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## Biometrics and Identity Management in Healthcare Applications

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### Introduction

The healthcare environment has additional regulations relating to the access of confidential medical records. This research will examine the use of biometrics to enhance the authentication in the healthcare environment while preserving privacy

### Identity Management Requirements

- Applying identity management categories to a healthcare scenario to account for requirements of patients, physicians, and healthcare providers
- Authentication via biometrics must be reliable and consistent
- Must take into account the work environment such as lighting, personal protective equipment, and hand washing requirements to investigate the performance of each system

### Identity Management Framework

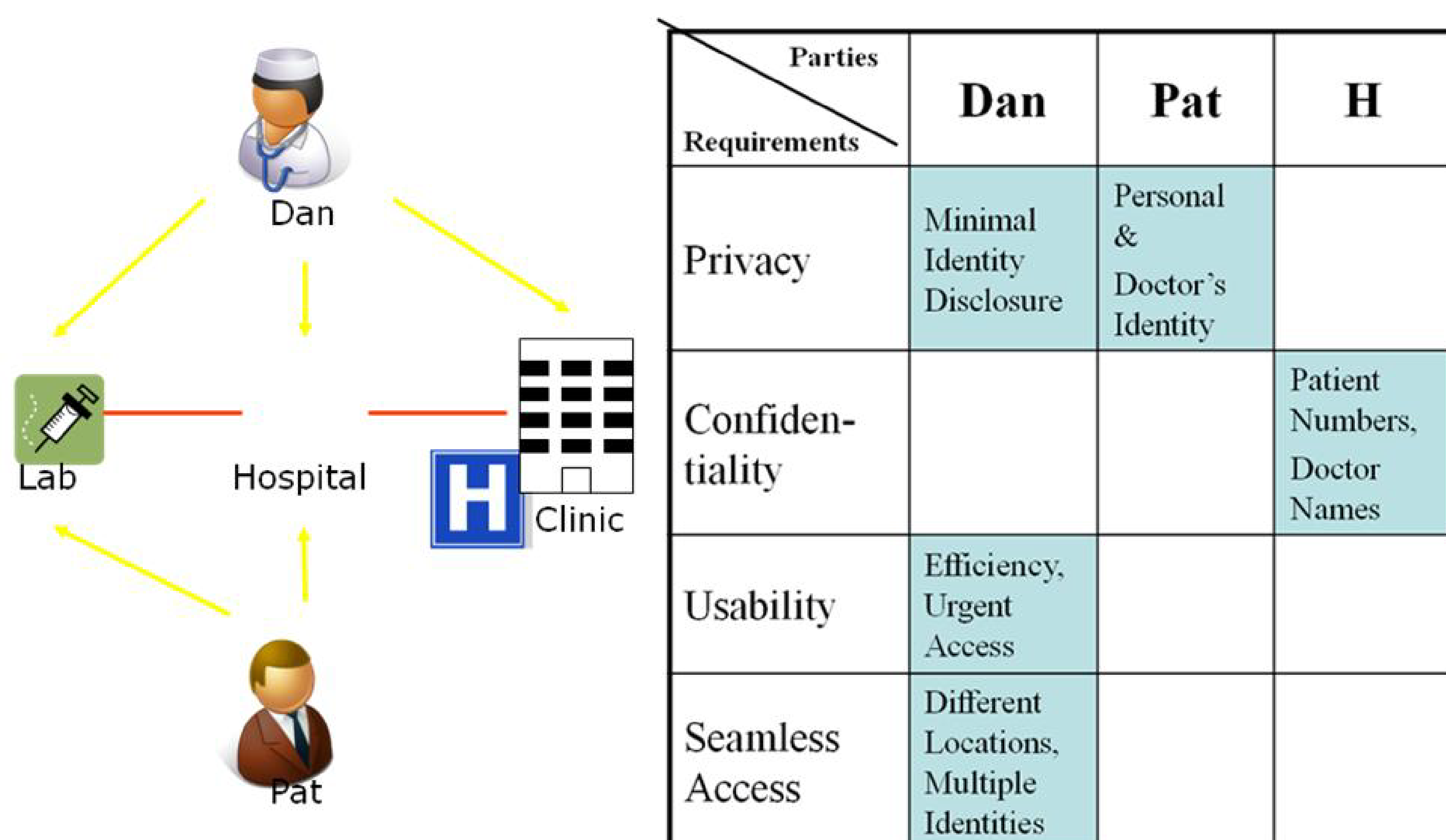


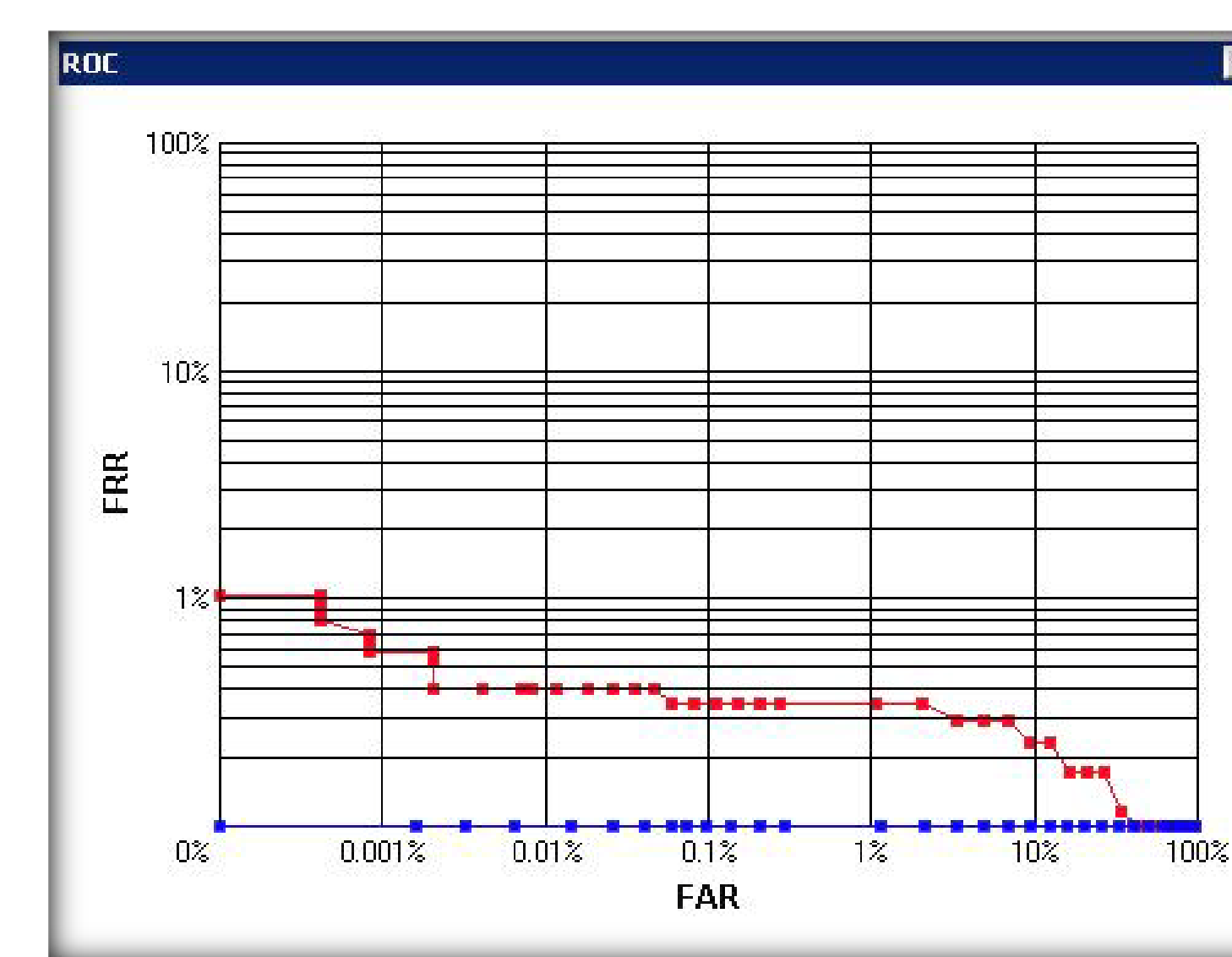
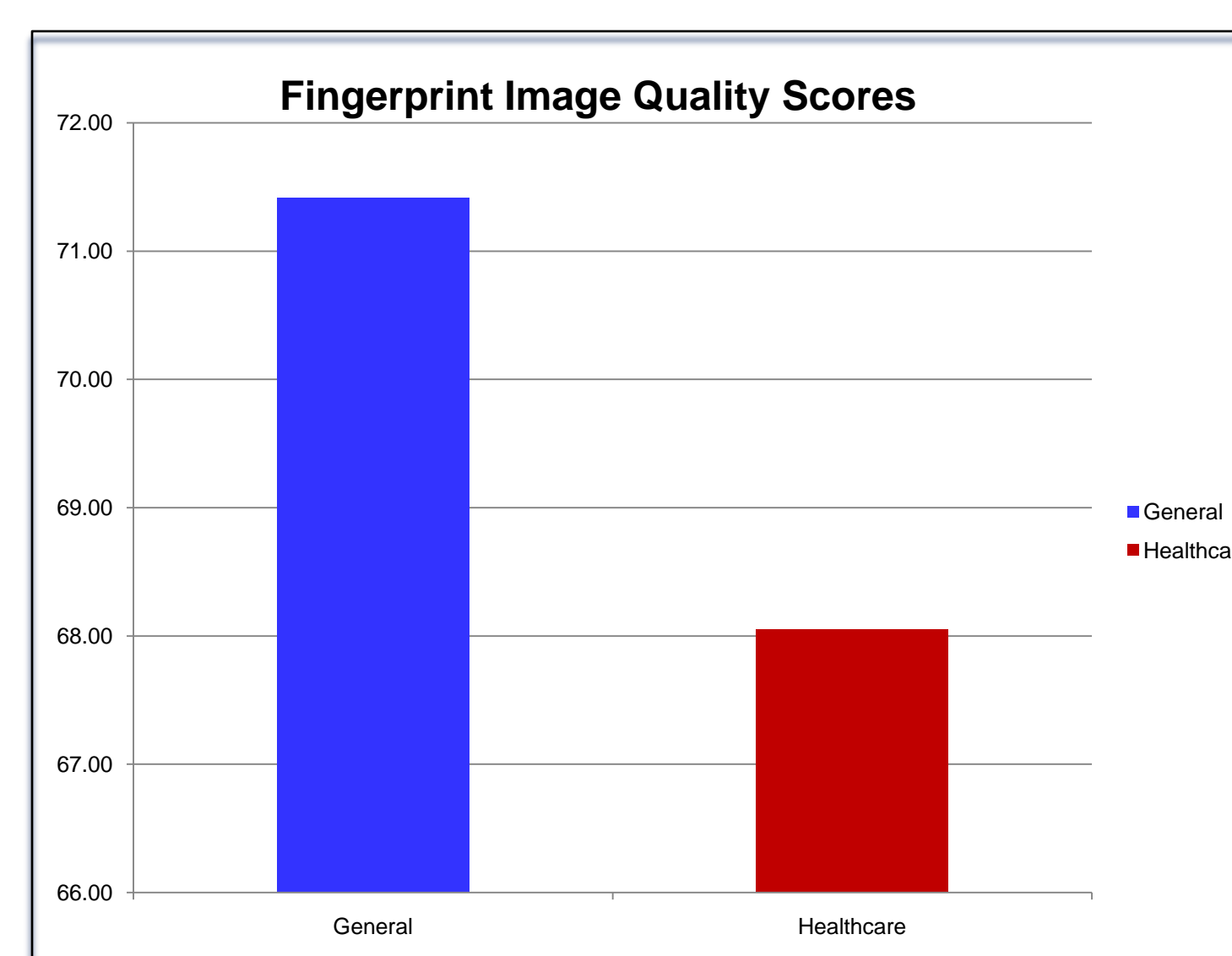
Figure 1: VeryIDX model applied to a healthcare scenario

### Operational Requirements

- Physicians often practice in clinics as well as in hospitals
- Research interoperability of sensors for multiple location authentication
- Within the healthcare environment there are concerns about the hygienic use of devices
- Determine the fit of biometric devices into the normal work-flow of healthcare professionals

### Preliminary Results

- Comparison of skin characteristics, fingerprint image quality, and matching performance between 30 nurses involved with patient care and 30 individuals from the general population
- Skin characteristics such as moisture, oiliness, and skin elasticity nor fingerprint image quality were not found to be statistically different between the two populations
- Matching performance was found to be statistically different between the two populations



Red = Healthcare Blue = General

### Future Work

- Analyze different biometric technologies for specific operations
- Examine usability issues of biometrics in healthcare environment