



# TRU Touch

T E C H N O L O G I E S

Introductory Presentation

**Sobriety Assurance Solutions**  
**Non-invasive Alcohol Concentration Measurement**  
**Technology and Biometric Products**

# TruTouch 2500 – Unique Solution



- **Accurate Measurement Of Blood Alcohol at the Touch of a Finger**

- TruTouch employs near infrared (NIR) spectroscopy
- Skin illuminated with harmless light – similar to a flashlight

- **Completely noninvasive**

- No body fluids - No biohazards

- **Rapid results – low cost**

- Only passive contact with skin required
- Fast scan < 15 seconds
- No consumables

- **Integral Biometric Identity Verification Possible**

- No buddy punching - Allows for self administered tests

- **First Solution for broad deployment and daily use**

- Systems can be networked – tied to Time/Attendance/Access control if required

- **Platform – allows us to pursue several markets**

- DOT awarded \$2.5M for vehicle sensor interlock

# Customer Problem: Fitness to Work



## Typical Corporate Drug And Alcohol Policy

### 1. Pre-Employment

An alcohol breath test at interview establishes the company's policy on alcohol from the outset

### 2. Random

Anybody, anytime or everyone is tested daily or weekly and half are then tested a second time

### 3. For Cause

After any defined 'incident' or 'accident'

### 4. On Suspicion

An individual showing signs of intoxication, or who may be consistently late for work, or who is frequently absent due to sickness

### 5. 100% or High % on Entry

Everyone is tested entering a safety critical area – such as a mine, high-rise construction site, power station or oil rig

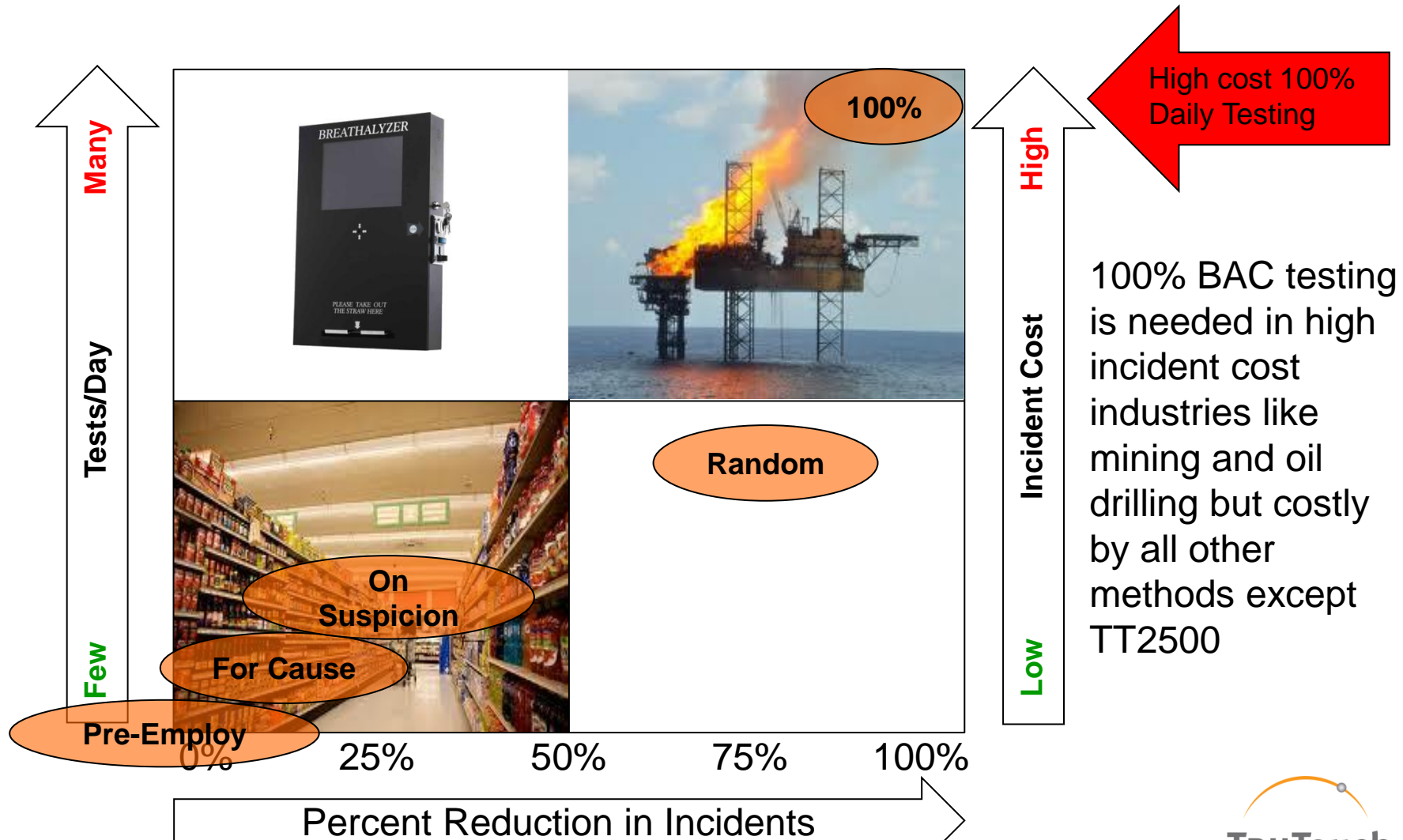
Source: *Wintergreen Research*

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High incident cost  
justifies expense of  
100% daily testing

# High Incident Cost Solution

Customer Problem: 100% daily testing is needed in but impractical



# Remove the Harmful Effects of Alcohol from Your Workplace

Automated, self administered, low cost, no consumable, biometric, easy to use intoxication screening tools...

Test employees at point of need, test daily/frequently.

System can be deployed across multiple sites, on a global basis – global data dashboard

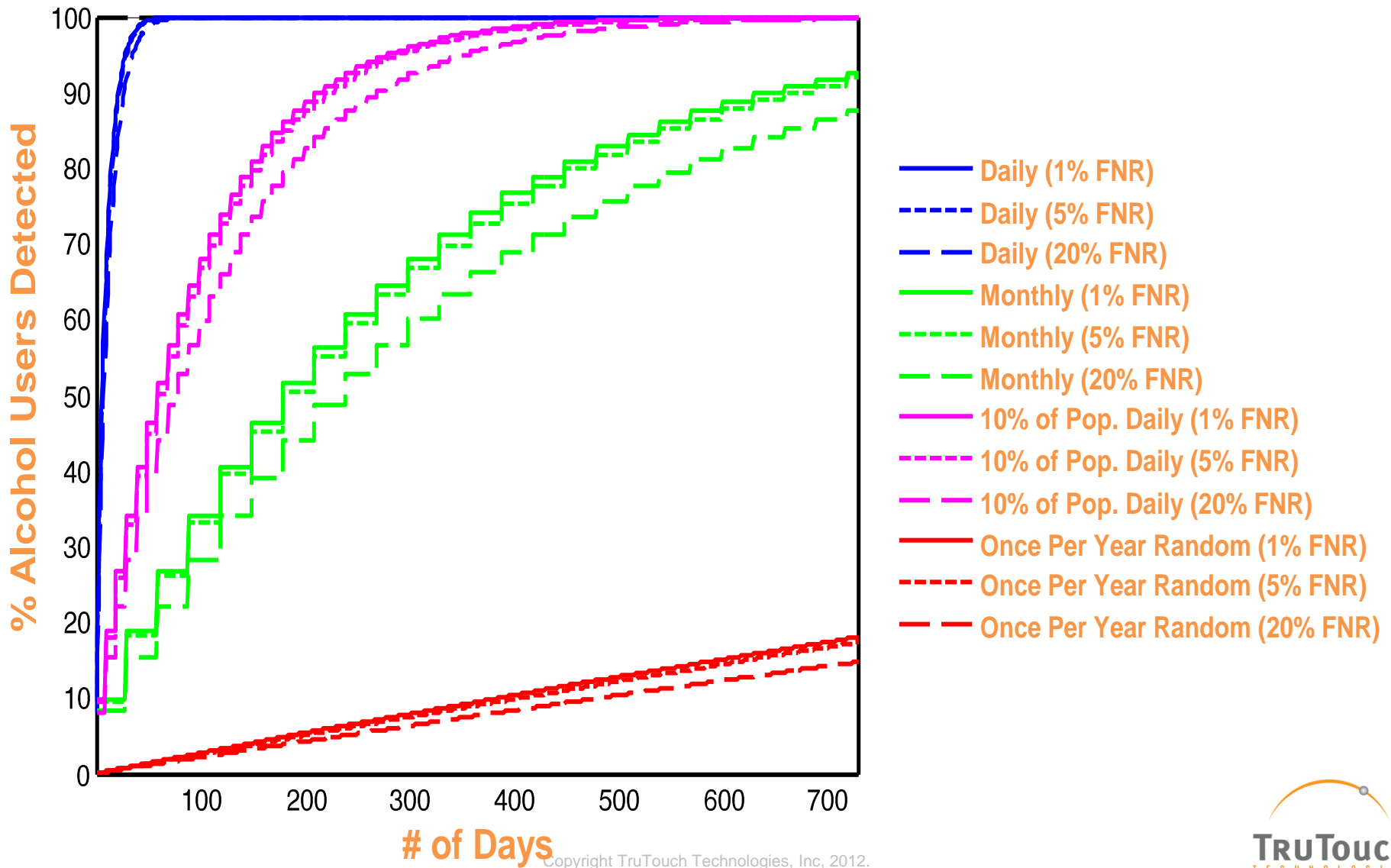
Quickly modify alcohol behavior in your organization and obtain the benefits

High throughput - ~ 150 to 200/hr – integrate into turnstiles, time and attendance clocks etc

# Shifting the Focus of Testing

- Shift mindset from “catching violators” to deterring/preventing the undesired behavior
  - Catching violators is a side effect of an effective testing program rather than the goal
- Show customers that the TruTouch 2500 does what they need
  - Provide an effective deterrent
  - Minimize impact on workflow
- What aspects of an alcohol testing program are important to satisfy those needs?

# Why Daily Testing?

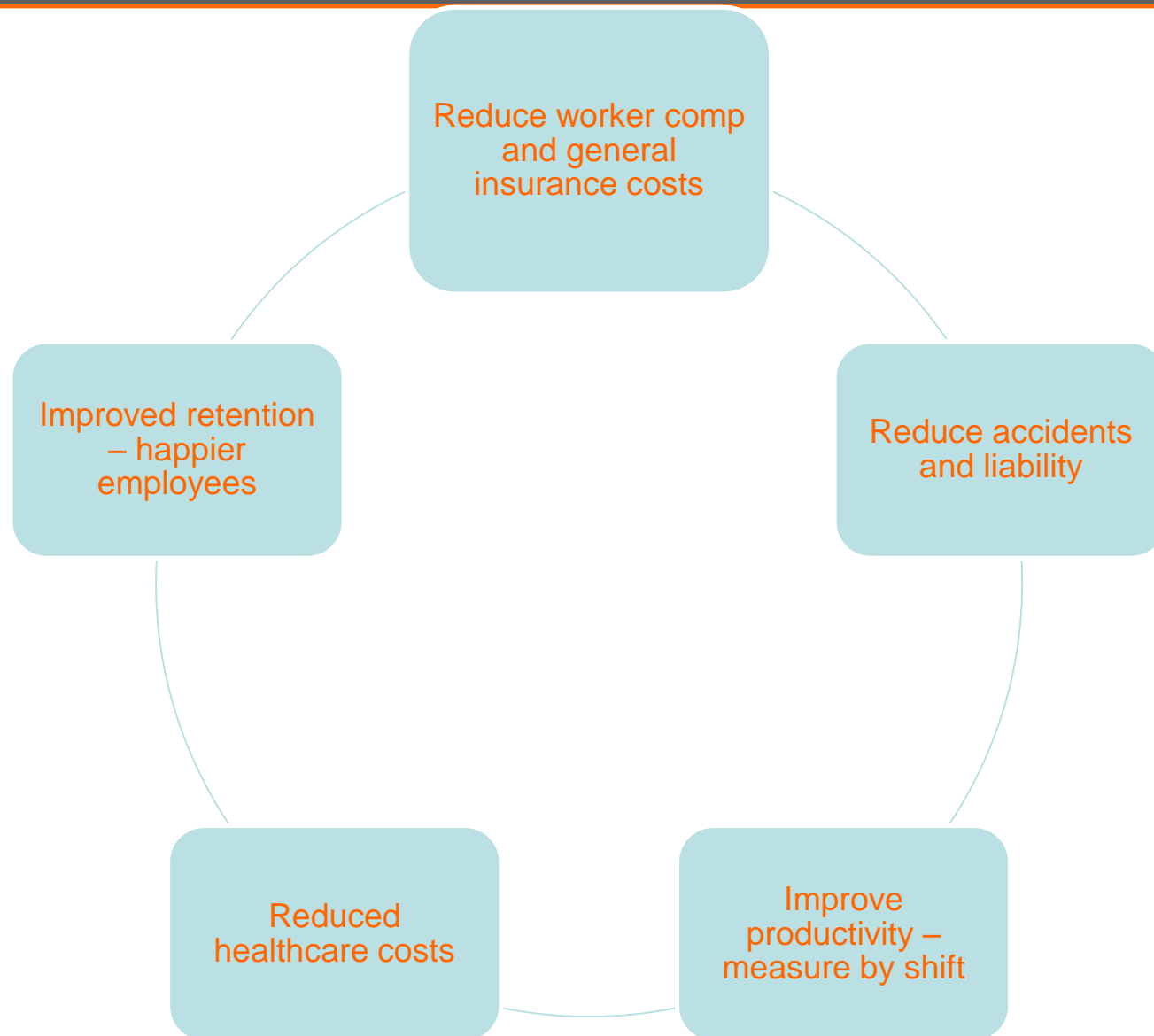


# Important Conclusions

- Frequency of testing is the most important aspect of an effective alcohol testing program
  - Daily testing at virtually any FNR yields a more effective program than less frequent testing
  - *The objective of the TruTouch 2500 is to maximize testing frequency while minimizing impact on workflow*
- Random, infrequent, alcohol testing is not effective at detecting alcohol in the workplace
  - It is therefore not an effective deterrent, nor does it strongly impact workplace safety
    - The result is a purely punitive program that punishes individuals
    - Group behavior unchanged due to minimal deterrent value



# Deterrence Impact - Value Proposition



# Specifications

- Fast Scan (15 secs.) and Full quantification (+15 secs.)
- Realistic throughput of 150 to 180 people per hour
- Walk up or enroll (biometric identification) – toggle between both
- Data and Biometric database (cross enrollment) reside on network
- Units can be networked together, across a network in same or multiple sites
- Data output – ethernet/USB – to reporting management tool, in Q4 2013 available dashboard tool
- Integrate into existing company ID system/access control – allows for custom implementation if needed. Leverage existing platform

# TT2500 Positioning

- Ideal for
  - Environments where more than 80 tests need to be performed per day – fewer if customer willing to pay
  - Environments that require testing of the same population on a recurring basis (enrolled/biometric mode) – but can also be used in “walk up mode”
  - Situations where employees self administer alcohol tests on a frequent basis
  - Multiple locations that can be networked together – linking devices and data dashboard
- In the USA - we will be deployed as a deterrence solution in addition/parallel to their Federally mandated program

# Concept of Operations

- Pre-employment
- Test at natural choke points
  - Access gates
  - Heli Pads
  - Dispatch office
  - land/sea oil rigs
  - before/during/after shifts
- Test safety sensitive employees and contractors
- Test drivers at point of departure, point of arrival or both
- Test everyone or randomly
- Deploy selectively (remote locations, problem locations) or use broadly. Test using mobile concept
- Ask sub contractors to test their employees more often

# Informatics and Analytics

TruTouch 2500 Devices deployed at multiple sites...



...Networked, providing real time data for analysis and reporting – state of alcohol in your organization  
Integrate into ID/Access control System

# Employee Implementation

## Contract Workers Visitors

- Short term – test in walk up mode at gate/choke point
- Basic implementation given close supervision
- Add biometric confirmation as needed

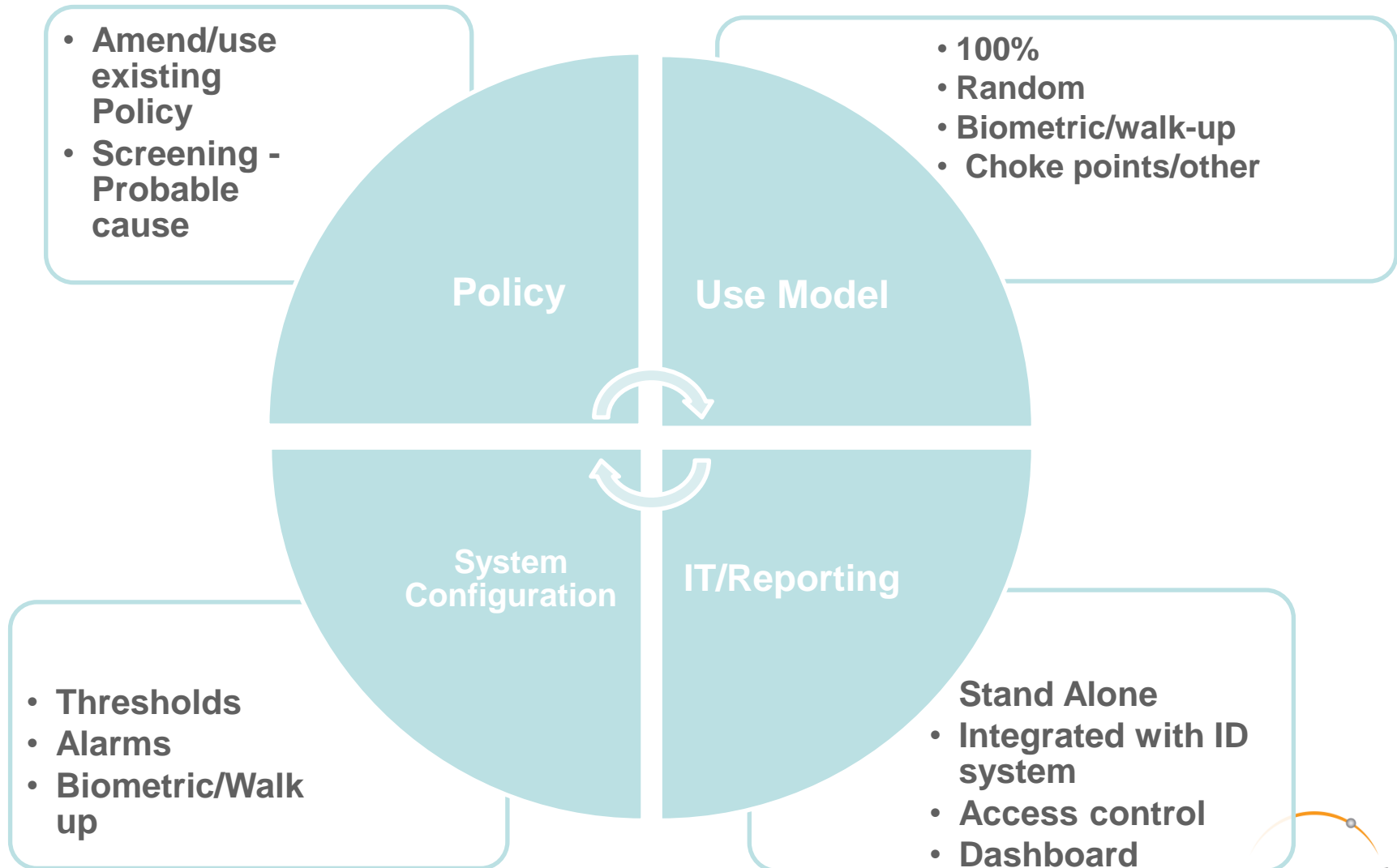
## Nested Contractors

- Add biometric enrollment for self administered testing
- Add networking and reporting features as required
- Contracting firms can enroll their new employees – remotely

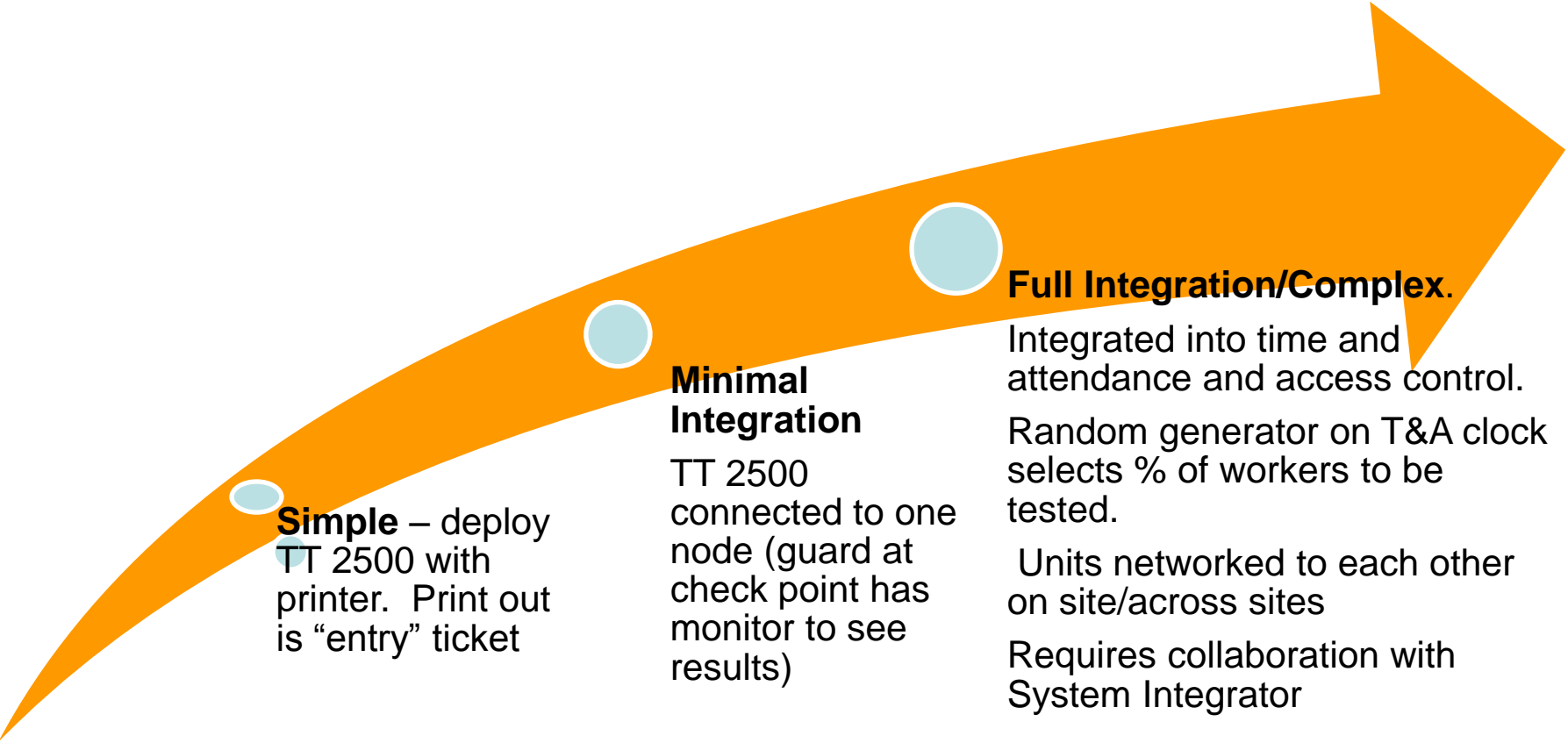
## Employees

- Safety Sensitive can be enrolled locally
- Security office – where ID issued
- Add integration into ID/Access control – standardize on existing platform

# Program Administration



# Implementation/Integration Spectrum



**Simple** – deploy TT 2500 with printer. Print out is “entry” ticket

**Minimal Integration**  
TT 2500 connected to one node (guard at check point has monitor to see results)

**Full Integration/Complex.**

Integrated into time and attendance and access control.  
Random generator on T&A clock selects % of workers to be tested.

Units networked to each other on site/across sites

Requires collaboration with System Integrator



# Integration for Alcohol Deterrence

- Reduce accidents and liability -- Safety
- Positive Culture Change
  - Reduce incidents of unfit for duty as a result of alcohol
  - Higher readiness resulting from service member awareness and responsible behavior regarding the use of alcohol
  - Improved retention
  - Reduced healthcare costs
- Improve productivity – measure by shift by day – after weekend and holidays
- Program analytics driven from real data in real time or near real time
- Reduced testing overhead in terms of manpower, consumables and bio-waste management

# Reference Customer: Coca-Cola

- **Customer Challenge**

51 employees operating heavy machinery/vehicles. Positive image of Coca-Cola brand important.

- **TruTouch Solution**

Truck drivers, forklift operators and others test daily at start (and end) of shift. Keys are released only with “pass” result.

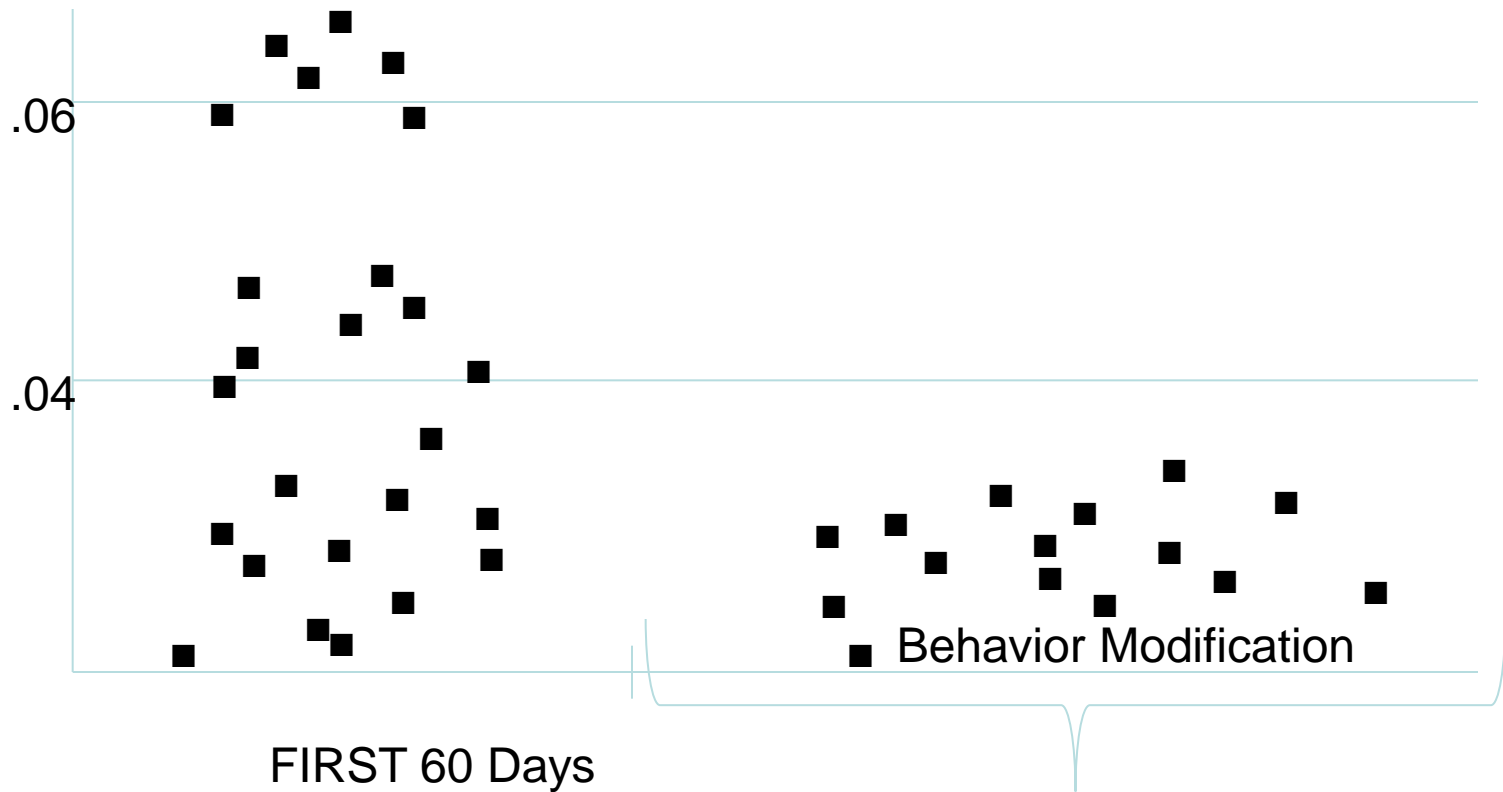
- **Results**

1,000 tests performed in first 35 days.  
Employee measured 0.07% BAC within 5 days. Second employee measured 0.26% BAC Friday after Thanksgiving.

Next steps – larger pilot on Oklahoma – 1,500 drivers



# Behavior Modification



This is what you want - deterrence

# Pricing Case Study

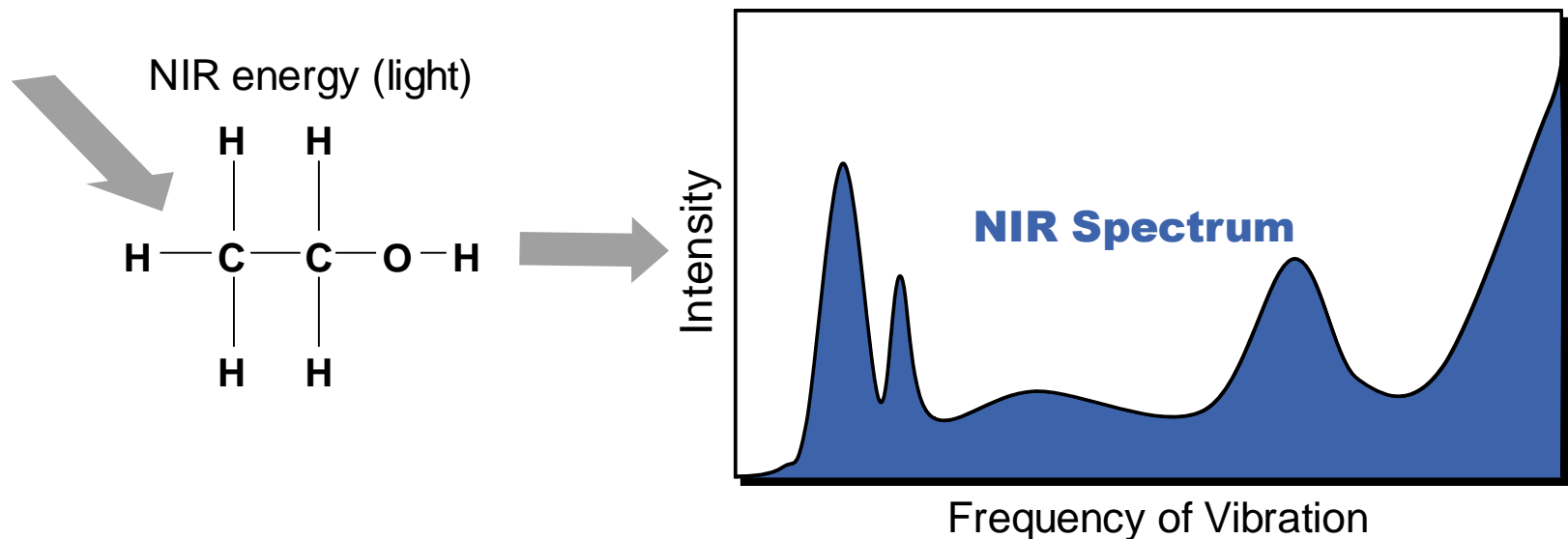
- Casino with 5000 employees
- 5 entrances – evenly distributed
- 3 shifts (assume 40/40/20 – night shift has fewer employees)
- 40% = 2000 employees in 5 gates = 400 per gate
- Employees clock in over a 15 minute period
  - In 15 minutes you can test 45 people on TT 2500
- You can test 10% of everyone on every shift on one device
- Everyone gets tested at least 1x every 10 days – strong deterrence
- $5 * \$1280 = \$6400$ /month to keep 5,000 employees alcohol free
  - \$1.28/month per employee/month

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# Technology Overview

# NIR Spectroscopy: Molecular 'Ringing'

- Energy in the NIR region excites molecular *vibrations*
  - Similar to the ringing of a bell, the frequencies of the vibrations come from a molecule's structural characteristics
  - The “frequencies” are unique for each type of molecule
- Different bells → Different “rings”



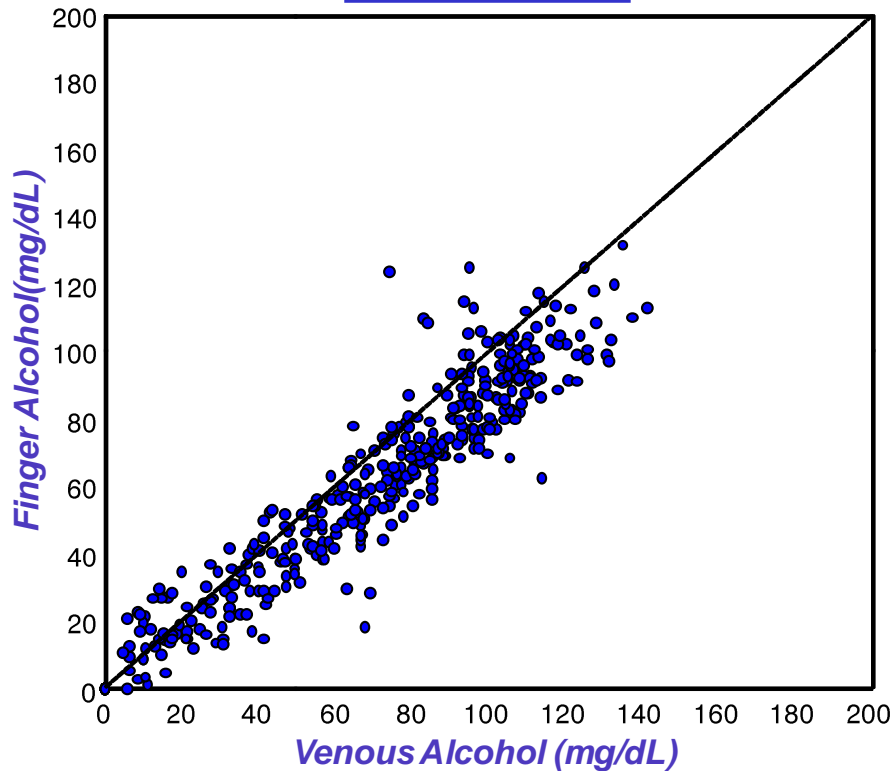
A molecule's NIR spectrum is uniquely related to its structure

# TruTouch Clinical Studies

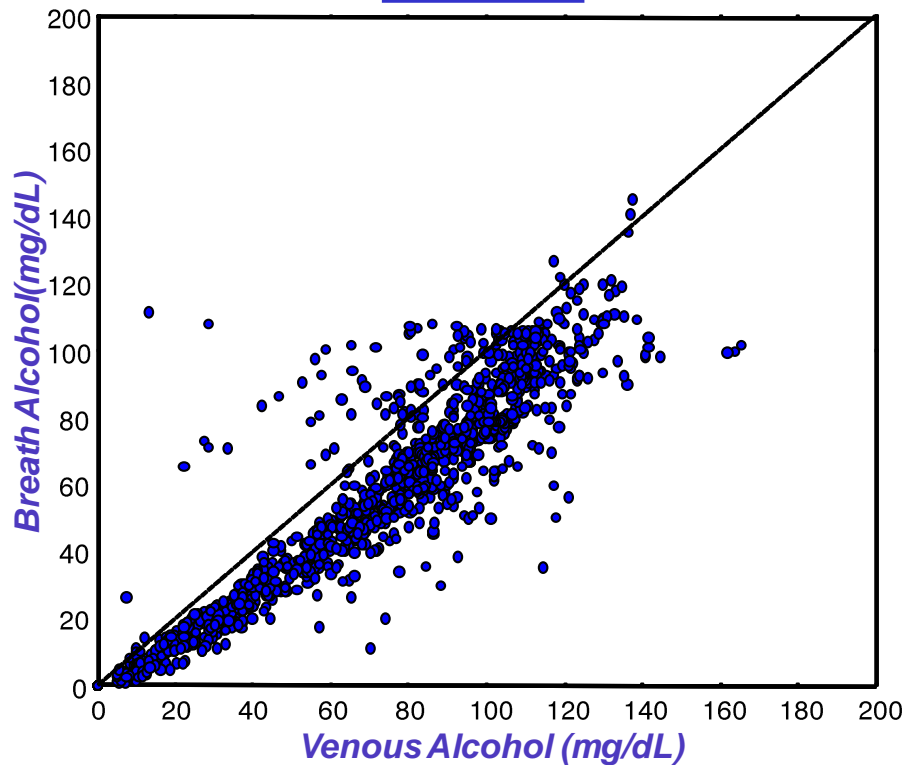
- Extensive Clinical Testing
  - >400 Alcohol dosing study participants
    - Range of age, gender, BMI, ethnicity
    - Variation in temperature, humidity
  - IRB approved protocols (UNM Human Research Review Committee)
  - Executed by Clinical Staff
    - Physician supervision
  - Contemporaneous to blood and breath measurements
    - >30,000 sets of breath, blood, and TruTouch measurements

# Clinical Validation

TruTouch



Breath

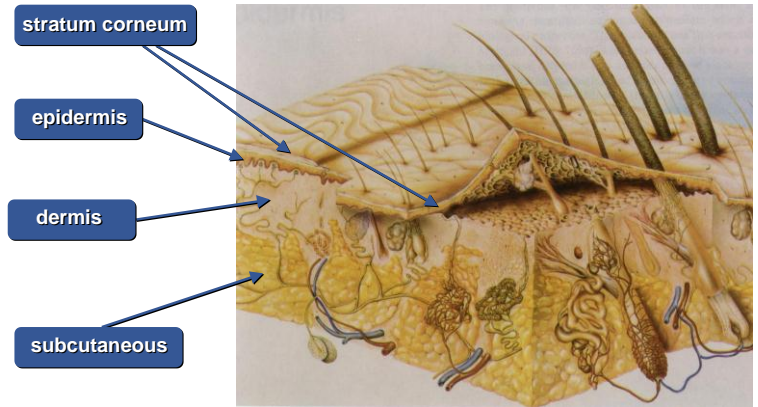


• *750,000+ tests performed in real-world environments*

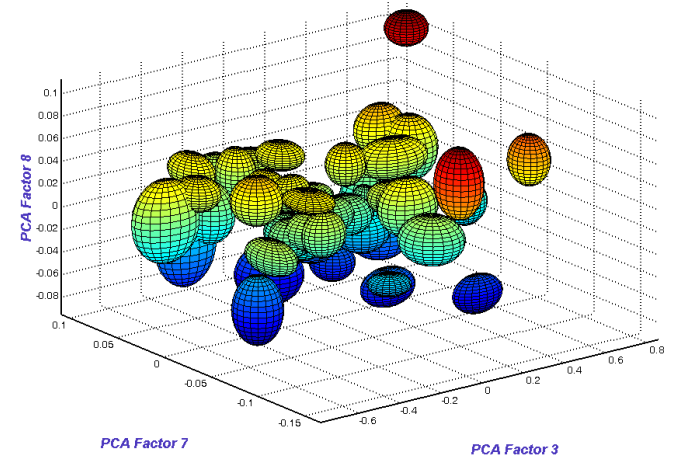


# TruTouch Biometric

- All people are comprised of the same chemical building blocks
  - *Water, proteins, etc.*
- However, each person has unique:
  - Tissue Structure – skin layer thicknesses
  - Tissue Chemistry – the concentrations of the building blocks
- Both contribute to the TruTouch biometric measurement
  - They just contribute in different relative amounts



Skin has multiple layers with different thicknesses and chemistry



Each ellipsoid encompasses the properties extracted from multiple measurements of a person

Each ellipsoid encompasses the data from only one individual

Many properties can be extracted from a TruTouch measurement

*These properties form the basis of the biometric*

*Example to the right shows 3 properties*

# Key Take Aways

- Safe and noninvasive
  - like putting your finger on a flashlight
- Validated and robust technology
  - 750,000+ tests performed in the field
  - Peer-reviewed scientific studies (pubs available)
- Core technology developed over 15 years and \$50M
  - Extensive IP portfolio (over 50 issued patents)
- Proven accuracy in clinical trials
  - $r^2 > 0.92$  high correlation to venous blood tests (gold standard used for blood alcohol measurement) – better than breathalyzer
- Built-in validated biometric identity authentication

# Next Steps

- Interested in removing the harmful effects of alcohol from your workplace?
  - Schedule a live demonstration
  - Apply for your company to be part of a TruTouch case study
  - Contact Susan Lobsinger (Local Master Distributor) [susan@lobdock.com](mailto:susan@lobdock.com)