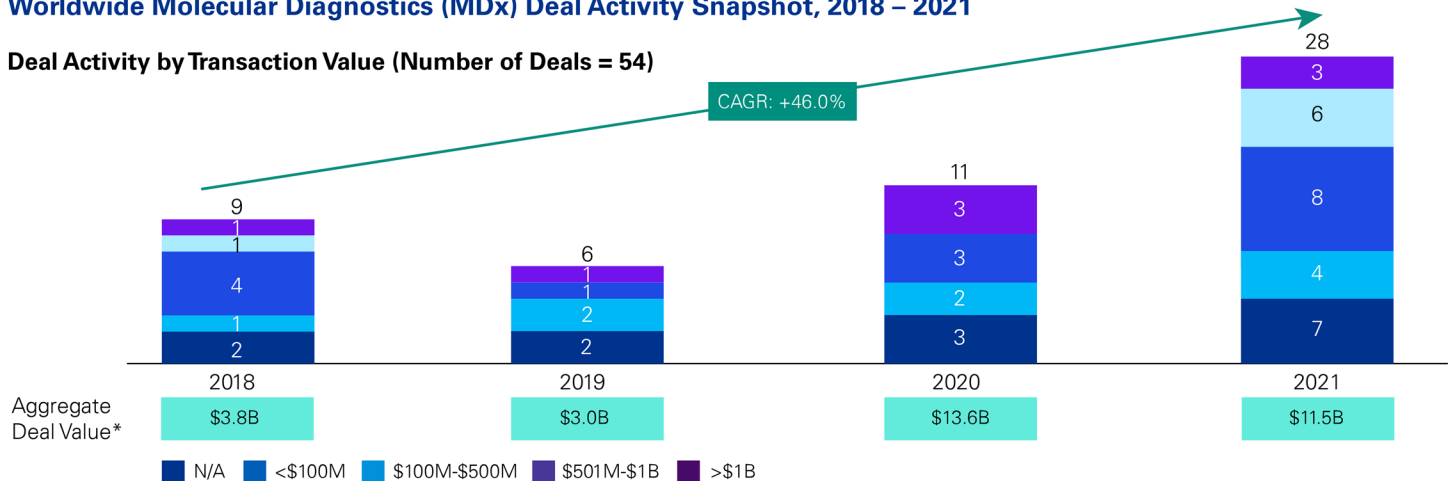
The complexity of the tumor microenvironment (TME) has led companies to develop multi-modal diagnostics that will enable HCPs to gain a holistic view of the TME and tailor treatment appropriately

*Examples only, not exhaustive

And this is fueling unprecedented deal activity across the PM ecosystem

Worldwide Molecular Diagnostics (MDx) Deal Activity Snapshot, 2018 – 2021

Deal Activity by Transaction Value (Number of Deals = 54)



*14 deals without publicly available transaction values were excluded for deal value aggregation

\$1B+ deals continued in 2021 along with an increase in \$501M-\$1B deals

2021 was a banner year for deal-making in molecular diagnostics, with a near tripling of volume vs. 2020

Liquid biopsy was a theme in several 2021 deals (e.g., Labcorp's play for PGDx for \$575M and NeoGenomics acquisition of Inivata for \$390M) as this market continues to heat up, driven by MRD applications and biopharma services demand



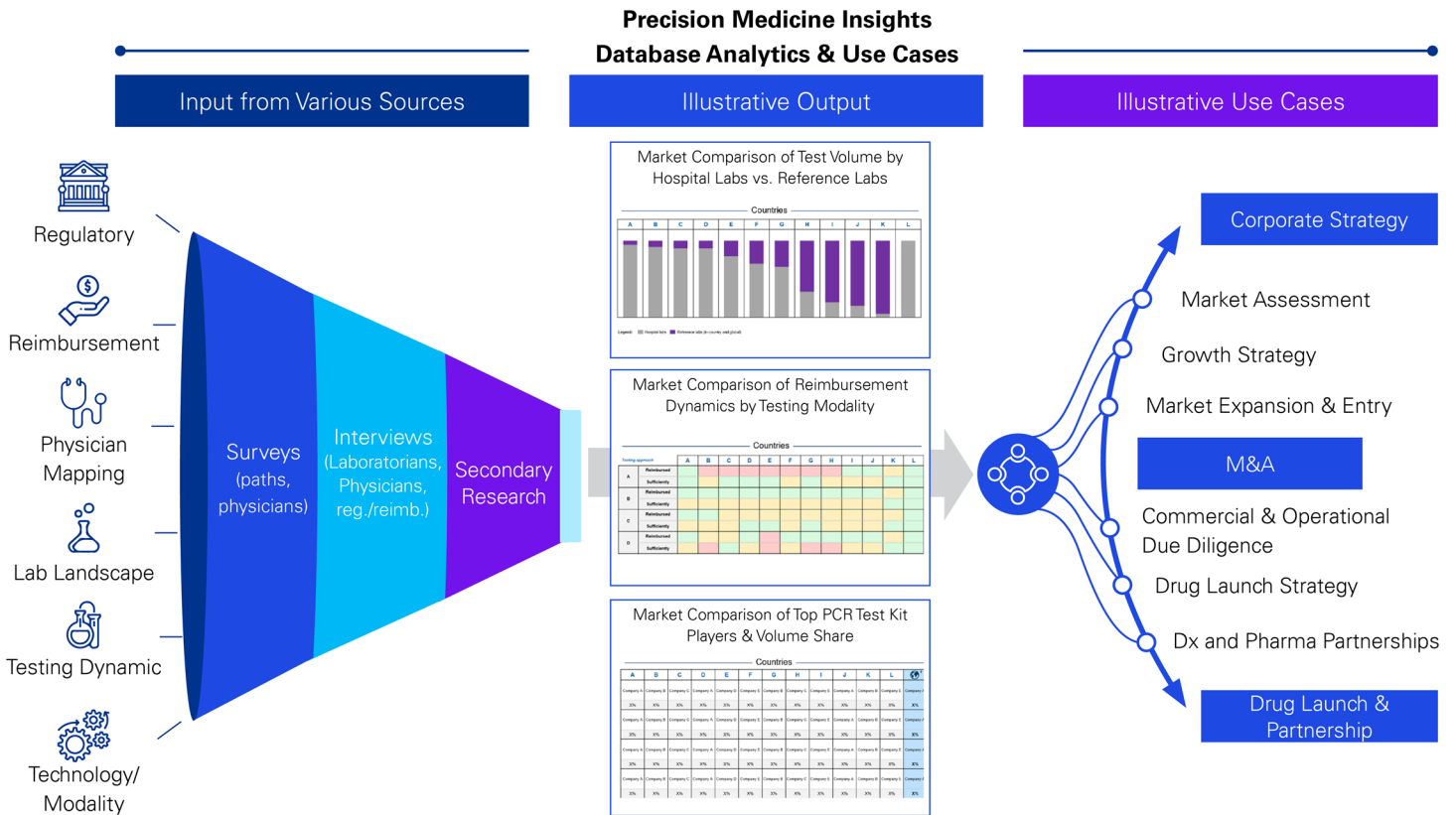
Although average deal size was down in 2021 vs. 2020, this was mostly driven by significant values in select deals in 2020, such as Illumina's acquisition of Grail (\$8B), Invitae's acquisition of ArcherDx (\$2.3B), and Exact's acquisition of Thrive Earlier Detection (\$2.2B)

2021 saw six deals in the \$501M-\$1B range vs. none in the prior two years, driven in many cases by COVID-19 testing cash – Thermo / Mesa, Veracyte / Decipher, Agilent / Resolution, Hologic / Mobidiag, Pacific Biosciences / Omniome, and Labcorp / PGDx

Sources: Informa

KPMG Precision Medicine Insights Database

The database is used as a supplement to KPMG Strategy's deals and projects in the precision medicine space, worldwide, and the sample set is designed to be easily expandable and re-queried for specific studies



Market Data on 13 Countries Around the World



Representative Datapoints (not exhaustive)

- Indication-specific biomarker testing rates
- Use of tumor-agnostic biomarker testing
- Testing modality adoption rates by indication
- Testing vs. positivity rates by indication
- Market perception of share by testing modality type, e.g., NGS, PCR, FISH, IHC
- Market perception of share by sample type (liquid vs. tissue)
- Market perception of share by key kits per indication
- Market perception of share by NGS installed base / sequencers
- Dx partner presence in each region and perceived share
- Setting of PM tests performed by modality and by type (hospital vs. commercial / reference labs)

Our Precision Medicine Offerings



Strategy

We help our clients solve their most complex strategic problems on a G-LOCAL level – global strategic focus and local level strategy and execution, leveraging our deep market knowledge, and powered by our proprietary KPMG Precision Medicine Insights database



Deals

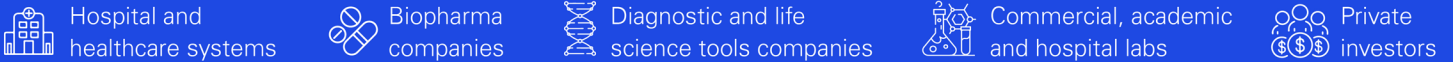
We support clients across the deal continuum, from front-end ideation and planning, to commercial, financial and operational due diligence, and through integration and separation. Our practice has been on the buy- and sell-side for many deals in the Precision Medicine ecosystem for both corporate and private investors



Operations

KPMG leverages a holistic approach, helping organizations design and align operating models with business strategy, positioning the mid- and back-office functions of Precision Medicine organizations for performance transformation and commercial success

Who we work with



Example Case Studies:



Strategy

Global market assessment of the current and future Precision Medicine landscape to optimize future launch strategies for a global biopharma client



Deals

Full service diligence and integration work for a leading diagnostics company on two separate Targets (one international) within 6 months



Operations

Setting up COVID-19 testing capabilities for one of the largest reference labs in the United States

Why KPMG?



We Have Extensive Experience

Our teams have worked with clients across the precision medicine ecosystem, which means we bring deep experience and the 'so what' to each project



We Work Across Client Types

We work across client types, from the smallest genomics companies to the largest biopharmas and across the PE continuum, meaning that we can provide our clients with tailored perspectives



We Bring Global Strength

KPMG has access to a network of local teams around the world who understand the specific nuances of their market. We are able to bring these valuable insights to bear, while working as a global team, to enable project success

Contact us



Kristin Pothier

Principal, Global and National Healthcare & Life Sciences Strategy Leader, Advisory
+1 617-549-2779
kpothier@kpmg.com



Alasdair Milton, Ph.D.

Managing Director, HCLS
Strategy, Advisory
+1 617-372-3453
alasdairmilton@kpmg.com



Varun Renjen, MD

Managing Director, HCLS
Strategy, Advisory
+1 973-467-9650
varunrenjen@kpmg.com



Puja Ghelani

Director, HCLS Strategy,
Advisory
+1 918-845-2389
pujaghelani@kpmg.com

kpmg.com/socialmedia



Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

© 2022 KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved.

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

DASD-2022-7254