

**To:** Leona Garriott[lgarriott@theranos.com]  
**From:** Elizabeth Holmes  
**Sent:** Thur 8/22/2013 2:21:35 AM  
**Importance:** Normal  
**Subject:** FW: Updated Theranos story - with statistics  
**Received:** Thur 8/22/2013 2:21:00 AM  
[Theranos Story 8.21.13 UPDATED with stats.docx](#)  
[Theranos Statistics 8.21.13.docx](#)

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**From:** Tami Anderson [mailto:tami@grow-marketing.com]  
**Sent:** Wednesday, August 21, 2013 5:43 PM  
**To:** Laura Fogelman  
**Cc:** Elizabeth Holmes; Christian Holmes; Jeffrey Blickman; Daniel Edlin; susan.thomas@grow-marketing.com; Cassie Hughes; Leona Garriott; Stephanie Hagen  
**Subject:** Re: Updated Theranos story - with statistics

Hi Elizabeth,

Please see attached an updated Theranos story document with including stats from the recent Wall Street Journal article on over-prescribing antibiotics, and removed references to stats which Grow was tasked with looking into that we were not able to find (% of uninsured patients who get their lab work done in the ER, etc.) so please work from this version instead.

Also attached is a document (Theranos Stats) with stat sources to share with Joe in both hard and soft copy so he does not need to look them up to write his story. Note there are some pending stats that your team was looking into, which you should include if you have them but otherwise please delete the red text from this document before sharing with Joe.

I'm sure all will go great tomorrow! Cassie is going to send some last minute reminders to ponder tonight and help you get in the zone for tomorrow. Please do let us know if you need anything else from us.

All best,  
Tami

On Aug 21, 2013, at 4:25 PM, Laura Fogelman <laura.fogelman@grow-marketing.com> wrote:

Hi Elizabeth,

Here is the same version of the Theranos story, including all of the statistics that we've been able to track down and their respective sources. We will send a separate document shortly that includes selected statistics to share with Joe. Let us know if you have any questions about anything in the attached.

Christian, Jeff and Dan - we've left all of the remaining stat placeholders that we weren't able to find in red, in case you were able to pull any of those numbers.

<Theranos Story\_8.21.13\_with stats.docx>

Best,  
Laura

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SEC-USAO-EPROD-001236553

2013 Ex Award, Best In-Store Event  
2012 Event Marketer "It List," The Event Industry's Top 100 Agencies  
2012 The Stevie Awards, Silver & Bronze Winners, Best New Product Introductions

On Aug 21, 2013, at 9:09 AM, Tami Anderson <[tami@grow-marketing.com](mailto:tami@grow-marketing.com)> wrote:

Good morning Elizabeth,

Attached is the updated story flow based on our meeting yesterday with new language called out in blue. Stats are still to be filled in and are noted in red. Please let us know if you have any questions and if you would like to schedule some time this afternoon to go over any other Q&A to help prepare for the interview.

all best,  
Tami

<Theranos Story\_8.21.13.docx>



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2012 Event Marketer "It List," The Event Industry's Top 100 Agencies

2012 The Stevie Awards, Silver & Bronze Winners, Best New Product introductions

2011 Platinum PR Awards, Best Client Re-branding Campaign

2011 Event Marketer "It List" The Event industry's Top 100 Agencies

2011 Promo Pro Award HM, Best use of PR in a Promotion



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2012 The Stevie Awards, Silver & Bronze Winners, Best New Product Introductions



## the theranos story.

### Interview Goal:

Tell a compelling story about how the new Theranos' lab infrastructure can **strip billions of dollars of unnecessary cost out of the healthcare system** while improving patient care that leads Joe to conclude that **Theranos has the potential to fundamentally change the U.S. healthcare system**

**Fact: Lab testing represents a small percentage of total healthcare spending, yet has an outsized impact on clinical decision-making**

- Total healthcare spending is \$2.7T (Source: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/highlights.pdf>)
  - Lab spending represents just 2% of Medicare and 2.3% of total healthcare (Source: Lewin, *Laboratory Medicine: A National Status Report, 2008* [https://www.futurelabmedicine.org/pdfs/2007%20status%20report%20laboratory\\_medicine\\_-\\_a\\_national\\_status\\_report\\_from\\_the\\_lewin\\_group.pdf](https://www.futurelabmedicine.org/pdfs/2007%20status%20report%20laboratory_medicine_-_a_national_status_report_from_the_lewin_group.pdf))
  - BUT: lab testing drives 70% of clinical decision-making (Source: Lord Carter of Coles, *Report of the Review of NHS Pathology Services in England. Independent Review for the Department of Health, 2006.*)

**The Problem/Opportunity: Lab testing approach and infrastructure has lagged behind the rest of the healthcare industry in innovation/hasn't fundamentally changed in years.**

Lab testing infrastructure was designed for infectious disease detection rather than diagnosis and management of chronic conditions, which drive the majority of healthcare costs today

- 7 out of 10 deaths among Americans each year are from chronic diseases. (Source: Centers for Disease Control and Prevention, *Chronic disease overview. 2005* <http://www.cdc.gov/nccdphp/overview.htm>)
- Chronic disease accounts for approximately 75% of U.S. health expenditures. (Source: Centers for Disease Control and Prevention, *Rising Health Care Costs are Unsustainable. 2011* <http://www.cdc.gov/workplacehealthpromotion/businesscase/reasons/rising.html>)
- Despite the 10/80 fallacy that the 10 percent of people with chronic conditions spend 80 percent of plan dollars, 6 percent of the people in the middle of an acute health care episode, e.g., cancer, heart or valve surgery, spine surgery, etc., spend 80 percent of plan dollars. Most of what they have is not preventable and many have chronic but coincidental conditions. An example is someone with liver cancer who also has asthma. (Source: Emerick, Tom, Lewis, Al, *Cracking Health Costs: How to Cut Your Company's Costs and Provide Employees Better Care.* <http://www.workforce.com/articles/9299-medical-mythbusters-crack-back-on-health-care-costs>)
- About 10 to 20 percent of that population is misdiagnosed. (Source: Emerick, Tom, Lewis, Al, *Cracking Health Costs: How to Cut Your Company's Costs and Provide Employees Better Care.*)



- <http://www.workforce.com/articles/9299-medical-mythbusters-crack-back-on-health-care-costs>)
- % of chronic conditions that progress into acute conditions and the impact on cost (THERANOS)
  - Phlebotomy dates back to 1400B.C., to the ancient practice of bloodletting, and comes from the Greek word phlebos, meaning veins, and tome, meaning incision. By the end of the 19<sup>th</sup> century, phlebotomy was widely declared “quackery” (Source: <http://phlebotomycertification.npce.org/wp-content/uploads/2013/04/Study-Guide-2013.pdf>)
  - Today, there are 100,380 phlebotomists, with the highest employment rates in CA, TX, FL, PA, OH, and a mean hourly wage of \$14.86 (Source: <http://www.bls.gov/oes/current/oes319097.htm>)
  - What hasn't changed?
    - There have not been any milestone innovations of instrumental techniques to clinical chemistry in 30 years. (Source: Kricka, Larry J., Savory, John, *International Year of Chemistry 2011: A Guide to the History of Clinical Chemistry. Clinical Chemistry, August 2011 vol. 57 no. 8 1118-1126* <http://www.clinchem.org/content/57/8/1118/T2.expansion.html>)
    - The way samples are collected (show needles and vials – hold off on finger stick and Nanotainer™ for later)
      - Impact: patients don't comply – only 62% of recommended laboratory and radiology tests are provided for preventive, acute, and chronic care (Source: Lewin, *The Value of Laboratory Screening and Diagnostic Tests for Prevention and Health Care Improvement. 2009* [http://www.lewin.com/~media/Lewin/Site\\_Sections/Publications/Lewin%20Value%20LabTesting%20Sept%202009.pdf](http://www.lewin.com/~media/Lewin/Site_Sections/Publications/Lewin%20Value%20LabTesting%20Sept%202009.pdf))
    - The way samples are processed (talk about lack of standardization and automation)
      - Impact: physicians lack the lab information they need when they need it for optimal diagnoses and treatment
        - Wrong diagnoses
        - Wrong or unnecessary treatments
        - Delayed treatments, which correlate to the unnecessary progression of disease
        - % of treatments started without lab results (THERANOS)
    - Lack of transparency in pricing
      - Impact: lab testing is more expensive than it needs to be
  - **There is a huge opportunity to take cost out of the healthcare system and change decision-making and in many cases, outcomes – for the better**

**The Solution: Theranos is helping to change the definition of care by establishing a health system for early detection, while stripping billions of dollars out of the healthcare system.**

Theranos' has innovated lab testing to provide actionable information at the time it matters for physicians and to empower consumers to play a larger role in their own health by building the nation's highest quality, lowest cost lab

- Nation's first high complexity CLIA-certified lab that runs all its tests on microsamples
  - Microsamples (show the Nanotainer™ – compared to needle and vials)
    - Proprietary collection, transport and testing
  - Significance of CLIA
- Introduction of standardization and automation
  - Automated the pre-and post-analytical phases of the lab testing process, which account for 93% of errors (*Source: Ranjna Chawla, PhD, Binita Goswami, MD, DNB, Devika Tayal, MD and V Mallika, MD, Identification of the Types of Preanalytical Errors in the Clinical Chemistry Laboratory: 1-Year Study at G.B. Pant Hospital. LabMedicine, 41, 89-92. 2010*  
<http://labmed.ascpjournals.org/content/41/2/89.full.pdf&embedded=true>)
- Automated reflex testing to reduce time between test and diagnosis
  - % of tests that require follow on/additional tests (THERANOS)
  - % of additional tests added that require a new draw or sample (THERANOS)
- Speed
  - Results are available in a matter of hours
- Access
  - First time that lab testing is available in the retail setting through Walgreens partnership (and Safeway?), with convenient night and weekend hours
    - Note: LabCorp and Quest both offer limited weekend hours at select locations, for all types of tests.
  - Hospital labs represent 55% of clinical test volume. (*Source: Washington G-2 Reports, [http://c.ymcdn.com/sites/www.clma.org/resource/resmgr/Professional\\_Development\\_-\\_Past\\_ThinkLabs/305\\_Stephanie\\_Murg.pdf](http://c.ymcdn.com/sites/www.clma.org/resource/resmgr/Professional_Development_-_Past_ThinkLabs/305_Stephanie_Murg.pdf)*)
- Cost
  - Always 50% of Medicare or less – and pricing is transparent (price list published on website)
  - Cost is the same for everyone - because your test should cost the same no matter who you are

The Value: Theranos provides actionable lab information at the time it is needed most, driving better decisions, empowered consumers and better outcomes

- **For physicians: as complete and comprehensive a diagnosis as possible, at the earliest time possible, improving patient outcomes and relationships**
  - Can now order tests and receive results electronically in advance of patient visits
  - Provides meaningful insight into tests/changes over time, helping to detect disease early and potentially avoid/better manage chronic conditions
    - 60% of the time physicians prescribe antibiotics, they choose broad-spectrum ones (*Source: <http://www.healthline.com/health/antibiotics/antibiotic-resistance#antibiotic-resistance-2>*  
[e/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle\\_h](http://www.healthline.com/health/antibiotics/antibiotic-resistance#antibiotic-resistance-2))

- 25% of the time antibiotics were being prescribed for conditions in which they have no use, such as viral infections (*Source: e/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle\_h*)
  - Access to the combinations/types of tests that they may not have had previously because of limitations in technology and cost
  - Data from fresh samples more meaningful
  - Small sample volume – ability to sample at right times and not be restricted - allowing a lower pain option, particularly critical for oncology, geriatric and pediatric patients where ability to draw blood is limited
  - Seamlessly integrates with existing physician workflow
  - Access to data through improved connectivity
  - Transparency of pricing and accuracy
    - First lab to publish price list on its website
    - Co-variance rates for each test included on form
- **For consumers: dramatically different consumer experience**
  - Less invasive test from a tiny sample
    - Needle phobia affects at least 10% of the population. (*Source: Hamilton, JG, Needle Phobia – A Neglected Diagnosis. Journal of Family Practice, Volume: 41, Issue: 2, Pages: 169-175, Published: AUG 1995 <http://www.ncbi.nlm.nih.gov/pubmed/7636457>*)
  - Costs are the lowest available, available up front, and are the same for everyone regardless of whether they are insured or not
  - Faster and digital results
    - Helps minimize test anxiety - more than 80 percent of patients said they would rather have online access to such results within three days, no matter how dense the jargon, than wait a week or longer for a doctor's interpretation. (*Source: Wake Forest Baptist Medical Center in Winston-Salem, N.C., The Journal of the American College of Radiology, 2012 <http://well.blogs.nytimes.com/2012/07/23/the-anxiety-of-waiting-for-test-results/>*)
    - Empowers consumers to take control of their own health
  - Unprecedented convenience
    - Available in retail setting, including night and weekend hours
    - Walgreens has more than 8,000 pharmacies, conveniently accessible within three miles of nearly 2/3 of the U.S. population
    - Standing orders and automated reflex testing to minimize additional lab trips
  - **We have built a consumer-centric infrastructure, which is critical to engage patients and increase compliance**
- **For payers (private and public): lower direct and fully loaded healthcare costs**
  - Direct cost savings:
    - Lower reimbursement thresholds and lower direct out of pocket costs



- If MediCal billed at Theranos rates, they would realize \$21.9B in aggregate savings over 10 years, beginning starting in 2013.  
(Source: CMS.gov, KFF.org and Theranos estimates)
- Lower fully loaded costs of care by reducing repeat testing, secondary effects of improper diagnosis, unnecessary treatment and the progression of chronic conditions into acute illnesses
- Enables shift from fee for service model toward quality-based payments

**Example: Bacterial versus viral**

- When doctors don't know exactly what type of bacteria is causing an infection they may prescribe a broad-spectrum antibiotic. Ordering up a test to isolate the source of the bacteria can take a day or two to get results. Waiting can risk the infection spreading. Patients also may be in discomfort and not willing to wait see 8/19 article in WSJ:  
[http://online.wsj.com/article/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle\\_h](http://online.wsj.com/article/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle_h)
  - the CDC found that 60% of the time physicians prescribe antibiotics, they choose broad-spectrum ones - the study relied on a public database with information on nearly 240,000 visits to doctor's offices and emergency departments...
  - A similar study of children, published in the journal Pediatrics in 2011, found that when antibiotics were prescribed they were broad-spectrum 50% of the time, mainly for respiratory conditions.
  - Both studies also found that about 25% of the time antibiotics were being prescribed for conditions in which they have no use, such as viral infections.
  - This is upward of 30, 40 million prescriptions a year

**Example: Chronic disease**

- Diabetes example – before/after with cost implications – now it's possible for the first time...
  - Costs of tests are much lower – more accessible and affordable to be able to test over time
  - Access – people who live in a poor neighborhoods, far away from a doctor will be able to go into a local Walgreens and get tests
  - Quality - you can't see data over time today as a result of variance across labs, etc. – with Theranos for first time, lab reports show variance +/- 1, physicians will be able to tell as early as possible whether changes are clinically significant (both progression and regression)
  - Care – early intervention is critical to impact outcomes (and costs)

**Wrap up: If you remember just 3 things about Theranos:**

1. Best decisions as early as possible/Improving care delivery: actionable information at the time it matters (physicians, payers, consumers)
2. Highest quality (experience & integrity of the data), lowest cost (access & affordability) lab



3. Helping to change the definition of/redefine care by establishing an infrastructure for early detection, while stripping billions of dollars out of the healthcare system.

**WE WILL NOT DISCUSS:**

- Future tests
- DoD
- ObamaCare
- International
- New flu tests
- Business with hospitals
- Device



## statistics and sources

**An estimated 70-80% percent of medical decisions regarding prevention, diagnosis, and treatment involve lab tests.**

Source: Lord Carter of Coles, Report of the Review of NHS Pathology Services in England. Independent Review for the Department of Health, 2006.  
<http://www.pathologists.org.uk/publications-page/Carter%20Report-The%20Report.pdf>

**Spending on laboratory services accounts for only 2.3 percent of U.S. health care expenditures and 2 percent of Medicare expenditures.**

Source: Lewin, Laboratory Medicine: A National Status Report, 2008  
[https://www.futurelabmedicine.org/pdfs/2007%20status%20report%20laboratory\\_medicine\\_-\\_a\\_national\\_status\\_report\\_from\\_the\\_lewin\\_group.pdf](https://www.futurelabmedicine.org/pdfs/2007%20status%20report%20laboratory_medicine_-_a_national_status_report_from_the_lewin_group.pdf)

**There have not been any milestone innovations of instrumental techniques to clinical chemistry in 30 years.**

Source: Kricka, Larry J., Savory, John, International Year of Chemistry 2011: A Guide to the History of Clinical Chemistry. Clinical Chemistry, August 2011 vol. 57 no. 8 1118-1126 <http://www.clinchem.org/content/57/8/1118/T2.expansion.html>

**The pre-and post-analytical phases of the lab testing process account for 93% of errors.**

Source: Ranjna Chawla, PhD, Binita Goswami, MD, DNB, Devika Tayal, MD and V Mallika, MD, Identification of the Types of Preanalytical Errors in the Clinical Chemistry Laboratory: 1-Year Study at G.B. Pant Hospital. LabMedicine, 41, 89-92. 2010  
<http://labmed.ascpjournals.org/content/41/2/89.full.pdf&embedded=true>

**Only 62% of recommended laboratory and radiology tests are provided for preventive, acute, and chronic care.**

Source: Lewin, The Value of Laboratory Screening and Diagnostic Tests for Prevention and Health Care Improvement. 2009  
[http://www.lewin.com/~media/Lewin/Site\\_Sections/Publications/Lewin%20Value%20LabTesting%20Sept%202009.pdf](http://www.lewin.com/~media/Lewin/Site_Sections/Publications/Lewin%20Value%20LabTesting%20Sept%202009.pdf)

**Hospital labs represent 55% of clinical test volume.**

Source: Washington G-2 Reports  
[http://c.ymcdn.com/sites/www.clma.org/resource/resmgr/Professional\\_Development\\_-\\_Past\\_ThinkLabs/305\\_Stephanie\\_Murg.pdf](http://c.ymcdn.com/sites/www.clma.org/resource/resmgr/Professional_Development_-_Past_ThinkLabs/305_Stephanie_Murg.pdf)

**7 out of 10 deaths among Americans each year are from chronic diseases.**

Source: Centers for Disease Control and Prevention, Chronic disease overview. 2005  
<http://www.cdc.gov/nccdphp/overview.htm>

**Chronic disease accounts for approximately 75% of U.S. health expenditures.**

Source: Centers for Disease Control and Prevention, Rising Health Care Costs are Unsustainable. 2011  
<http://www.cdc.gov/workplacehealthpromotion/businesscase/reasons/rising.html>

**Studies (CDC, Pediatrics) also found that 25% of the time antibiotics were being prescribed for conditions in which they have no use, such as viral infections; upward of 30, 40 million prescriptions a year.**

Source: Sumathi Reddy, Antibiotics Do's and Don'ts, *Wall Street Journal*, August 19, 2013  
[http://online.wsj.com/article/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle\\_h](http://online.wsj.com/article/SB10001424127887323423804579023113596120826.html?mod=djemLifeStyle_h)

% of chronic conditions that progress into acute conditions and the impact on cost  
Source:

% of tests that require follow on/additional tests  
Source:

% of additional tests added that require a new draw or sample  
Source:

% of treatments started without lab results  
Source: