PERPETUAL CLINICAL TRIALS
Faster, more informative, best for the patient

Mika Newton, CEO

2019
For Advanced Cancer Patients, Getting the Best Care Is a Nightmare

No one knows the optimal way to treat any cancer, many patients can’t get or pay for the drugs and technologies they need and treatment outcomes vary widely.

Each year thousands die unnecessarily.
But we live in a very exciting time

Cheap “omics” and other diagnostic technologies enabling precision medicine

1000s of non-cancer drugs that could be repurposed

Clinical trial innovations: e.g., master protocols, RWE

100s of exciting new oncology drugs and immunotherapies with strong scientific rationales

AI, Machine Learning, and data analytics coming of age

Favorable regulatory environment
Traditional Development Is In Trouble

**CLINICAL TRIALS ARE UNSUSTAINABLE**

- Too slow (5-10 years)
- Too expensive ($100M+)
- Only 5% of patients can, or do participate

**TOO MANY OPTIONS, TOO FEW PATIENTS**

- ~3500 open IO trials in the US
  - Requiring ~600,000 patients
- Only ~50,000 patients / year enroll in trials

The problem is getting exponentially worse with the explosion of molecular cancer subtypes and new oncology drugs
Regulators Agree That Change Is Needed

“We must bridge clinical research and health care or the entire enterprise is going to fall down.” Janet Woodcock, Director, CDER. FDA

- Master protocols
- Adaptive designs
- Seamless trials
- Expanded access
- Real-world evidence (RWE)

Helpful but not enough to solve the existential problem: too many options, too few patients

We need a paradigm shift to integrate clinical research and care
From Approving Products to Curing Patients

OLD WAY
Trials finding best patients for a given therapy

Patients

Leveraging knowledge and AI to find the best treatment regimens for each patient

Patients
xArianne

Patient with DIPG holding her investigational drug she got access to with xCures

xCures Platform:

An AI-supported precision oncology platform that finds and recommends novel treatment options, facilitates access, informs decision-making, and records outcomes.

A perpetual trial that slashes site setup times and that continuously learns from all patients, all physicians, all therapies, all diagnostics, all the time.

Creating value

- Faster, cheaper development of drugs and diagnostics
- Payers pay only for what works
- Patients get access to the most promising treatments
We Have Partnered with Trusted Cancer Networks to Bring Patients and Oncology Experts into Our System

RESPECTED NON-PROFIT

- Network of world-class physicians and researchers
- 4,000+ patients who have benefitted from virtual tumor boards
- Multiple peer reviewed publications
- American Cancer Society collaborator

Software and Services

- Treatment options from virtual tumor boards, past cases, outcomes data
- Access to drugs needed to act on those recommendations
- Capture resulting real-world data
- Coordinate options across patients to optimize outcomes and learning
Applications / Systems

1. Intake
2. Initial Options
3. VTB Setup
4. VTB Discussion
5. Options Delivery
6. Treatment Access
7. Follow-up

Intake
AI Options Assistant
Expert Selection
VTB Tool
Patient Options
Access Assistance
Patient Connect

Options Library
Patient Data

+repositories
Slashing the Time and Cost of Development

**TRADITIONAL TRIALS**
- 100% Clinical trial
- 95% Patients
- 5% No or inferior care

- Inclusion/exclusion criteria
- Randomized control
- Geographic disparity

5-10 years, 200 patients @ $50,000

Each site / phase starts anew
New sites take months

**XCURES TRIALS**
- 100% Patients
- 100% In studies with optimal therapies

- No inclusion/exclusion
- No randomized control
- All geographies

1 year, 20 patients @ $2,000

Always on and siteless
Costs amortized across all therapies and diagnostics
Creating Value Through a Master Platform and AI

- A Common Platform Across Clinical Trials
- AI Dynamically Allocates Patients to Optimize Outcomes
- Insights Shared Across Ecosystem

- KOLs/VTBs
- Physicians/Health Networks
- Diagnostics Manufacturers
- Service Providers
- Pharma Manufacturers
- Payers
- CT

xCures Platform: Options, Access and Outcomes

LEARNING FROM ALL PATIENTS. ALL PHYSICIANS. ALL THERAPIES. ALL DIAGNOSTICS. ALL THE TIME.

SUPPORTING VIRTUAL TUMOR BOARDS
- Knowledge sharing
- Decision support
- Treatment planning

SERVICING PATIENTS
- Trial enrollment
- Expanded access
- Reimbursement for diagnostics and drugs

TRACKING REAL WORLD EVIDENCE
- Master protocol
- Data registries
Options – Using Experts and AI to Optimize Care

Knowledge Sharing
NLP to capture treatment options, recommendations, and rationales from literature, conferences, social media, and real-world evidence

Decision Support
Virtual Tumor Boards develop treatment options for each patient, balancing personal insights against outcomes data and new options injected by researchers and industry.

Treatment Planning
Evaluating patient’s treatment longitudinally with multiple drug regimens, to maximize shots on goal

Source: stanford.edu
Access – Getting the Right Care to Patients

xCures SERVICES

• Trial matching and enrollment (ethical)
• Manage expanded access programs and trials
• Pay-for-performance program
• Clearinghouse for EA and off-label therapies
• Real world data gathering of impact of diagnostics use in decision making

BENEFITS

• Patients get access to the latest technologies
• xCures gets hot drugs on our platform for use by patients in Perpetual Trials
• Companies get real world data to accelerate approvals, label extensions, reimbursements
• Physicians get administrative support
Outcomes – Generating Real World Evidence

XCELSIOR Study

- IRB-approved Master Protocol
- Always-on: All patients and all treatments
- Add new sites, PIs, and drugs in days through amendments, sub-PIs, and subprotocols
- Patient-centric design: minimal inclusion / exclusion criteria; no randomized controls
- Level 1: Observational registry captures longitudinal, regulatory grade, treatment and outcomes data
- Level 2: Virtual Tumor boards and Virtual Trials seek to optimize individual outcomes and collective learning
- Innovative statistics for efficient signal generation from small data sets

- 21 CFR Part 11 Validated, HIPAA & FISMA compliant, and WHODrug and MedDRA certified EDC system
- All access and activity in the system is tracked
- Audit trail shows who made a change, the date and time, and the old and new values
- Standardized data reporting forms support precision oncology studies for most solid tumors
- Reporting forms can be quickly customized to capture study-specific fields
Pilot with Expanded Access to ONC201 Shows Patient Interest

- Average Site Activation Time – 28 days
- Protocol was expanded in June
- Demand from EU strong evaluating expansion

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<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
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<td><strong>ONC201 EAP Patients</strong></td>
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XCELSIOR – A Patient-Centric Platform Trial for Precision Oncology

- Platform release in early July resulting in accelerated enrollment
- Initial focus has been on Pancreatic and Brain cancer but starting to accrue other cancer types

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<th>XCELSIOR Patient Enrollment</th>
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Initial results are promising

A Swedish patient spent significant resources to get assessed for the ONC201 pediatric glioma trial. He was not eligible.

We were able to get him onto the ONC201 expanded access protocol.

After 4 months of ONC201 use, the tumor has shown a decrease of 20% on the latest MRI.

We continue to monitor the outcomes and use the data for future decision making.
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XCURES.COM

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