Hybrid Cloud Security, Privacy, and Compliance

"Not all data is created equal and not all data is protected health information, but all data should be properly identified, classified, controlled and processed."

Hector Rodriguez, MBA
Chief Industry Security Officer
Microsoft Worldwide Health
Demands, Data Drivers, and Opportunities in Health & Life Sciences

Technology & Data Drivers:
- Social Platforms
- Wearables
- AI & Machine Learning
- Bots
- Unified Communications

Health Opportunities:
- Remote Patient Monitoring
- Care Coordination
- Patient Engagement & Personalized Care
- Virtual Health

GROWING, AGING GLOBAL POPULATION
- MORE EDUCATED CONSUMERS
- CARE CONTINUITY
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE
- MORE EDUCATED CONSUMERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS

BUDGETARY PRESSURES
- CYBERATTACKS
- RISING COST OF DRUGS

NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

AGING, AT-CAPACITY INFRASTRUCTURE
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Preventative Healthcare
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

RISING COST OF DRUGS
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Care Coordination
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Patient Engagement & Personalized Care
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Virtual Health
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Preventative Healthcare
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

RISING COST OF DRUGS
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Care Coordination
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Patient Engagement & Personalized Care
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Virtual Health
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE

Preventative Healthcare
- NATURAL DISASTERS
- PUBLIC HEALTH THREATS
- DISEASE OUTBREAKS
- STAFFING SHORTAGES
- RISE OF CHRONIC DISEASE
In precision medicine, focus is on identifying which approaches will be effective for which patients based on genetic, environmental, and lifestyle factors and data.
Transforming Personalized Care with Data

**Genomics**
Deliver personalized medicine leveraging tailored therapy from genomic data

**Clinical Analysis**
Gain insight into risks to track population health and optimize clinical outcomes with new data sources

**Care Coordination**
Enable proactive patient engagement through clinical coordination and predictive data

**Health Team Collaboration**
Share new ideas and data supported research (including quality metrics) with your health teams to proliferate impactful best practices

**Patient Engagement**
Empower patients and providers with a full view of patient health data to improve outcomes
The National Council of Vital Statistics (NCVHS) states: “…health data stewardship is the responsibility to ensure the appropriate use of personal health data that enables an organization to realize the greatest possible benefit from the effective and appropriate use of data while minimizing the risk of harm…”

NCVHS is the U.S. Department HHS statutory public advisory body on health data, statistics, and national health information policy and in their Data Stewardship Toolkit they recognize that being a Trusted Data Steward requires security, privacy, and compliance controls to protect the confidentiality, integrity, and availability of the data.

Source: NCVHS, “Toolkit for Communities Using Health Data”, November 2014
SECURITY IS EVERYONE’S RESPONSIBILITY

CISO key goals:

1. Ensure information/data assets and technologies are protected

2. **protect the confidentiality, integrity, and availability of the data** even if it’s not PHI

CISO key challenge:

- **People**
  
  a. are an organization’s strongest asset
  
  b. are an organization’s weakest security link
The Hybrid Cloud Must Provide Strong Data Protection & Privacy

**Data isolation**
Logical isolation to segregate each customer’s data from that of others

**In-transit data protection**
Industry-standard protocols should be used to encrypt data in transit to/from outside components, as well as data in transit internally

**Data redundancy**
Customers always own & control the option for replicating data, including number of copies and number and location of replication data centers

**At-rest data protection**
Customers chose and implement from a range of encryption options for data storage

**Encryption**
Data encryption in storage or in transit can be deployed by the customer to align with best practices for ensuring confidentiality and integrity of data

**Data destruction**
Strict standards for overwriting storage resources before reuse and the physical destruction of decommissioned hardware should be enabled & followed
Thank you

Hector Rodriguez, MBA
Hector.Rodriguez@Microsoft.com