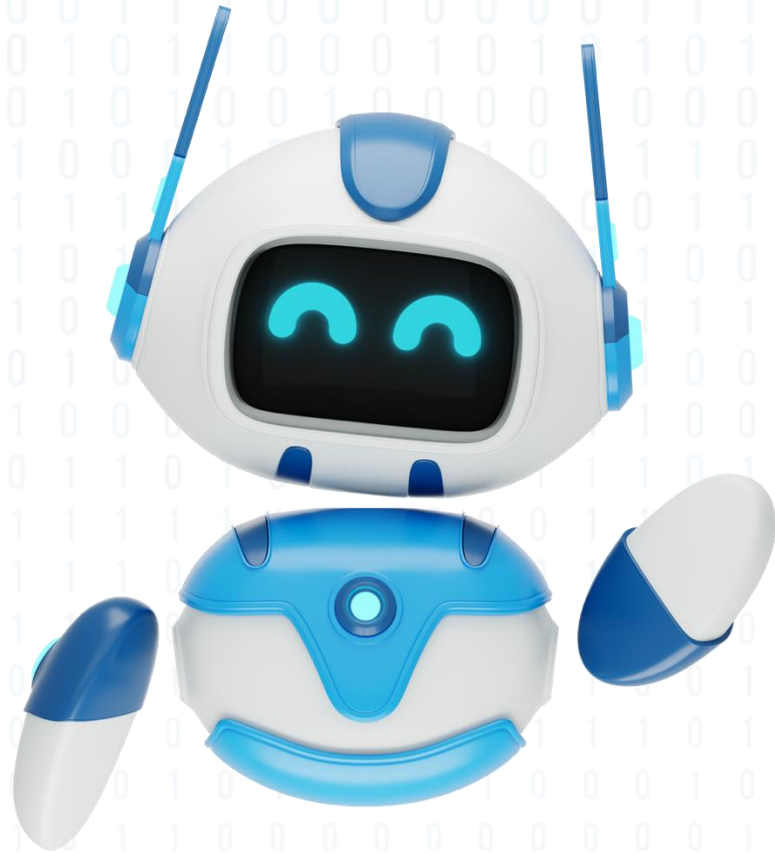


The AI Utilization in the National Health Insurance: Lesson Learned from Indonesia

Fina Tams

Presented on 13 November 2024 at MEDICA 2024

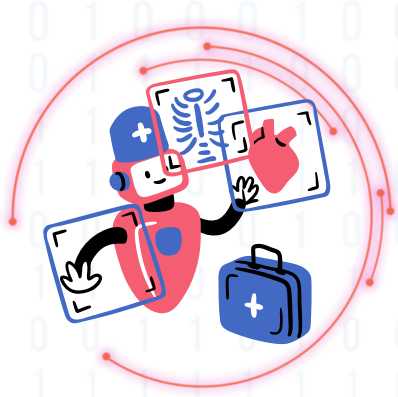




Structure of the talk

- AI in Healthcare
- AI in Health Insurance
- Lesson Learned from Indonesia
- Potential Use and Limitation
- Way forward
- Key takeaway

AI in Healthcare



Machine Learning: *Neural Networks and Deep Learning*

Example:

- Precision medicine
- Outcome prediction



Natural Language Processing (NLP)

Example:

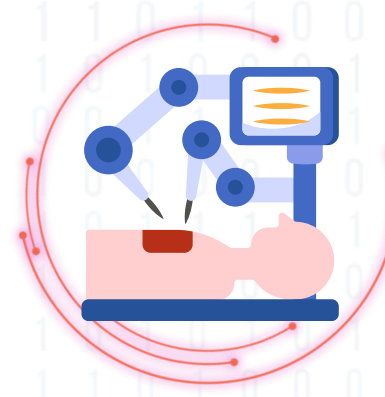
- Diagnosis accuracy



Rule-Based Expert Systems

Example:

- Clinical Decision Support System



Physical Robotic

Example:

- Surgery Robot



Robotic Process Automation (RPA)

Example:

- Patient administrative, billing, scheduling, etc.



AI in Health Insurance

- **Prediction of health insurance claims** leading to cost-saving
- **Precision and efficiency** of health insurance claim processing → approve/reject
- **Anti-fraud** claim detection

In Indonesia

RUMAH SAKIT

Bertanggung

Terbukti Palsukan Klaim, BPJS Kesehatan Putus Kerja Sama Dua RS di Tegal

Dua rumah sakit di Tegal, Jateng, melakukan klaim fiktif ke BPJS Kesehatan. Kerja sama pelayanan pasien JKN diputus.

Audio Berita 6 menit

Oleh KRISTI DWI UTAMI
9 Oktober 2024 21:12 WIB - 3 menit baca

A TEKS [f](#) [t](#) [v](#) [p](#) [d](#) [s](#)



Rumah Sakit

KOMPAS/PERGANATA INDIRA RIATMOKO

In The USA

USA - MEDIA - 2024 ELECTION

JEDES JAHR MEHR GB
Bei allen Ainet Plats inklusive

Schon ab
12 €

Neuer Link



J. C. NEWS BUSINESS MAR 7, 2024 6:45 AM

Medicare Scammers Steal \$60 Billion a Year. This Man Is Hunting Them

John Minimo ferrets out shady activity by looking for patterns in vast troves of data.



Health Care

How Cigna Saves Millions by Having Its Doctors Reject Claims Without Reading Them

by Patrick Rucker, The Capitol Forum, and Maya Miller and David Armstrong, ProPublica

March 25, 2023, 5 a.m. EDT

Internal documents and former company executives reveal how Cigna doctors reject patients' claims without opening their files. "We literally click and submit," one former company doctor said.

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Uncovered: How the Insurance Industry Denies Coverage to Patients

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Do you have experiences with health insurance denials? [Please get in touch.](#)

When a stubborn pain in Nick van Terheyden's bones would not subside, his doctor had a hunch what was wrong.

Lesson learned from **Indonesia:** **National Health Insurance/JKN** est. 2014

98.6%
coverage

277.1 of 281 M
(per 30 Sep
2024)

41.8%
subsidized

Contribution
Recipients (PBI)

1M
claims per day

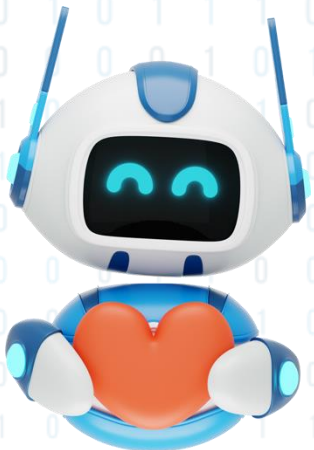
health claims
per day

960K
digital payment

digital payment
channels

27K
health facilities

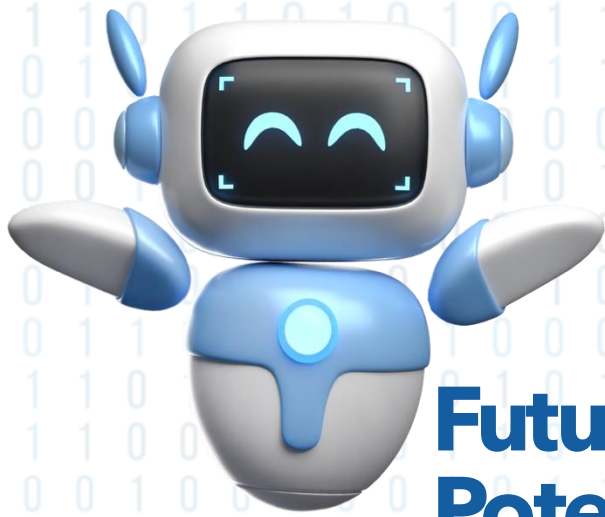
3K hospitals,
22K CHC/FM
2K pharmacies



Utilization of AI

- Anti-fraud claim detection: health care claim decision-making process
- **Frista:** Face recognition integrated system hospital using single identity (National ID) as of 1 Sep 2024
- Telemedicine
- Chatbot and Digital Assistant





Future Potential Use

- Precision medicine
- Surgery robotic
- Diagnostic accuracy i.e. **AI imaging**
- **Big data analysis** from the patient medical record → disease trend, prediction of health insurance claim, forecasting patient volume and health care needs



Limitation

- Data privacy,
- Intellectual property rights,
- Accountability,
- Openness,
- Cybersecurity,
- Accuracy,
- Performance,
- Bias,
- Discrimination,
- Ethical consideration

HEALTH, RACE & GENDER

Research: Artificial intelligence can fuel racial bias in health care, but can mitigate it, too

While some algorithms do indeed exacerbate inequitable medical care, other algorithms can actually close such gaps, a growing body of research shows.

by Julia Sklar | July 11, 2022 |

artificial intelligence health disparities technology



JR

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Editors' Picks



Article

AI and Privacy: Safeguarding Data in the Age of Artificial Intelligence

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What is AI privacy?

AI data collection methods and privacy

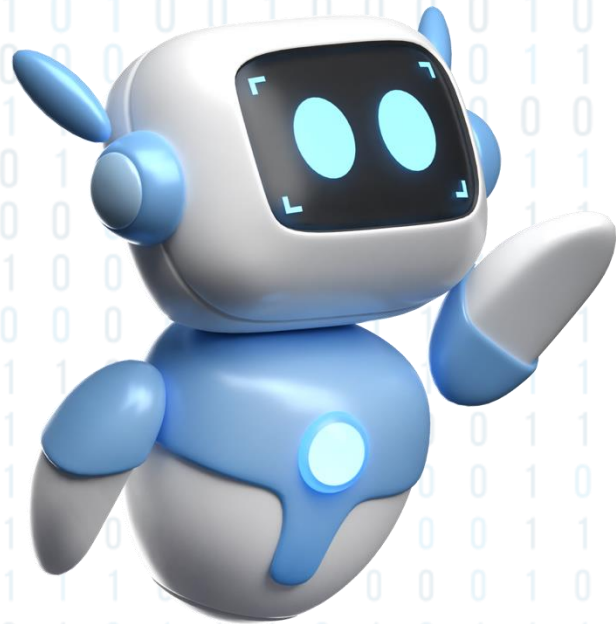
The unique privacy challenges of AI

Key AI privacy concerns for businesses

Strategies for mitigating

Artificial Intelligence (AI) has stretched beyond the confines of science fiction to become a contemporary tech solution that many businesses use today. Its rapid integration into various sectors, from healthcare to finance, is changing how we interact with data and make decisions. Our [2023 Currents research report](#), surveying founders, executives, and employees in tech, found that 49% of respondents use AI and ML tools for business use. However, hesitation around these technologies persists. When asked what prevented their organizations from adopting AI/ML tools more, 29% cited ethical and legal concerns, while 34% flagged security concerns.

With this innovation comes a pressing concern: AI privacy. As AI systems process vast amounts of personal information, the line between utility and intrusion becomes increasingly blurred. Companies using [AI business tools](#) or developing their own must carefully balance protecting sensitive information with maximizing the technology's capabilities. This article delves into the multifaceted issue of AI privacy, examining the risks, challenges, and strategies for mitigation that businesses must consider.

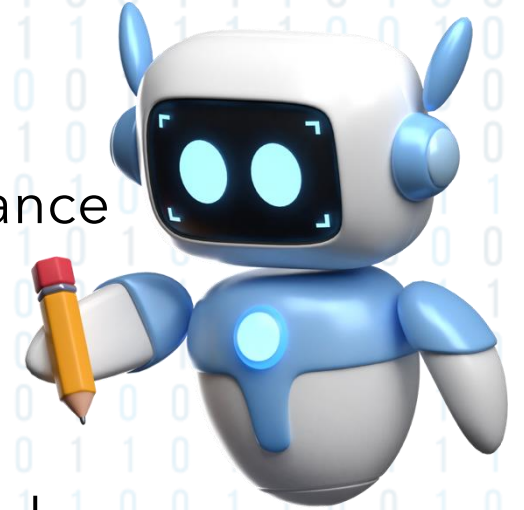


Way Forward

- **Sustainability**
- **Inclusion of new technology** through Health Technology Assessment (HTA), such as precision medicine, robotic surgery, and diagnostic accuracy (AI imaging)

Take aways

- AI can improve healthcare in general, particularly in health insurance
- Indonesia's JKN has almost 100% coverage and 1 million health claims daily
- A lesson learned from Indonesia's JKN implementation: anti-fraud claims detection, Frista, telemedicine, chatbots, and digital assistants.
- Other features of AI, such as new technology, could be included.
- Sustainability is the key.



Reference

- Davenport, T., & Kalakota, R. (2019). The potential for artificial intelligence in healthcare. *Future healthcare journal*, 6(2), 94-98
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- Hendricks-Sturup, R., Vandigo, J., Silcox, C., & Oehrlein, E. M. (2024). Best Practices For AI In Health Insurance Claims Adjudication And Decision-Making. *Health Affairs Forefront*.

Thank you
Danke Schoen
Terima kasih

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in Fina Tams

