The top four misconceptions about precision medicine

Precision medicine has progressed tremendously over the last decade due to next-generation sequencing (NGS), a new technique for higher throughput evaluation of genetic sequences. This advanced technology evaluates millions of DNA sequences simultaneously, versus the labor-intensive methods of the past where only a few DNA fragments were processed per chemical reaction.[1] This revolution in sequencing is already changing healthcare for many diseases, and bringing some important changes to the forefront of cancer care:

1. Molecular testing is too expensive.

Molecular testing is no longer cost prohibitive. Molecular testing used to cost thousands of dollars per gene, but new technologies that run hundreds to thousands of genes at the same time have brought down the cost of testing substantially. Expanded insurance coverage and financial assistance programs from commercial testing laboratories have put next-generation sequencing of tumor tissues within reach for most patients. If utilizing McKesson's biomarker guides, generally patients will not pay more than a few hundred dollars out of pocket, in addition to pathology charges, since McKesson requires approved molecular testing laboratories to offer strong financial assistance programs for patients. Furthermore, the evidence continues to grow showing benefit to targeted agents in cancer. The cost of ordering molecular testing is now minimal compared to the cost of therapy so the expense is in the drugs, and yet it is important to get the right drug for the patient.

2. It doesn't make any sense to test when precision medicine therapies don't exist for many gene mutations.

Having the full genetic profile of a patient's cancer enables immediate treatment when new therapies are discovered for their specific mutations. Currently there are only a few dozen FDA-approved treatment options for all mutation-driven diseases combined, but advancements are rapidly occurring in the field of translational medicine. Even though having information on hundreds of a patient's genes may not be useful today, it may provide an avenue to promising new therapies tomorrow. Other reasons to test are to look for rare mutations that do have known targeted agents and also to look for mutations that could be hereditary.

3. It's a waste of time to collect comprehensive biomarker data on patients when the data won't benefit my patient.

Collecting comprehensive biomarker data on patients drives clinical trials and development of new therapies. This testing enables researchers to gain a better understanding of the molecular biology of tumors and identify mutation signatures, laying the groundwork necessary for clinical trials and drug development that advance cancer care.

4. Precision medicine is too complex.

McKesson is committed to developing user-friendly decision support tools that enable physicians to quickly and efficiently order biomarker tests and access results — all at the point of care. Our innovative technology solutions put the necessary up-to-date information at the physician's fingertips, simplifying the order and result processes to empower better care:

- **Biomarker order guides**
  Comprehensive biomarker order guides are embedded in McKesson's industry-leading iKnowMed℠ Generation 2 electronic health record and are also available online for all McKesson customers. This critical decision support tool takes the guesswork out of this complex process by identifying which tests should be ordered for a specific disease, as well as presenting possible treatment options. Physicians are faced with determining which genes and tests are appropriate, causing many to rely on past experience, which is difficult as information constantly changes. The biomarker order guides are meticulously updated every month or whenever actionable information on new genes and drug discoveries becomes available.
- **Vetted biomarker testing labs**
  A comprehensive list of vetted labs is embedded in the biomarker order guides, eliminating the need for physicians to find their own reliable testing source. All labs on the list are evaluated by McKesson's biomarker committee, physicians who examine each lab to determine their sustainability, quality and breadth of testing, and financial assistance programs. This ensures trustworthy results from high-quality labs and saves physicians valuable time.

- **Auto-population capabilities**
  The addition of interactive auto-population capabilities is the newest enhancement to McKesson's biomarker order guides in iKnowMed Generation 2. Once the appropriate test is chosen, the correct lab vendor order forms are automatically populated with the patient's information, saving physicians and staff from manually entering information. IT connections to specific vendor labs are currently being built to directly feed test results back to iKnowMed Generation 2, making the discrete data and results report readily available, identifiable, and searchable.
- **The Molecular Tumor Board Pilot Initiative:**
  The pilot project for the Molecular Tumor Board is McKesson's newest educational opportunity to help physicians and staff stay current on changes in molecular oncology. Interpretation of test results is often difficult, due to a lack of standards in this fast-changing field. The Molecular Tumor Board optimizes the care team's ability to use tumor biomarker information and germline genetic test results to treat patients and their families. Molecular experts are brought in to discuss specific mutations and how testing can drive optimal treatments and preventative strategies. The Molecular Tumor Board is one of many resources that McKesson is developing to facilitate ongoing learning in molecular oncology.

Put the power and promise of precision medicine at your fingertips.
Contact McKesson today at biomarker@mckesson.com.

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5343844/

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