Risk based De-identification for Population Health

Pamela Buffone
Privacy Analytics

PRIVACY ANALYTICS
NOW PART OF IMS HEALTH

The Goal

Unlocking sensitive data

Data as a strategic asset

✓ **Compliant**
✓ **High Utility**
✓ **High Quality**

Increasing Usage of PHI – Benefits & Risks

Observational Data

Consumer Data

Lab/Biomarker Data

Disease Registries

Electronic Medical Records

Claims (Rx, Dx)

Social Media

Integrated Data
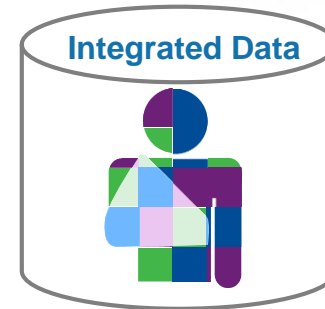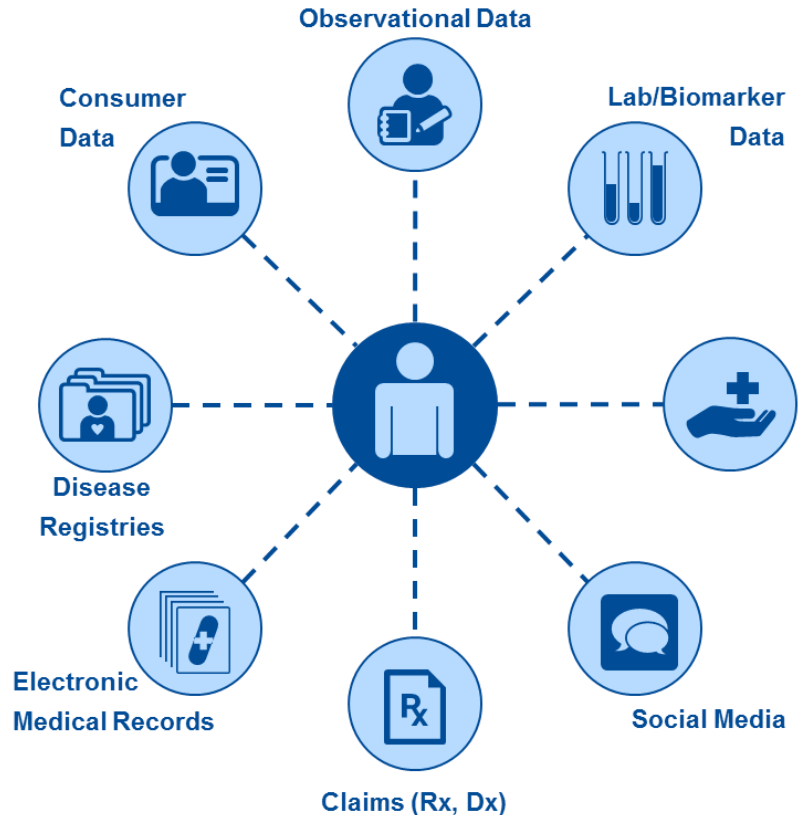
Privacy Risk Level

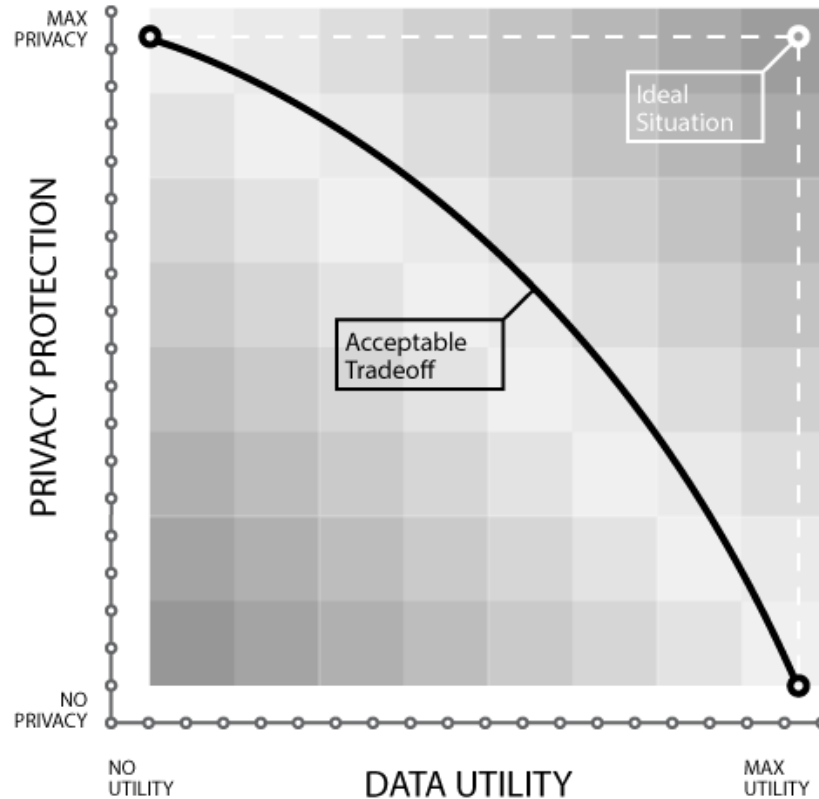Elevated

Patient Identifiers

Examples of direct identifiers: Name, address, telephone number, MRN, license plate number, clinical trial subject ID

Examples of quasi-identifiers: sex, date of birth or age, profession, event dates, hospital, diagnoses and procedures
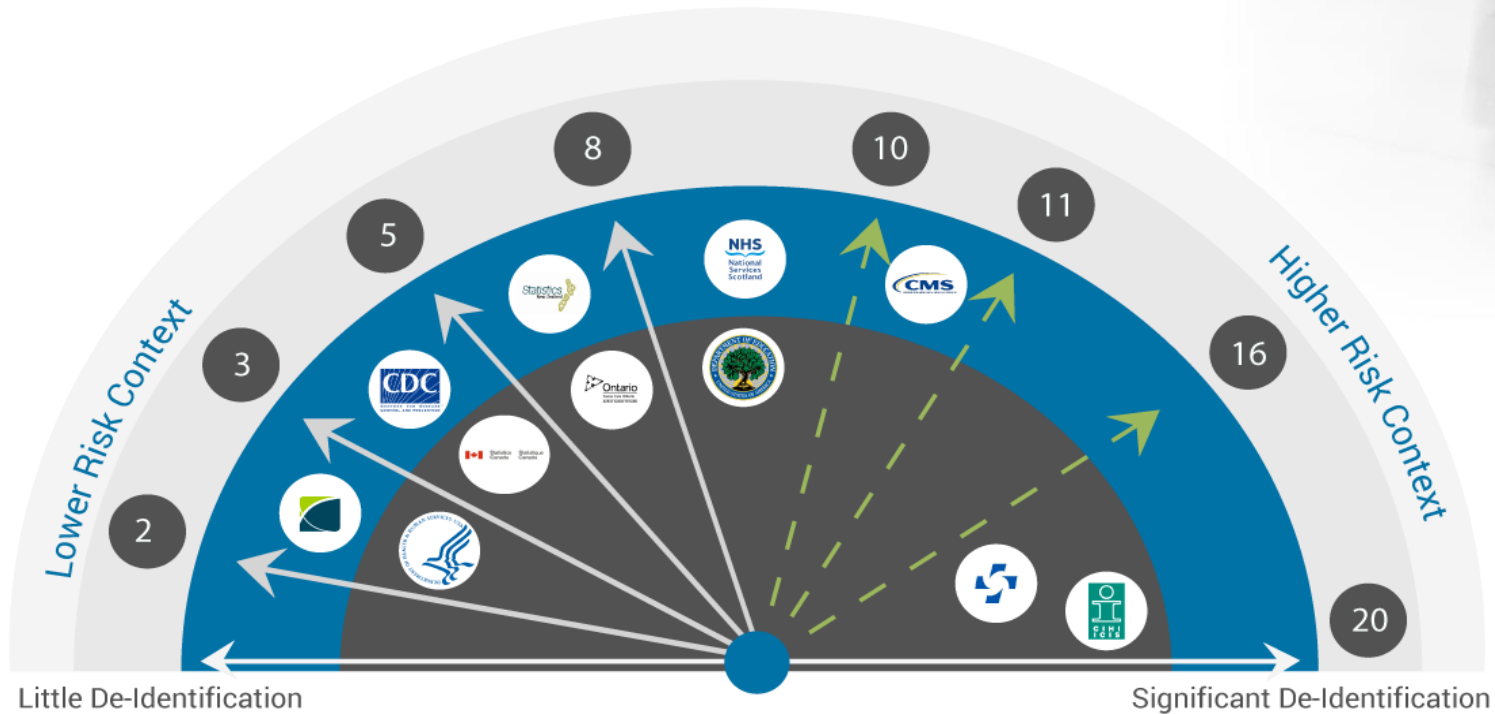
Current Data Protection Strategies

Percentage of respondents
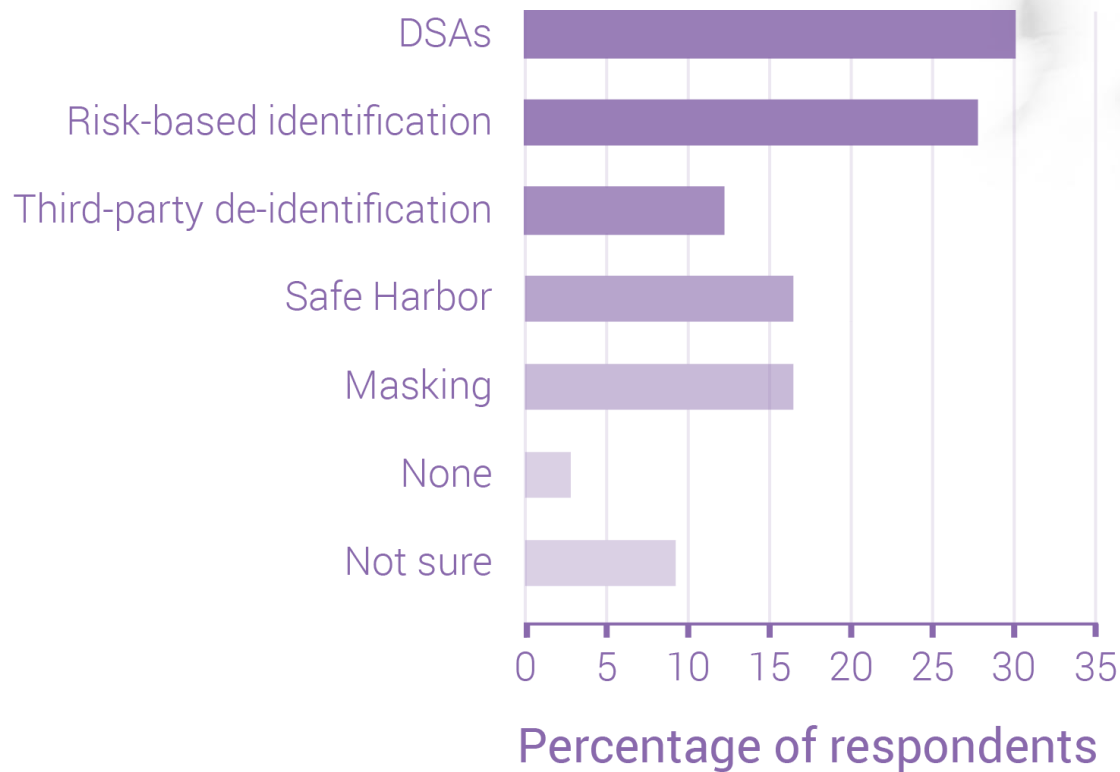
The Goal of De-identification

Identifiability Spectrum

How Risk-based De-identification Works

1. Set Risk Threshold

Based on the characteristics of the data (e.g. the data sensitivity) and precedents, a quantitative risk threshold is set.

2. Measure Risk

Appropriate metrics are selected and used to measure re-identification risk from the data and context.

4. Apply Transformations

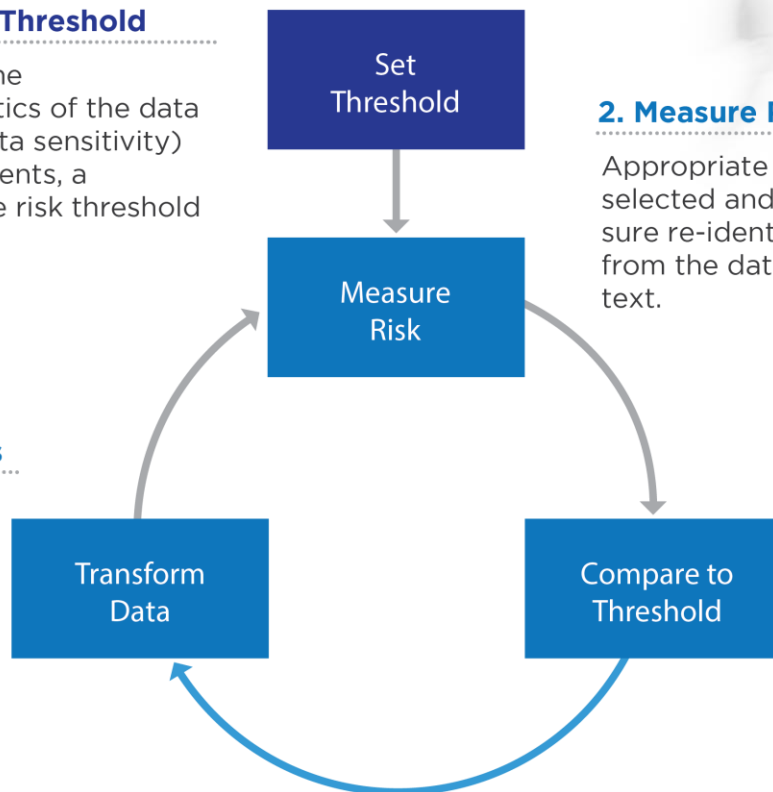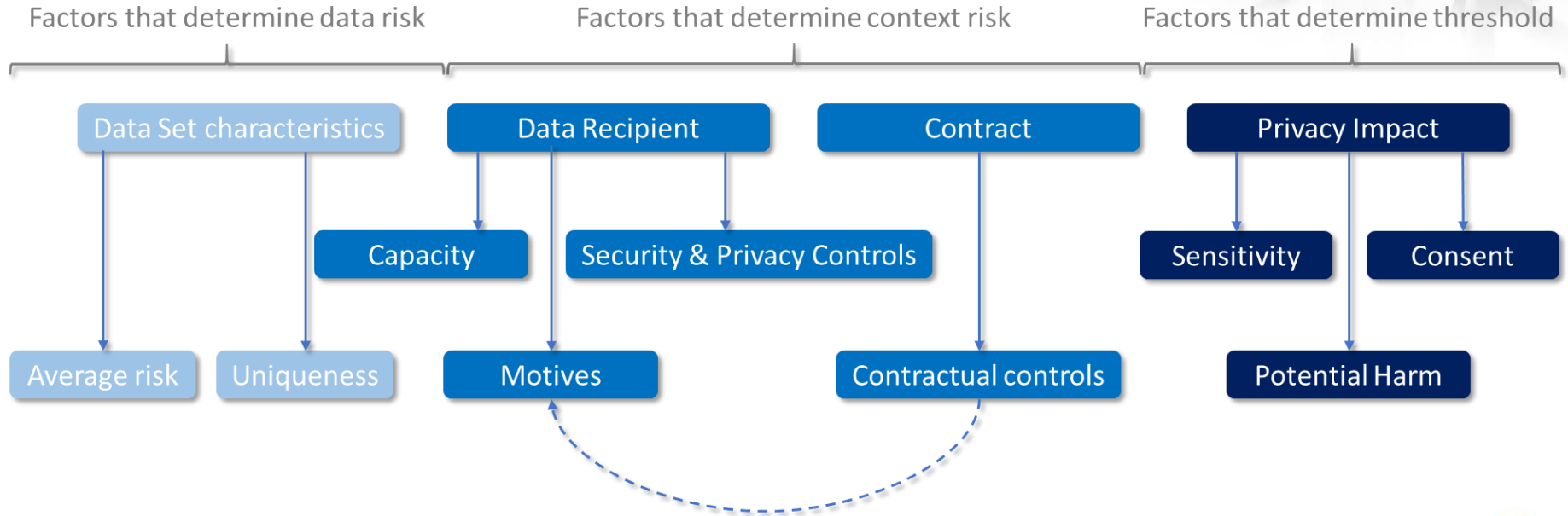If the measured risk is not below the threshold, specific transformations are applied for further de-identification of the data to reduce the risk below the threshold.

3. Compare to Threshold

The actual risk is measured and compared to the risk threshold.

Set Threshold

Measure Risk

Transform Data

Compare to Threshold

Factors To Consider

Factors that determine data risk | Factors that determine context risk | Factors that determine threshold

Data Set characteristics

Data Recipient

Contract

Privacy Impact

Capacity

Security & Privacy Controls

Sensitivity

Consent

Average risk

Uniqueness

Motives

Contractual controls

Potential Harm

Shifting Regulatory Environment

Risk-based Standards & Guidelines	Safe Harbor-based Standards & Guidelines
Institute of Medicine	TransCelerate
Council of Canadian Academies	
HITRUST	
PhUSE	
UK Information Commissioner's Office	
Canadian Institute for Health Information	
EMA Policy 0070	
Health and Human Services Office of Civil Rights (HIPAA)	
International Pharmaceutical Privacy Consortium	

Unlocking Data for Secondary Use

Enabling access to PHI for Analytics:

- Strengthen Security & Controls
- Strengthen DSA's
- Leverage automated and standardized de-identification methods

Questions

pbuffone@privacy-analytics.com

www.privacy-analytics.com

PRIVACY
ANALYTICS
NOW PART OF IMS HEALTH