

# RSA<sup>®</sup>Conference2019

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**BETTER.**

SESSION ID: GRC-T09

## We're Not in Kansas Anymore: Measuring the Impact of a Data Breach

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#RSAC



# How Breach Impact Has Been Measured in the Past



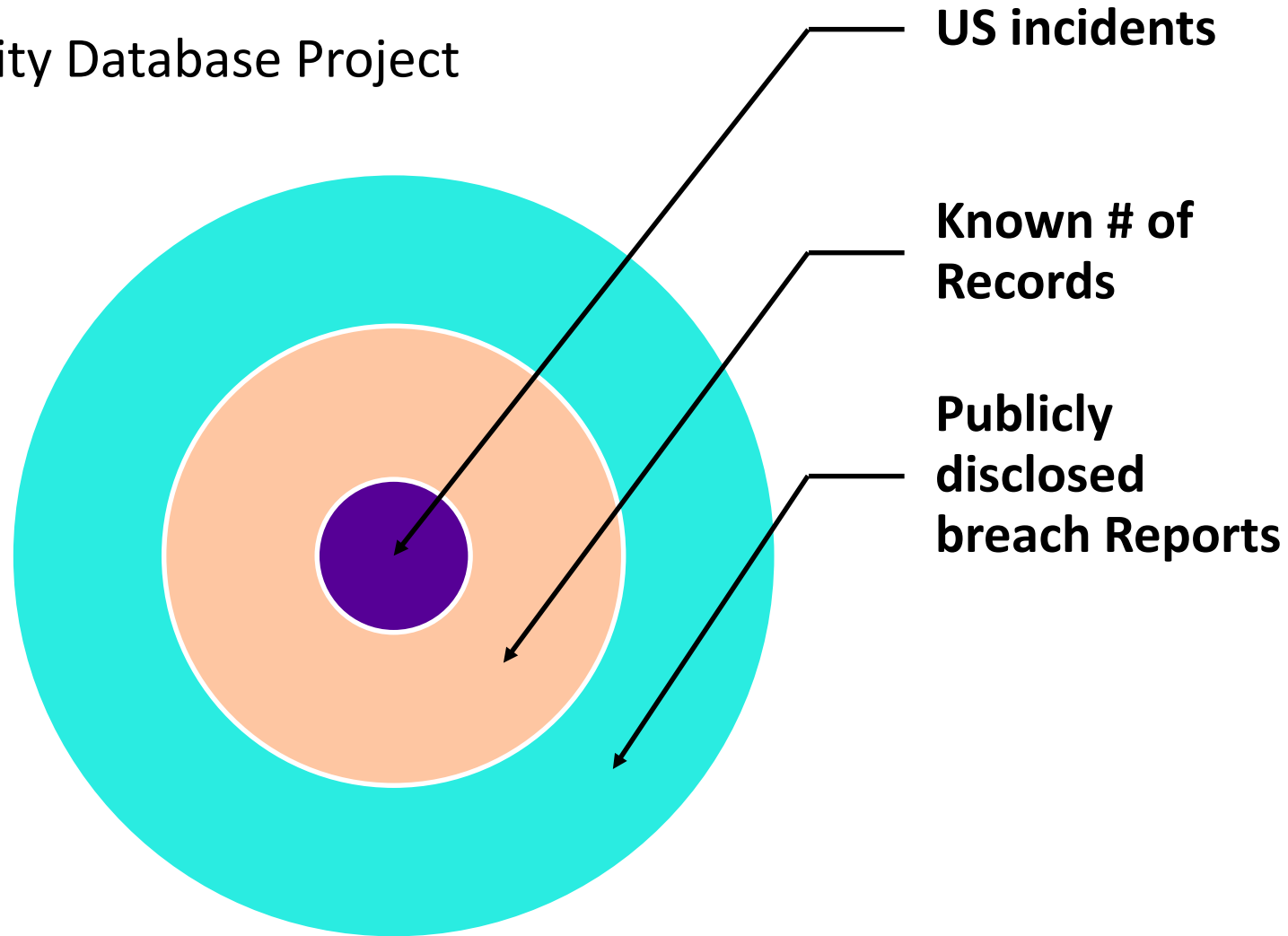
# How This Study Measures Impact





# Methodology

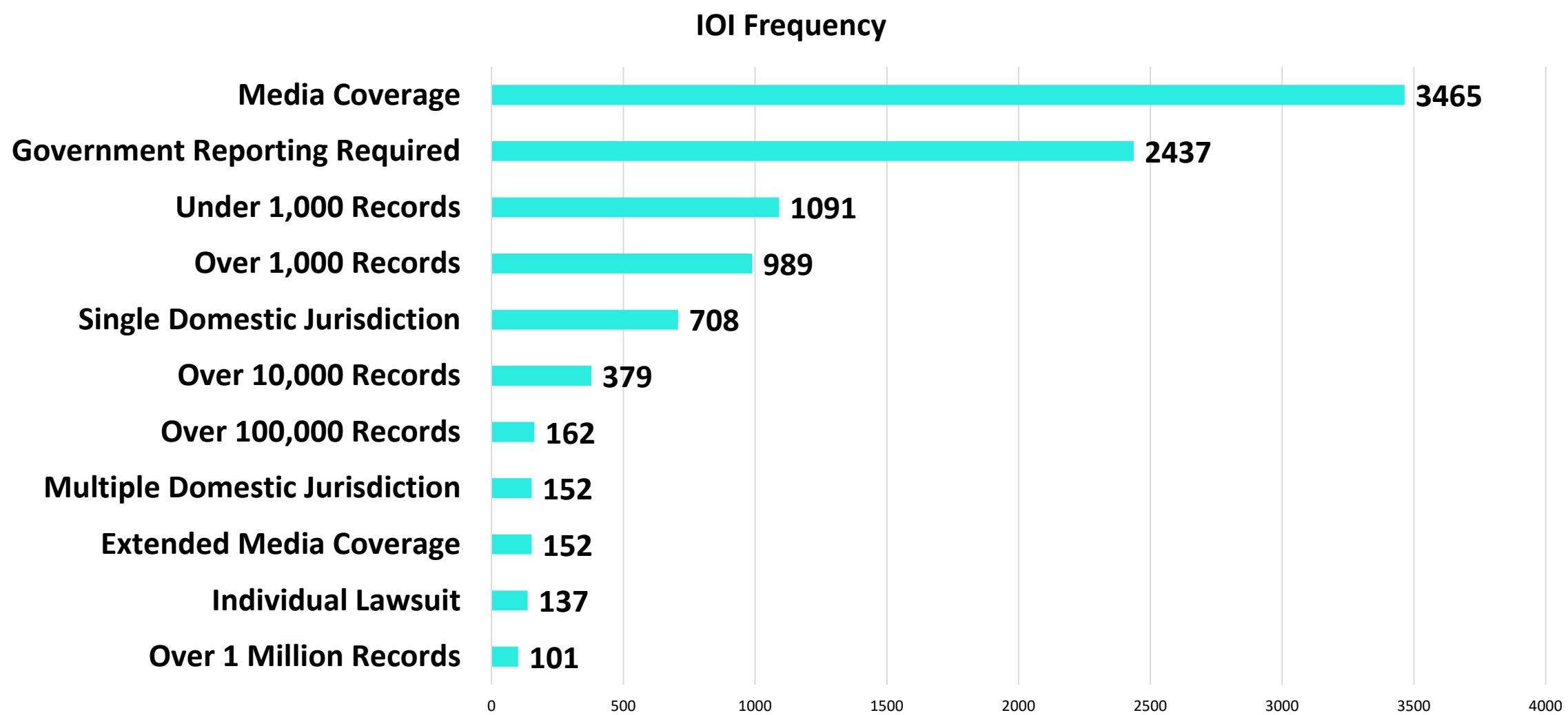
Data source:  
VERIS Community Database Project



# Indicators of Impact

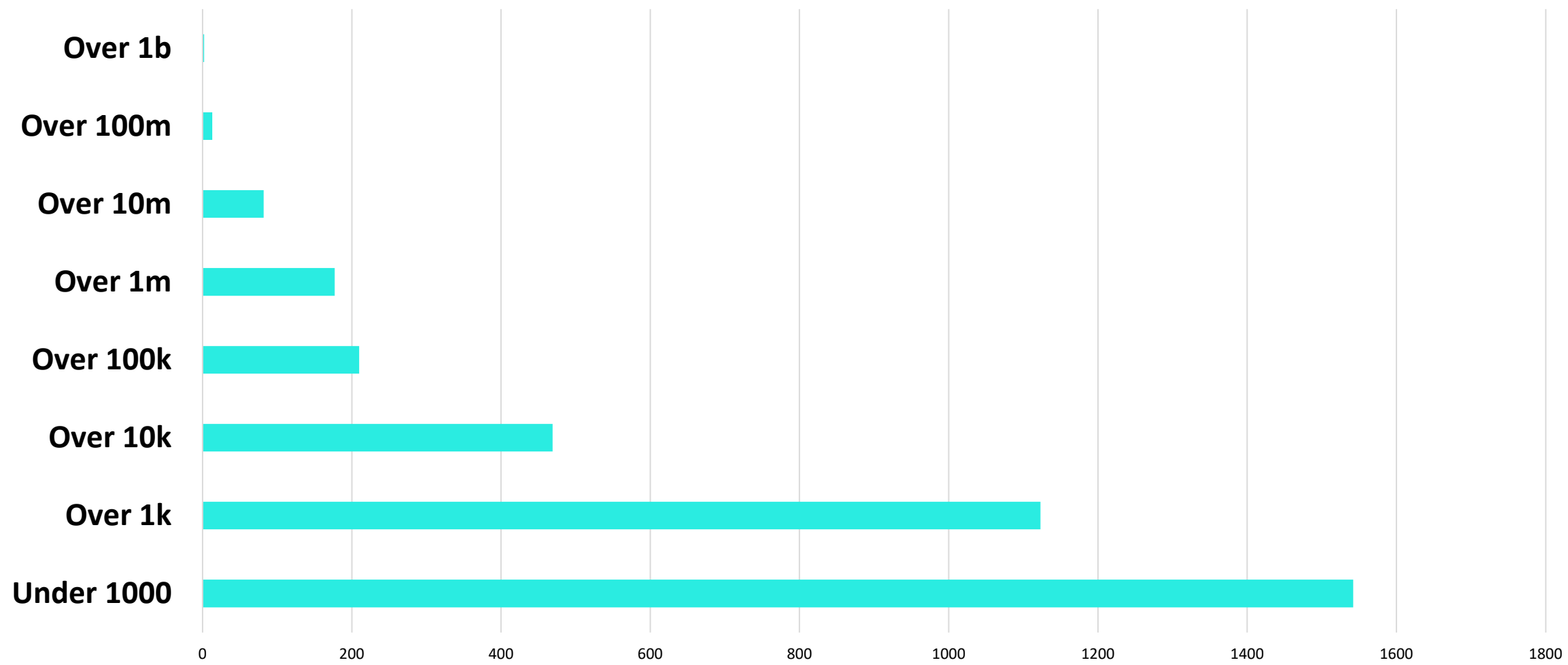


# Frequency of Indicators



# Distribution of Record Loss

Record Loss Size Distribution



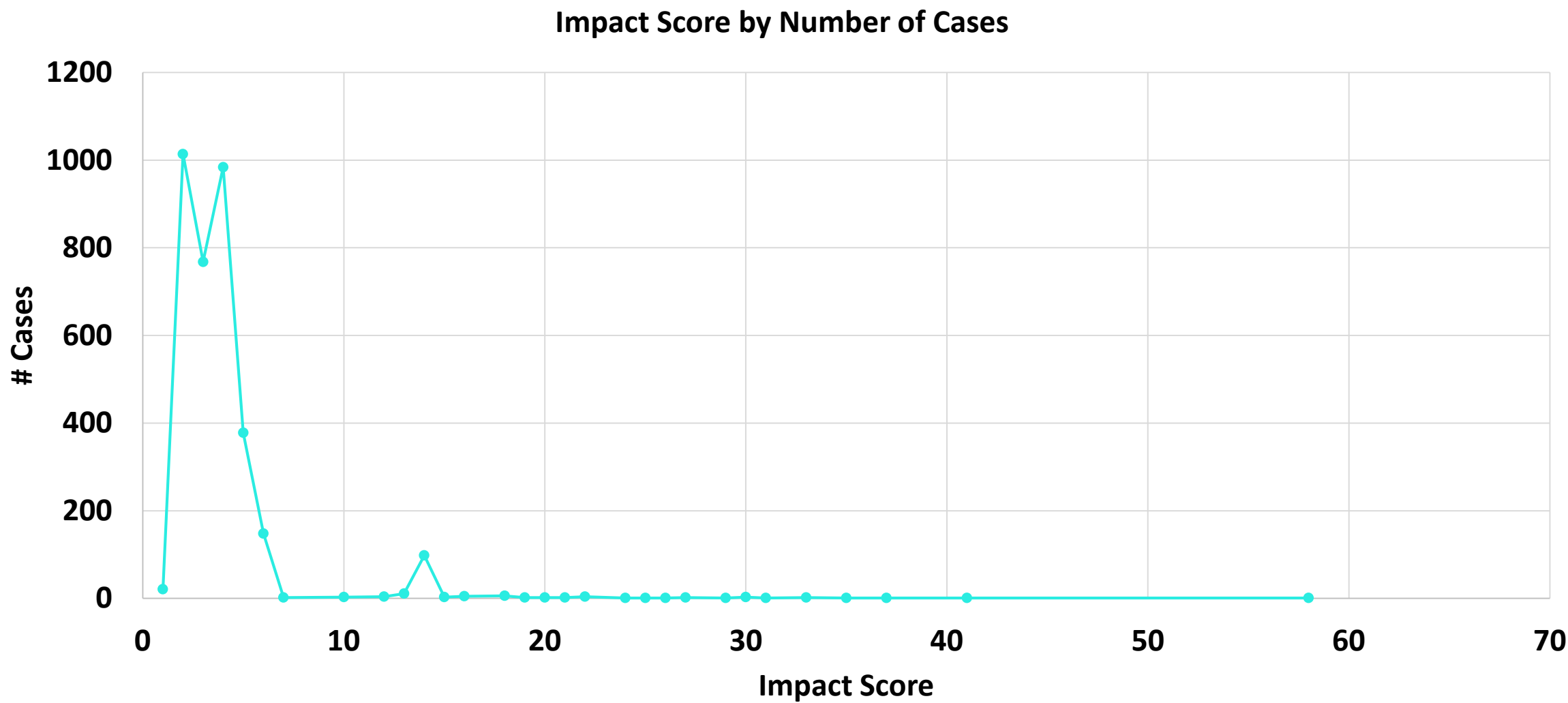


## Case Study #1

# **EQUIFAX** **DATA BREACH**



# Distribution of Impact Scores



# The Breach Impact Scale

ENHANCED FUJITA SCALE		DAMAGE
EF-0	(65-85 MPH)	LIGHT
EF-1	(86-110 MPH)	MODERATE
EF-2	(111-135 MPH)	CONSIDERABLE
EF-3	(136-165 MPH)	SEVERE
EF-4	(166-200 MPH)	DEVASTATING
EF-5	(200+ MPH)	INCREDIBLE

# Breach Impact Scale (1/3)

Scale Level	Score Range	Impact Description	Potential Characteristics
0	0-2	Light Impact	Minimal media attention; low number of data victims; data involved not highly valued.
1	2-5	Moderate Impact	Minimal media attention; over 1,000 data victims; data involved minimally monetizable.
2	5-7	Considerable Impact	Single jurisdiction for litigation; potential for legal settlements or regulatory fines; data involved lucrative for financial crimes; number of data victims under 1 million.



## Breach Impact Scale (2/3)

Scale Level	Score Range	Impact Description	Potential Characteristics
3	7-10	Severe Impact	Class action litigation in single jurisdiction; multiple domestic jurisdictions for individual litigation; enhanced media coverage; regulatory fines and legal settlements; number of data victims under 1 million; data disclosed may have been highly sensitive
4	11-15	Devastating Impact	Organization or partner extinction event for small organizations; bankruptcy protection may be sought for small orgs; class action litigation in multiple jurisdictions; international scope of breach; over 1,000,000 data victims.

# Breach Impact Scale (3/3)

Scale Level	Score Range	Impact Description	Potential Characteristics
5	16-30	Incredible Impact	Potential organization extinction event for medium sized organization; potential partner extinction event; significant resources for litigation; potential for new laws created affecting organization's industry.
6	31+	Inconceivable Impact	Potential organization extinction or near extinction event for large enterprise; significant disruption to normal operations; potential for new laws created affecting multiple industries.

## Case Study #2





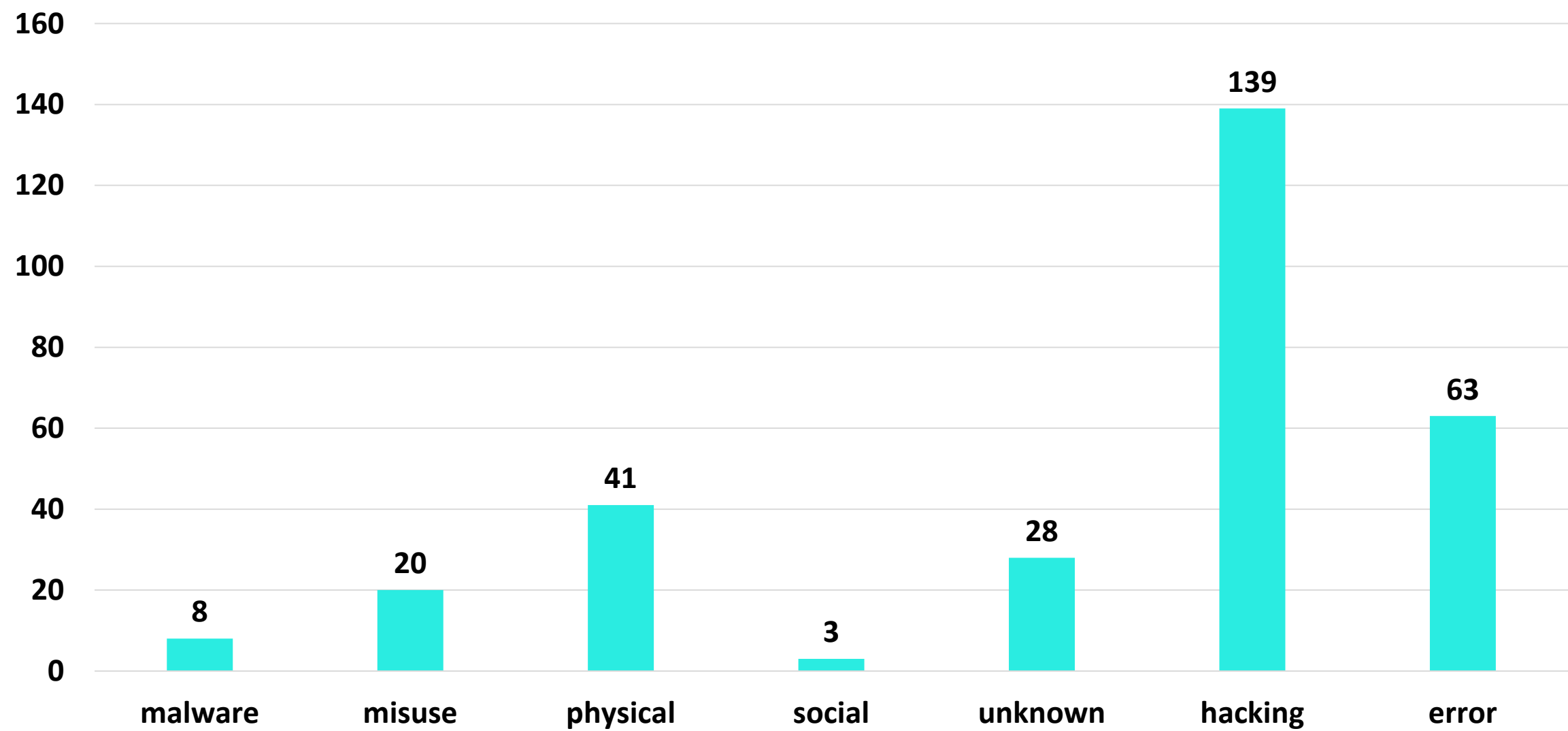
# Findings



TOM PENNINGTON/GETTY IMAGES

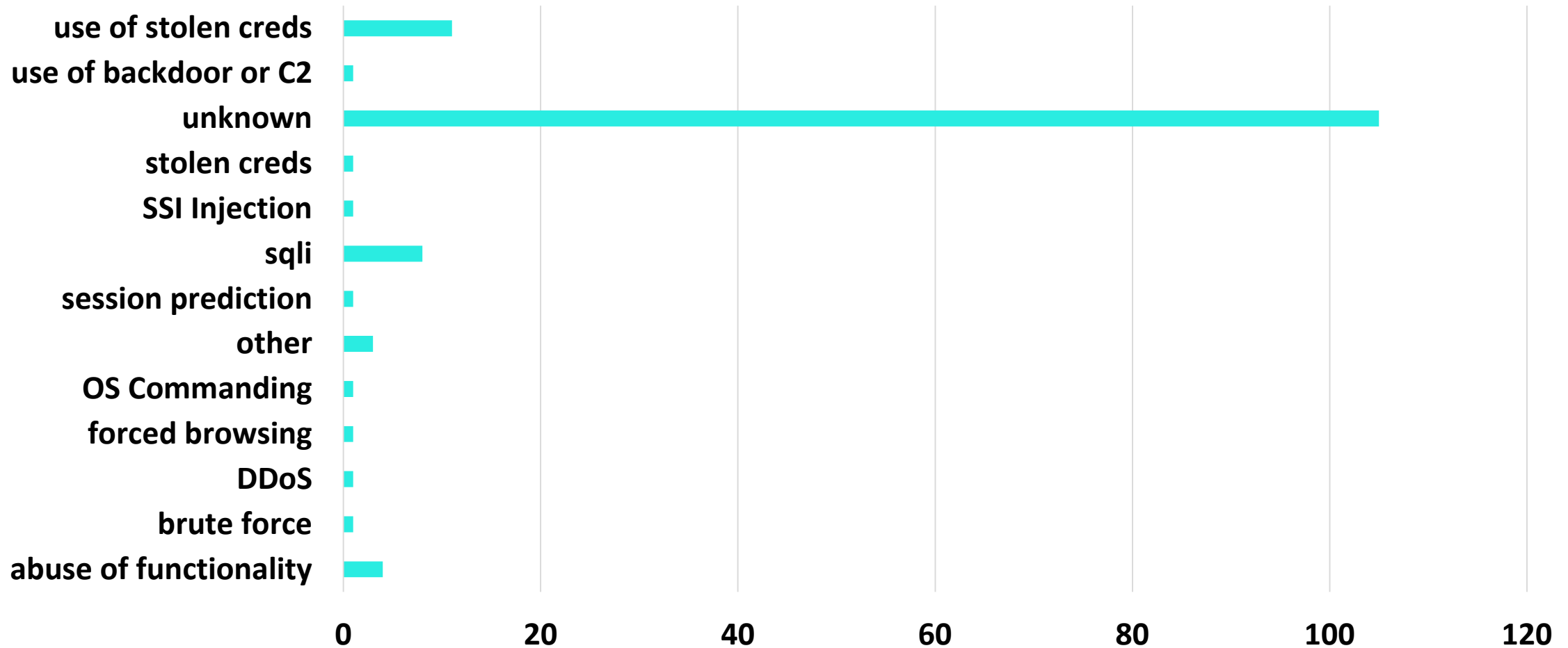


# High Impact Scores: Actions



# High Impact Scores: Hacking Distribution

Frequency of Hacking Varities





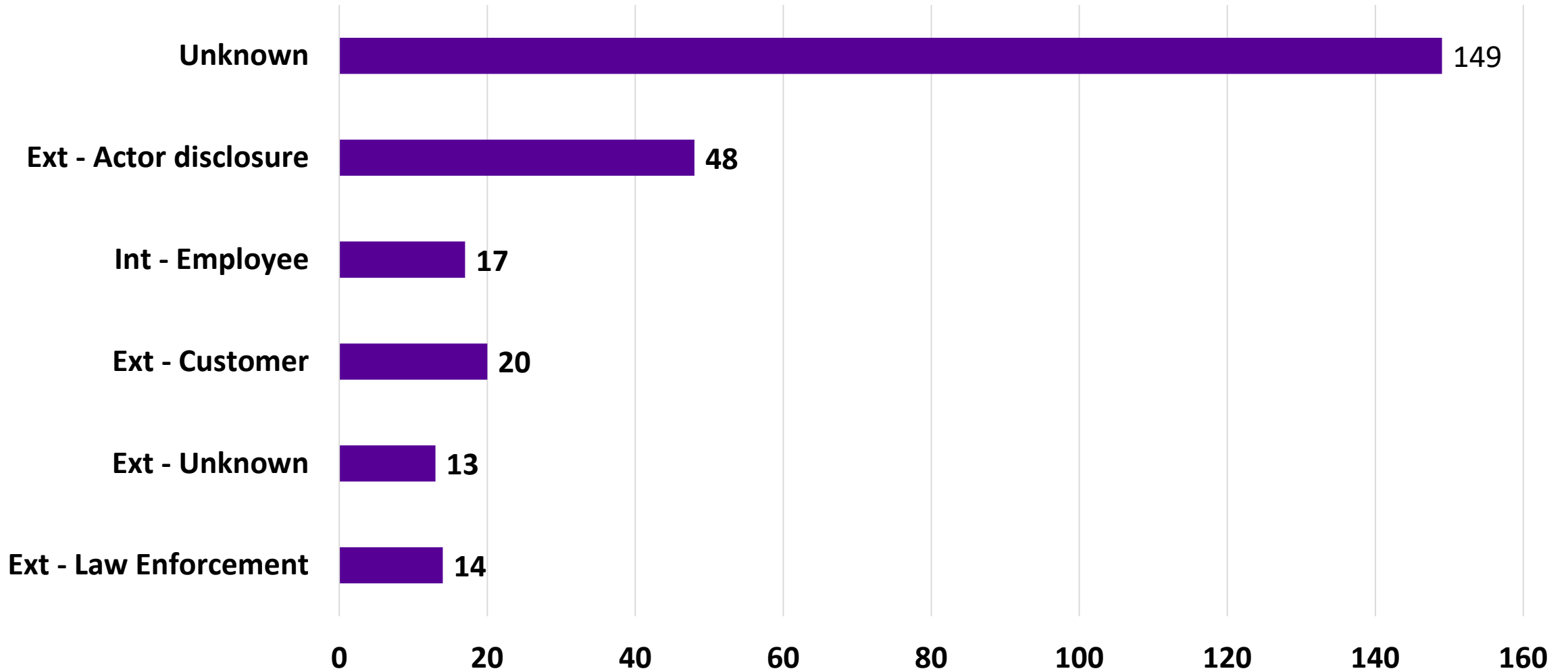
## Case Study #3

YAHOO!

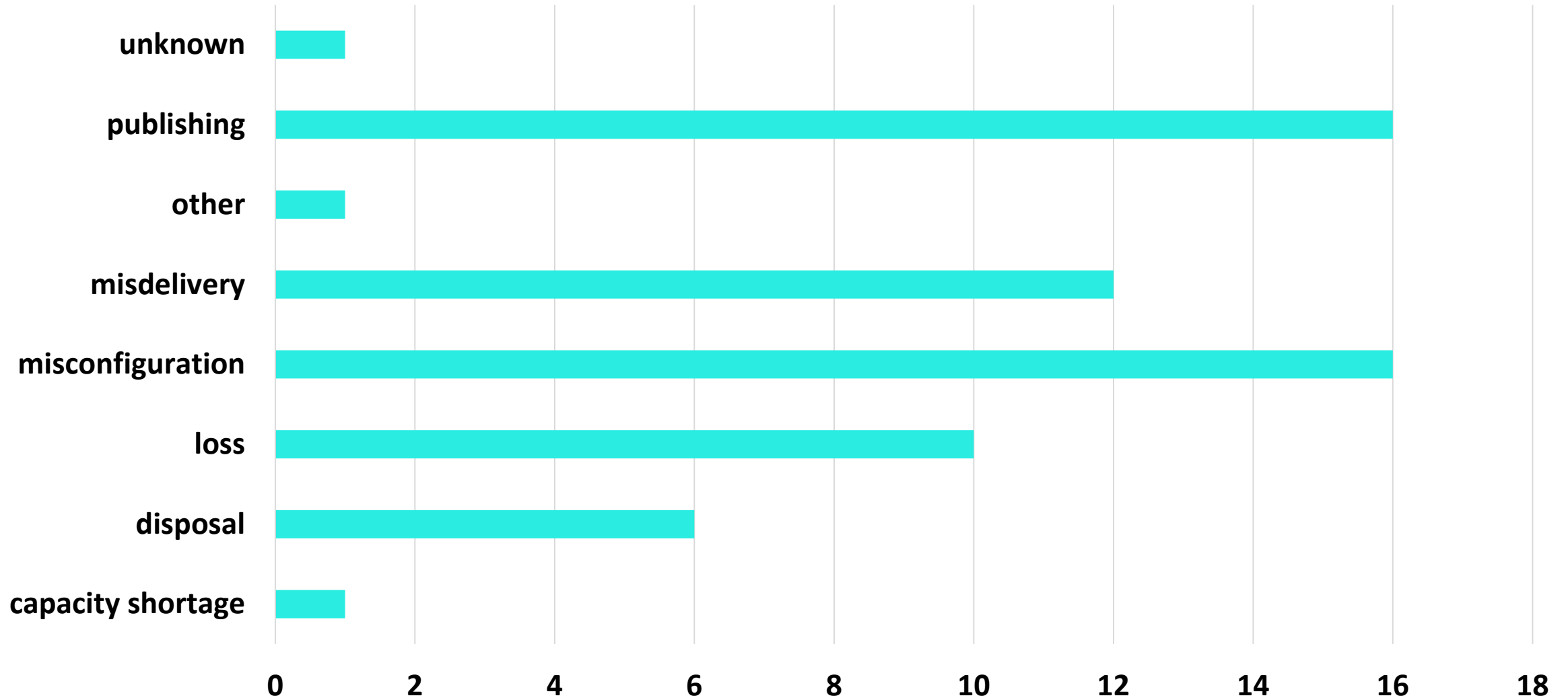
abc NEWS

**1 BILLION  
USER ACCOUNTS  
MAY HAVE BEEN  
COMPROMISED**

# High Impact Scores: Discovery Methods



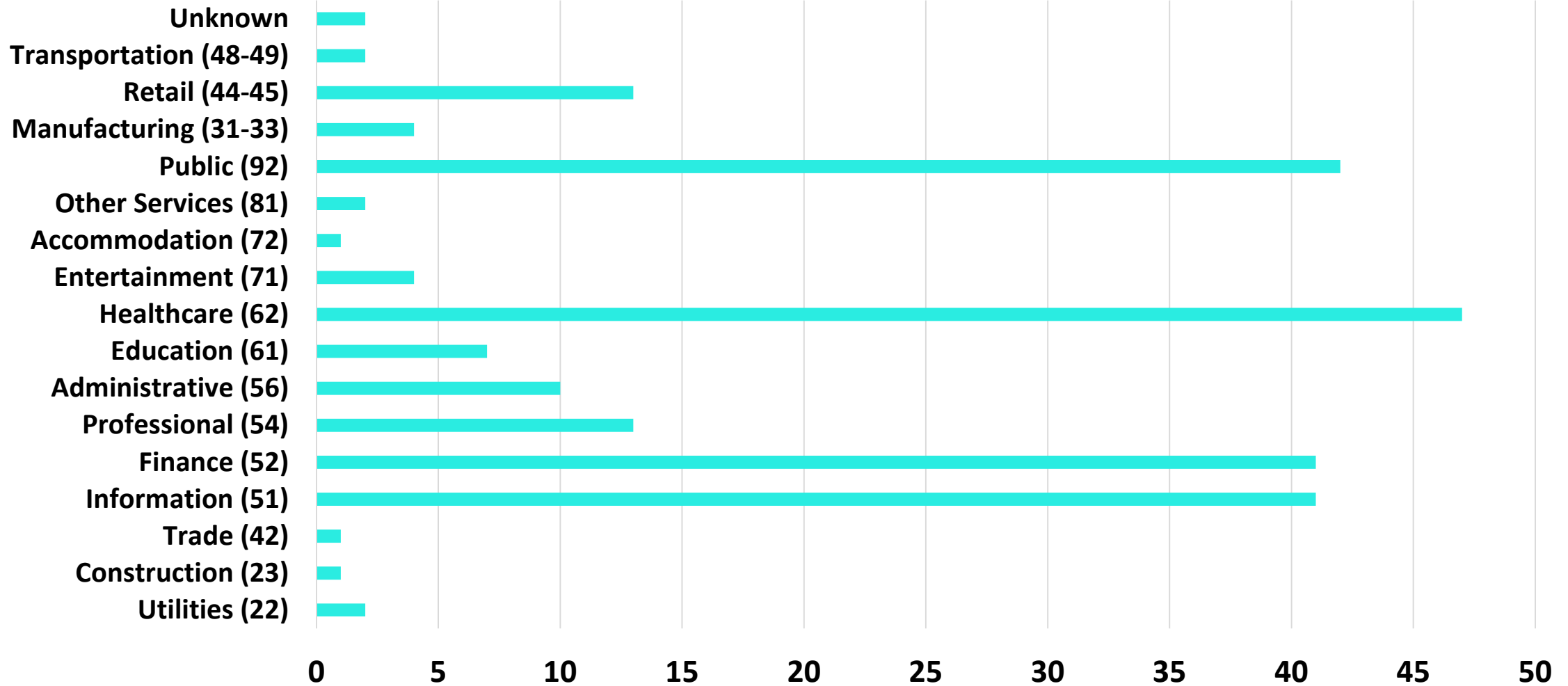
# High Impact Scores: Error Distribution





# High Impact Scores: Industries

Top Scored Industries



# Case Study #4

## LabMD

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# Apply What You Have Learned Today

- **How can you use this?**
  - How do you measure impact of breach risk in your organization?
  - How are these measurements communicated to management?
- **In the first three months following this presentation you should:**
  - Understand how your organization measures risk of breach
  - Determine which of these indicators apply to your situation
  - Include your findings in your management communications and evaluate how they can be used to better your security posture.



# Apply What You Have Learned Today

- **Within six months you should:**
  - Incorporate risk indicators into your IR planning
  - Determine if these indicators change your risk calculations
  - Expand your incident response planning to account for relevant new risks
  - Incorporate feedback from management about the communications you are providing and enhance as needed

# Considerations

- These cases take a long time for some of these indicators to surface.
- Some settlements are not publicized.
- This dataset is continuing to evolve.

# Future Research

- How to handle unknown number of records
- Look at international incidents (different legal framework)
- Refine/bring more rigor to weighting
- Can we use this to make a predictive model?



# Resources for More Information

- VERIS Community Database Project: <https://github.com/vz-risk/VCDB>
- Impact Scale Research Dataset: <https://github.com/swidup/Breach-Impact-Scale>
- Case Study json:
  - Equifax: 957d1a6c-de24-41d0-8d09-d72157da4848.json
  - Yahoo: 7DA7CEC9-4052-4878-8EFA-44673719DAC6.json
  - Marriott: 160bd508-2d5d-435b-9e12-c58dd028ba6e.json
  - LabMD: 1F7FBF08-8CE3-4C08-A274-E62C7A07ED80.json

# Questions?

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  - Twitter: @VERISDB for running data breach feed as I find them