The importance of a secure identity in healthcare

Modern solutions for the healthcare ecosystem

〈〈｜〉〉 IDEMIA

Contents

1) A unique identity for citizens and healthcare professionals

Governments have the responsibility to provide healthcare services to all citizens. Yet, 3.5 billion people worldwide do not have access to fundamental healthcare. It is therefore crucial to establish an efficient public healthcare infrastructure to ensure that no one is left out.

In a context where the pandemic has accelerated the digitization of the healthcare sector, it is critical **to protect the highly sensitive health data of citizens.** One way to do this is by providing a **secure health eID** to citizens and healthcare professionals, such as doctors in private offices and/or in hospitals/clinics, other hospital staff, pharmacists, and laboratory personnel.

This secure health ID should be **unique to each person** and valid at all times so that it can be used in all health-related situations. Duplication of identities across several health databases must be avoided to increase efficiency of citizen management and treatment. This will enable health records to be aggregated, allowing each stakeholder to **trust the data** that is shared, improving data collection while protecting citizen privacy. It will also reduce administrative tasks for both citizens and healthcare professionals.

Providing unique secure access to healthcare infrastructure and services have significant benefits for governments, citizens and healthcare professionals.
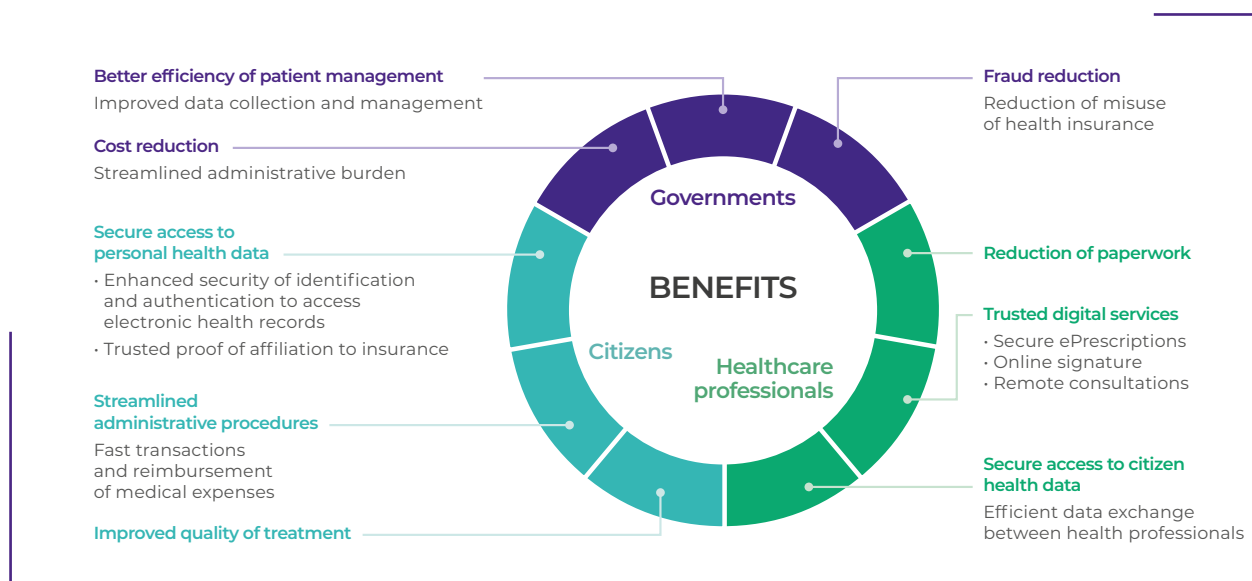
Key figures

3.5 billion people[1]

worldwide do not have access to essential health services

53% of countries[2]

around the world do not have an electronic Health Record (eHR) system

Better efficiency of patient management
Improved data collection and management

Cost reduction
Streamlined administrative burden

Secure access to personal health data
· Enhanced security of identification and authentication to access electronic health records
· Trusted proof of affiliation to insurance

Streamlined administrative procedures
Fast transactions and reimbursement of medical expenses

Improved quality of treatment

Fraud reduction
Reduction of misuse of health insurance

Reduction of paperwork

Trusted digital services
· Secure ePrescriptions
· Online signature
· Remote consultations

Secure access to citizen health data
Efficient data exchange between health professionals

BENEFITS

Governments

Citizens

Healthcare professionals

[1] Source: World Bank 2017
[2] Source: WHO 2016

2 > How to prevent fraud in healthcare

Today, identity theft not only concerns financial transactions but also the healthcare sector. Cyberattacks against healthcare organizations are snowballing. A criminal can use the health identity data of a person (social security number, medical number or health insurance number) to request prescriptions, receive medical care, and/or commit health insurance fraud. Once a health ID has been fraudulently retrieved, it can be used and sold on the dark web.

The rise of medical identity theft coincides with the increasing cost of medical treatments, the proliferation of health insurance as well as the increasing value of medical mega data.

Key figures

83% of US healthcare organizations[3]

experienced an increase in cyberattacks in 2019

Biometric technology, efficient protection against health identity fraud

To limit fraud, the process of creating an identity for a citizen or healthcare professional should follow the same security protocol as that of a national identity document.

A multi-layered approach that includes **biometric authentication** to access healthcare infrastructures is highly advisable. Biometrics such as face and fingerprint verification prevent identity theft and make large-scale theft very difficult.

Biometrics can be used in different formats. The citizen or healthcare professional can authenticate against a health database:
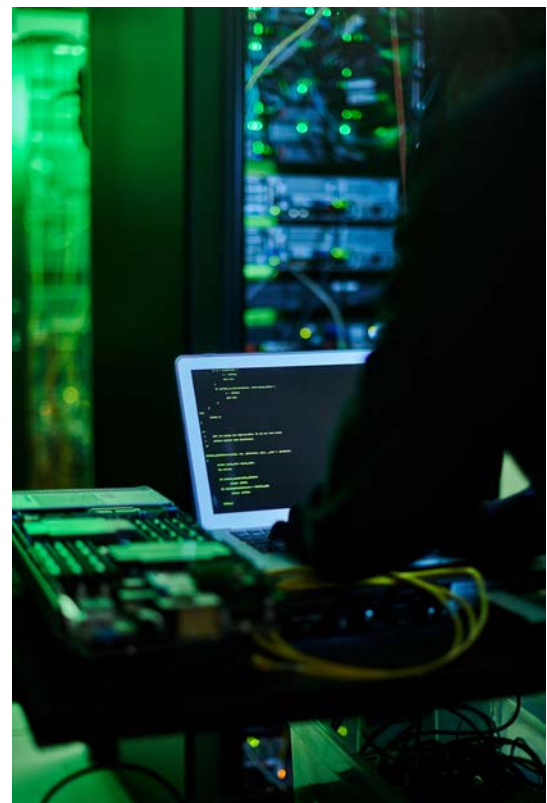
· Using the **health eID card** card with biometrics in the chip

· Using a **mobile health application** or **digital wallet** with biometric authentication (face or fingerprint)
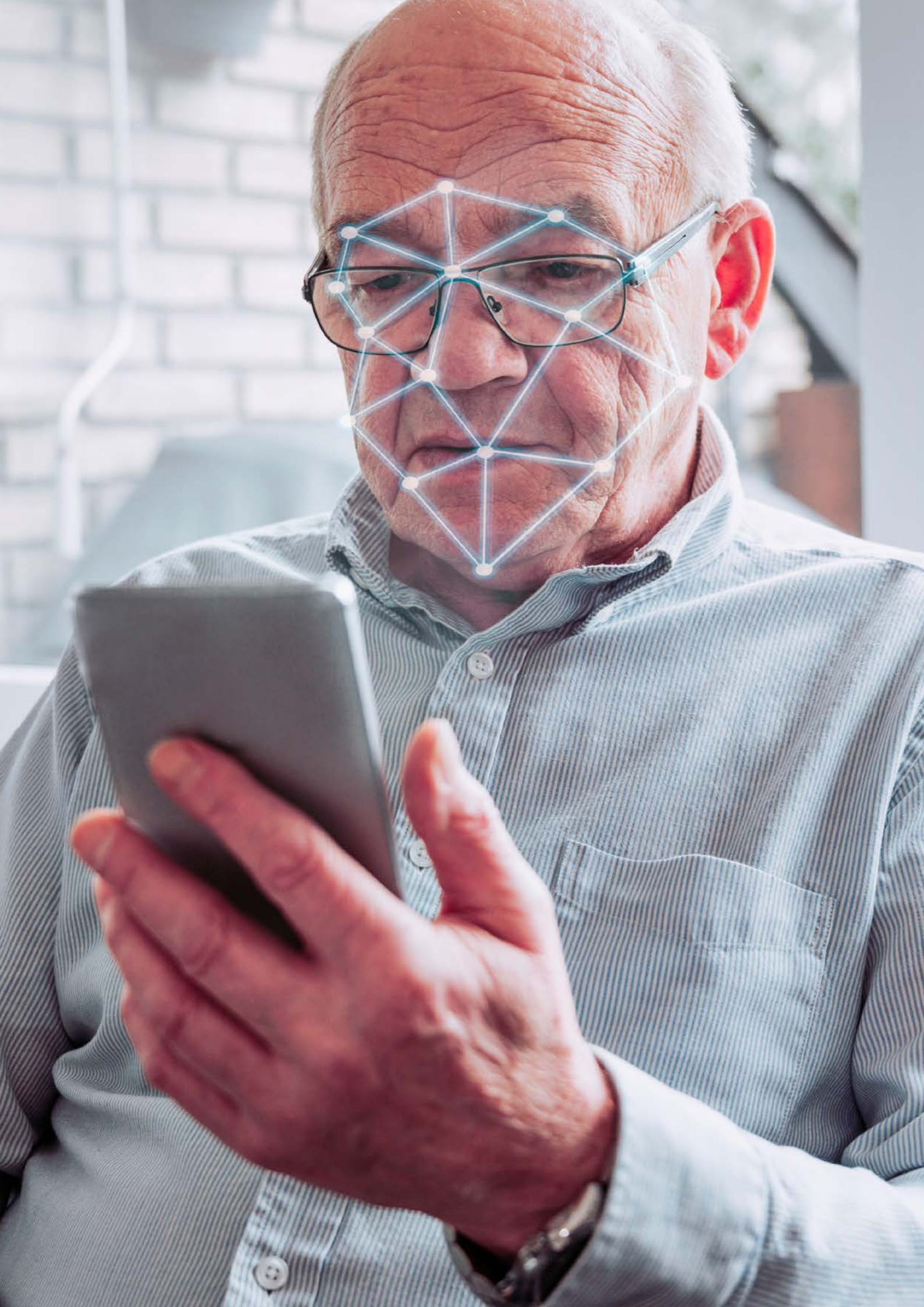

[3] Sources: Global Market Insights – Telemedicine Market Report | 2020-2026, American Hospital Association, 2019, HIPAA Journal, American Telemedicine Association

3 › End-to-end health identity solutions

When governments have a legacy healthcare infrastructure, they can digitize their entire system with the help of a trusted partner. IDEMIA provides secure end-to-end solutions to support the Ministries of Health and national or private health insurers in their digital transformation.

IDEMIA secures access to critical health data across the various endpoints such as doctor's offices, hospital admission desks, vaccination centers and many more. IDEMIA's identity solutions for the healthcare sector enable trusted communication and operations such as payments, reimbursements and data exchange between all stakeholders. By securing access to healthcare infrastructures, governments can efficiently fight against fraud.

Our global health ID solutions are flexible and can be tailored to match every client's needs.

Enrollment of citizens and creation of health identity databases	Issuance of health ID cards	Mobile health app or digital ID wallet derivation

IDEMIA offers solutions to register reliable biographical information and optional high-quality multibiometric data (fingerprints, face and iris).

Citizens can also enroll using a health mobile app with their ID document and biometric verification.

IDEMIA creates a health identity database with modular features based on the client's needs.

IDEMIA produces and personalizes tailor-made health cards:

• Material (PVC, PET, polycarbonate)

• Secure Operating System (OS)

• In-house developed apps

• Color or black and white photos

• Security features

IDEMIA operates a large network of personalization and issuance centers worldwide to ensure a local presence.

Health cards can be dematerialized in smartphones, either via a stand-alone health app or in a digital wallet.

The app / digital wallet:

• Allows the use and storage of health data and other attributes which are under the control of the owner

• Is based on common standards such as ISO 18013–5 or the new EU digital wallet

• Can offer the following features:

  - Multifactor authentication

  - Selective attribute sharing

  - Digital signature

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A STRESS-FREE HEALTHCARE EXPERIENCE

3 **Electronic Health Records (EHR) compliant with data privacy**

The doctor uses her professional health eID card to access the patient's file. She adds Katia's examination results to the patient's medical file, which is part of the secure Electronic Health Records (EHR). Only health professionals are able to access a patient's medical records, in compliance with data privacy.
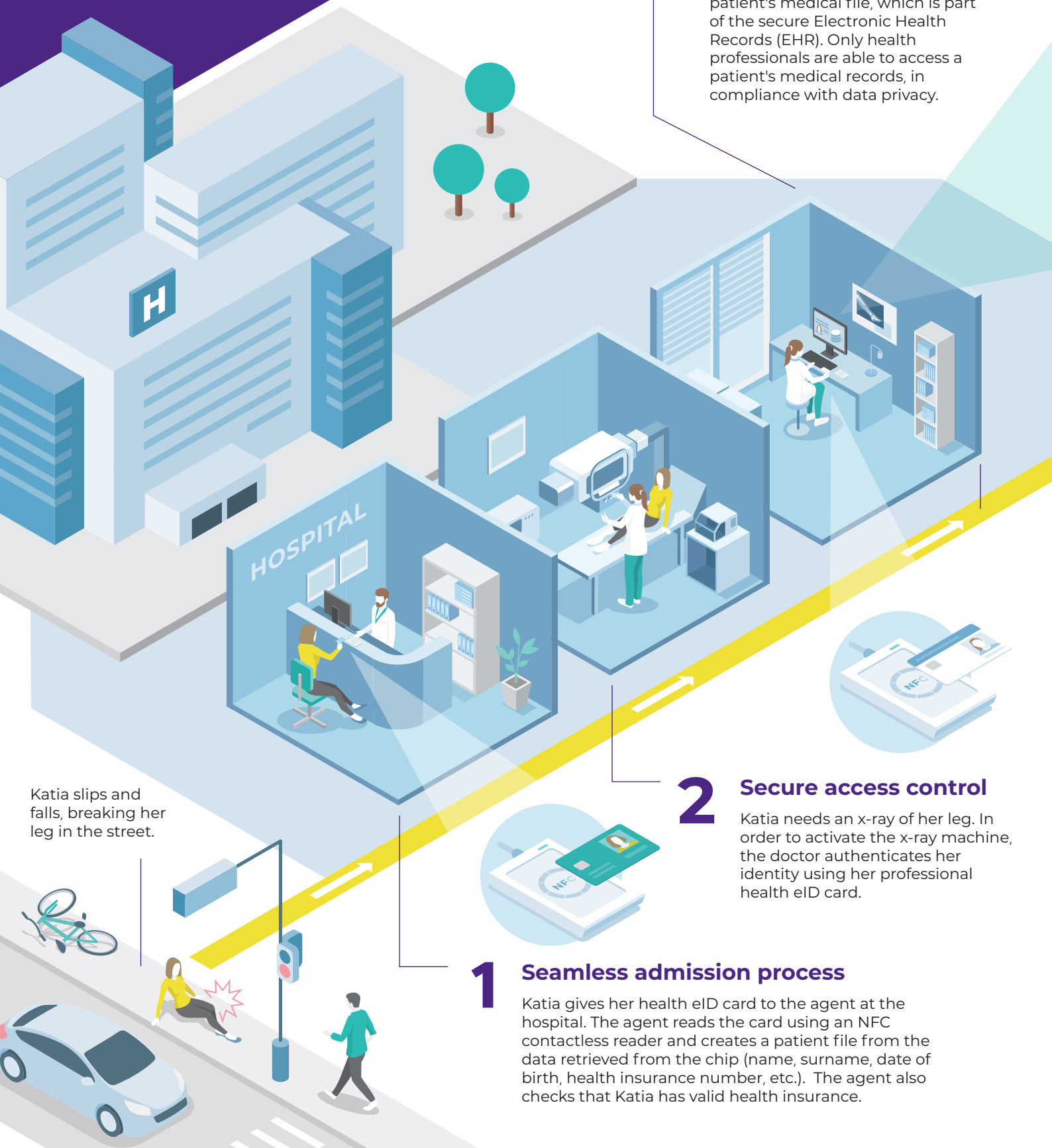
Katia slips and falls, breaking her leg in the street.

2 **Secure access control**

Katia needs an x-ray of her leg. In order to activate the x-ray machine, the doctor authenticates her identity using her professional health eID card.

1 **Seamless admission process**

Katia gives her health eID card to the agent at the hospital. The agent reads the card using an NFC contactless reader and creates a patient file from the data retrieved from the chip (name, surname, date of birth, health insurance number, etc.). The agent also checks that Katia has valid health insurance.

4 ePrescription using digital signature

The doctor prescribes medication for Katia. She signs the ePrescription digitally using her professional health eID card. This guarantees the authenticity of the prescription and helps eliminate fraud.

5 In-person authentication

To get her medicine, Katia presents her health eID card to the pharmacist, who inserts it into a reader. The pharmacist verifies Katia's identity, retrieves her ePrescription and hands her the medication.
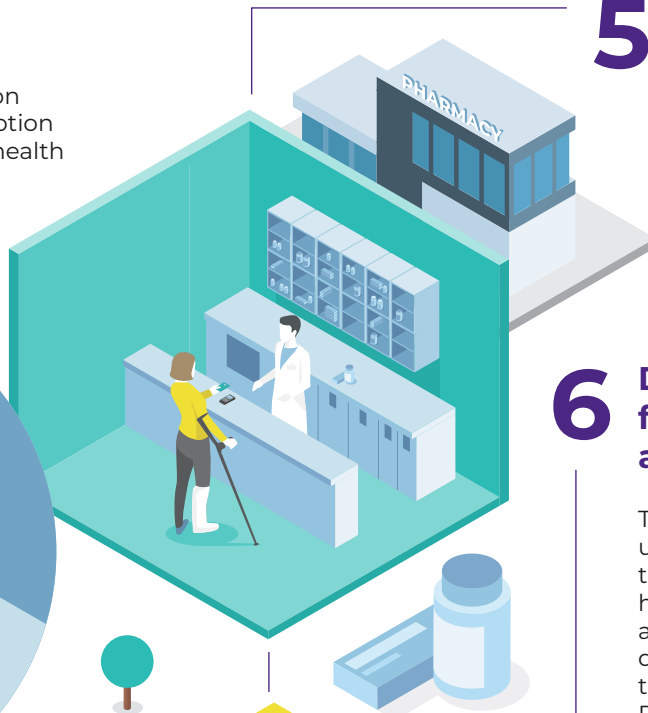
6 Digital onboarding for safe remote authentication

To create her digital health ID, Katia uses her smartphone's NFC to read the attributes stored in the chip of her health eID card. She then takes a selfie to complete the liveness detection test to prove that she is the lawful holder of the document. Done! She has successfully created her digital health identity! She can use it to prove her identity remotely and in person.
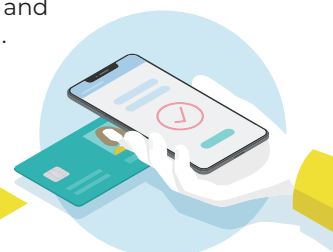
7 Telemedicine consultation

A week later, Katia uses the telemedicine portal for her online appointment. She uses her digital health identity to authenticate her identity to connect to the portal.

Before starting the consultation, the doctor authenticates her professional identity using an app on her smartphone. If needed, she can fill in and sign an additional prescription in the electronic health portal, using her digital health ID.

8 Streamlined healthcare infrastructures

Thanks to the secure health identity infrastructure, communication between the various public and private healthcare entities was efficient. Katia's experience has been stress-free. She did not need to worry about administrative paperwork. Her healthcare expenses were paid directly by her health insurance, so she did not need to dip into her savings for her medical treatment.

5 〉Health ID Card

A health ID card, whether it is for citizens or healthcare professionals, must guarantee secure identification, enabling the lawful cardholder to access healthcare eServices. IDEMIA produces and personalizes tamper-proof health ID cards. We support our clients by providing the most secure solutions that are tailored to their needs:

Material:

› PVC, PET or polycarbonate to reach the highest lifetime of the document

Logical security:

› Chip: contact, dual or contactless interface – certified EAL6+

› Operating System: Java Card OpenPlatform, guaranteeing interoperability and flexibility including high cryptographic features – certified EAL5+

› Application: development of tailor-made applications to secure the data of citizens and healthcare professionals

Data privacy:

› The chip ensures secure encryption of private medical data. Only the insured person is able to authorize what information is stored or used by each stakeholder

Card design:

› Graphical design tailor-made to client's requirements ensuring optimum security of the health card

IDEMIA has a large network of service centers around the world available for our clients to enable local personalization and the management of the production flow.

6 〉 Digital Health Identity

IDEMIA extends the physical health ID card offering to digital solutions, supporting the healthcare sector to remotely verify the identity of citizens and healthcare professionals. A digital health ID with the highest level of secure authentication allows both citizens and healthcare professionals to access eHealth services and digital health records from anywhere, anytime, conveniently, using their smart devices.

IDEMIA provides a standalone mobile health app and a digital ID wallet that includes health credentials (e.g. EU digital wallet). These solutions include the following features:

› Secure onboarding that leverages a trusted source of information such as health ID card, national eID card or national ID system, or uses other secure sources of information (e.g. privately-managed databases such as those from health insurances)

› Strong multifactor authentication (PIN, OTP, token, identity documents and biometrics)

› Selective attribute sharing

› Digital signature

Apart from standalone solutions, IDEMIA also provides biometric SDK to enhance security of authentication to existing mobile health solutions provided by public or private health stakeholders.

IDEMIA's digital solutions contribute to the development of new fields of application such as telehealth and telemedicine, or when citizens need to access their health data remotely or share it when abroad.

This enhances the citizen user experience and their health data is stored and shared securely in compliance with local privacy regulations.

In response to the needs of governments in times of pandemic, IDEMIA developed a new product range of **digital health certificates** (proof of vaccination, proof of test or recovery) based on the ICAO Visible Digital Seal to enhance security and interoperability of health tests and vaccination results.

# 7) IDEMIA's solutions for identity management in healthcare

Solutions for citizens

· Enrollment of individuals and creation of a public health identity database

· Health ID (smartcards and digital solutions):

- Secure identification to access public/private healthcare services

- Quick reimbursement of treatment/medicine

- Digitally signed health certificates

- Internationally recognized document (e.g. EU health card)

Solutions for healthcare professionals

· Enrollment of healthcare professionals

· Health ID (physical documents / digital solutions)

- Physical access control to secure restricted areas (medical establishments: hospitals, clinics, medical offices, etc.)

- Logical access control to connect with the healthcare network and access medical files

· Digital signature for medical prescriptions
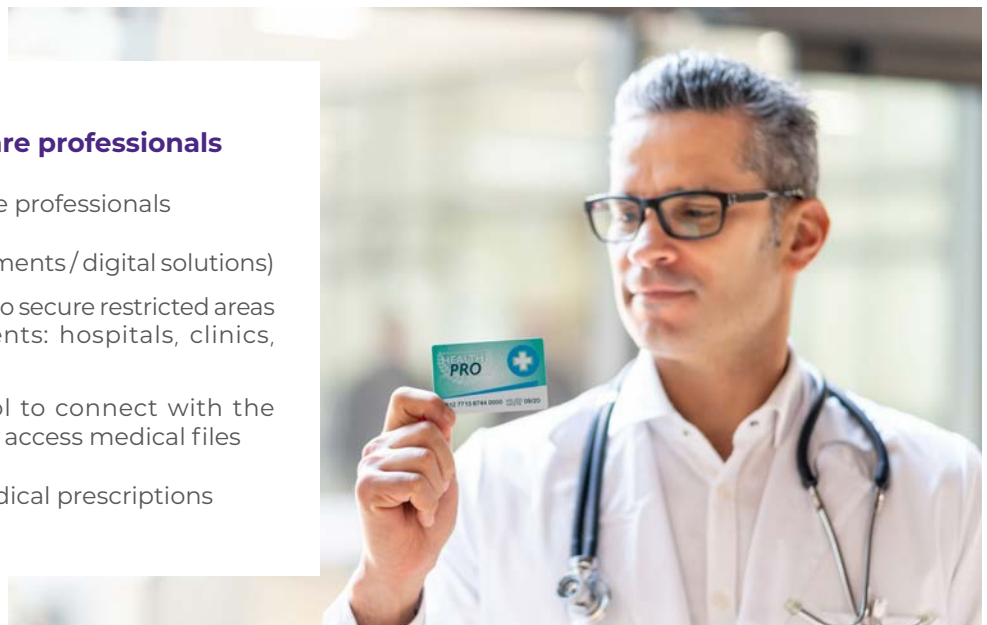
8〉 **Why IDEMIA**

A leader in civil ID solutions, IDEMA has been supplying governments with secure ID credentials such as national ID cards, passports, driver's licenses and health cards for 40 years. We have the expertise to cater for the identity requirements of the private and public healthcare sector. We develop both physical and digital identity solutions for government-directed healthcare projects to ensure the secure identification and authentication of citizens as well as healthcare professionals.

France: Securing health insurance cards

Since 2006, IDEMIA has built a long-standing relationship with GIE SESAM-Vitale, an economic interest group in charge of the issuance and interoperability of health cards in the French health ecosystem. IDEMIA is now the sole provider of the electronic health insurance card to French citizens.

The *Carte Vitale* enables every citizen to securely access the national health system. The smartcard contains a color portrait of the document holder and other personal data such as their security social number or information on insurance coverage.

The key specifications of Carte Vitale eHealth cards are:

› Chip embedding a Java Card OS

› In-house developed applet for healthcare purposes including electronic signature

› Security Architecture and PKI design

The Carte Vitale enables citizens to securely authenticate their identity to access national healthcare infrastructures and receive a reimbursement for medical expenses within four days. The efficiency with which healthcare data is being processed has increased. In 2019, 1.2 billion electronic health forms were transmitted and 4.3 million requests for reimbursement verification were registered.

To date, over 50 million personalized (graphical and electrical) cards have been supplied.

Germany: New generation of health cards

IDEMIA has a long and solid history of working with private German health insurance companies to ensure secure communication and data transmission between insurers and healthcare professionals (hospitals, doctors and pharmacies). We have supplied over 70 million electronic health insurance cards for citizen identification and authentication to more than 130 private health insurance companies over the last nine years. IDEMIA also provides personalization, delivery and customized letter shop services with PIN/PUK management.

The key features of German eHealth cards are:

› Authentication of the beneficiary through the PIN

› Electronic signature of ePrescriptions

› Data security ensured by PKI and security certification EAL4+

In 2020, Gematik – the organization responsible for German health telematics – approved three new products from IDEMIA's health card range:

› The electronic health card for health insured residents

› The health card for medical professionals such as doctors, hospital staff, pharmacists, etc.

› The ID card for specific medical organizations.

IDEMIA is the first and only supplier to provide Germany with three different health cards, all of which are based on IDEMIA's new technology labeled generation 2.1. This incorporates dual interface communication with NFC capabilities.

These smartcards facilitates communication between all stakeholders in Germany:

› 76 million insured citizens

› 200,000 health professionals

› 20,000 pharmacists

› 2,000 hospitals

› 145 health insurers via the telematics infrastructure

The new card technology offers digitalized perspectives in line with the strategy of the German Ministry of Health.

United Kingdom: The National Health Service implements eID cards for medical professionals

The UK is home to the National Health Service (NHS), a service that allows everyone to benefit from free healthcare, providing that they use state-owned hospitals and medical centers.

The NHS has created both centralized and decentralized healthcare systems that are interoperable. The basic citizen health record is accessible in the central health database called SPINE, and can be accessed all over the country.

NHS provides healthcare professionals with smartcards, enabling them to access personal and medical patient information. It increases security by limiting access to highly sensitive patient data to only those who have a valid reason to do so.

IDEMIA has been producing and delivering professional health cards to the NHS since 2015. The smartcards are personalized directly in hospitals and each card has a dual interface and is used in conjunction with a passcode, known only to the lawful holder. The smartcard provides secure and auditable access to NHS systems such as local and national SPINE health records and NHS Electronic Staff Records.

The smartcard also allows physical access control to hospital premises, and medical and administrative devices (printers, scanners, etc.).

IDEMIA supplies approximately 35,000 cards a month to the NHS healthcare trusts across the UK. IDEMIA also provides an online order management and fulfillment service.

About IDEMIA

As leader in identity technologies, IDEMIA is on a mission to unlock the world and make it safer. Backed by cutting-edge R&D, IDEMIA provides unique technologies, underpinned by long-standing expertise in biometrics, cryptography, data analytics, systems and smart devices.

IDEMIA offers its public and private customers payment, connectivity, access control, travel, identity and public security solutions. Every day, around the world, IDEMIA secures billions of interactions in the physical and digital worlds.

With nearly 15,000 employees, IDEMIA is trusted by over 600 governmental organizations and more than 2,300 enterprises spread over 180 countries, with an impactful, ethical and socially responsible approach.

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