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Harnessing AI across the Global L&H Value Chain

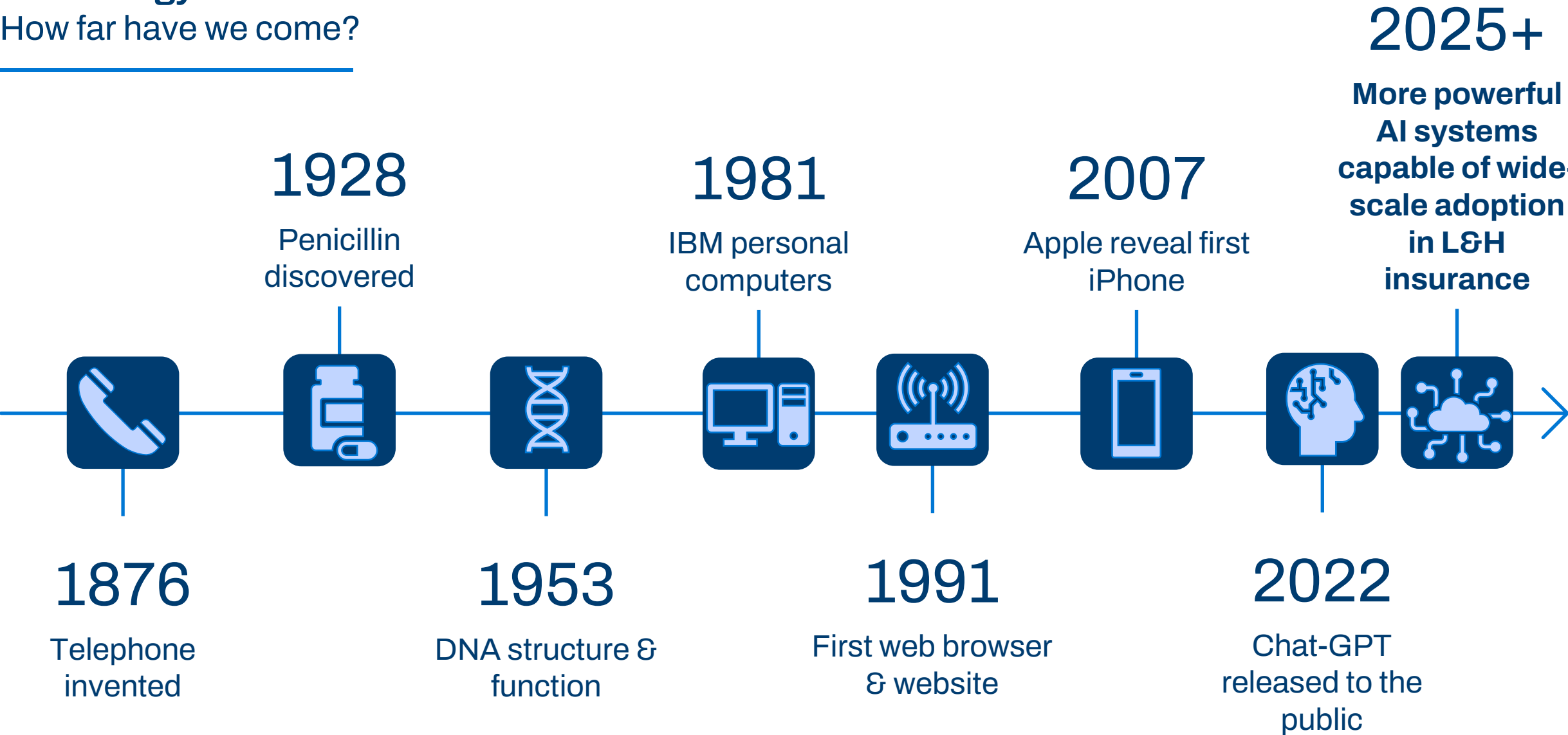**Lisa Balboa & Ryan Boldick**

Life and Health Digital Business Accelerator
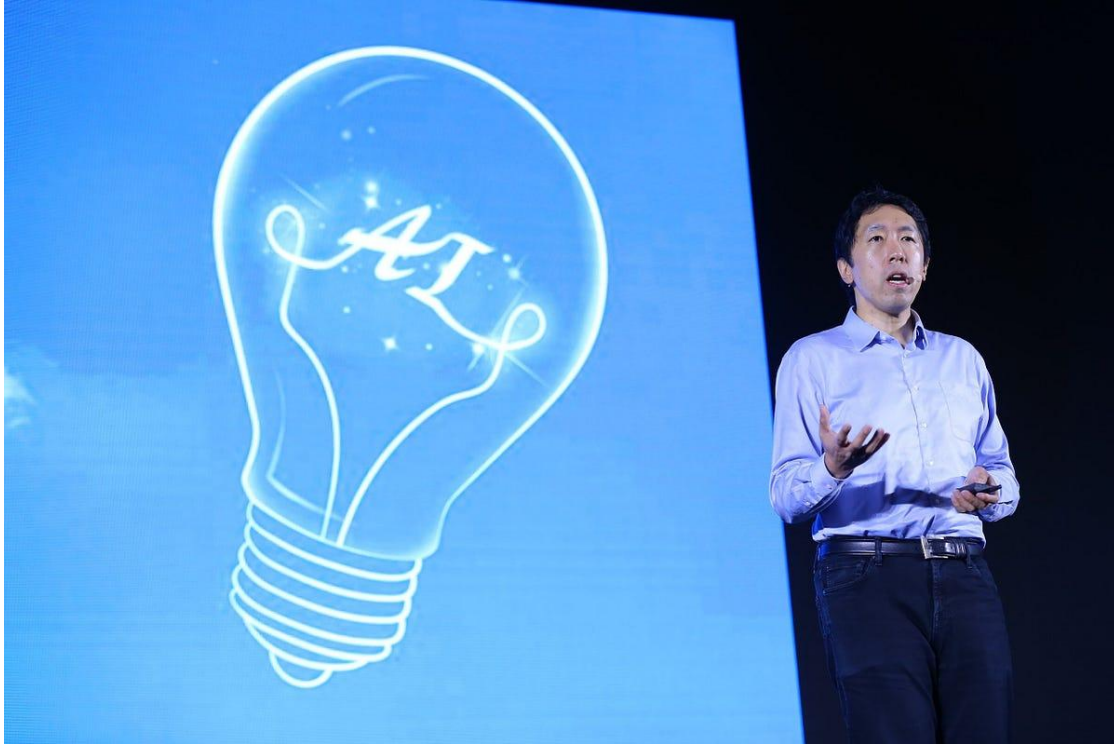
September 2025

somewhat different

Technology timeline
How far have we come?

2025+
More powerful AI systems capable of wide-scale adoption in L&H insurance

1928
Penicillin discovered

1981
IBM personal computers

2007
Apple reveal first iPhone

1876
Telephone invented

1953
DNA structure & function

1991
First web browser & website

2022
Chat-GPT released to the public

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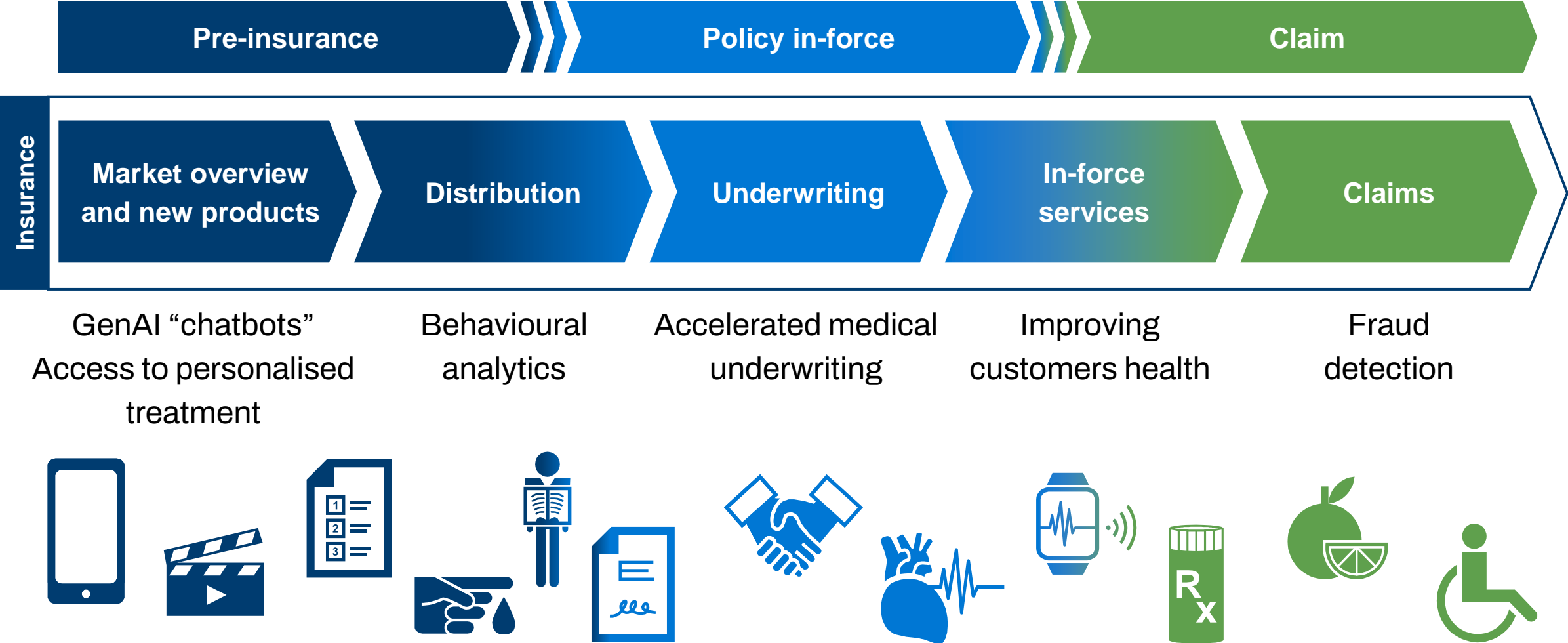# How will Artificial Intelligence impact the world as we know it today?

> Just as electricity transformed everything 100 years ago, today I actually have a hard time thinking of an industry that I don't think AI will transform in the next several years.
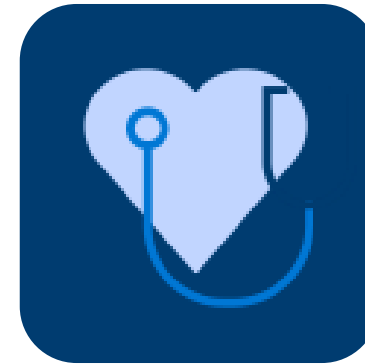
Andrew Ng, co-founder Google Brain

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How can insurers create value using AI?
AI can be used across the full insurance value chain

Pre-insurance	Policy in-force	Claim

Insurance

Market overview and new products	Distribution	Underwriting	In-force services	Claims
GenAI "chatbots" Access to personalised treatment	Behavioural analytics	Accelerated medical underwriting	Improving customers health	Fraud detection

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Today's agenda
AI in action

Understanding customer behaviour

Using AI to better understand the needs of customers

Accelerated underwriting & claims

Using AI to improve efficiency of risk assessment

Personalisation of medical science

Creating access to personalised medicine

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Customer Behaviour

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Customer behaviour
Using AI to better understand the needs of customers

Efficiency of onboarding

- ✓ Improved processing speed
- ✓ Customer satisfaction
- ✓ Customer retention

Non-disclosure & Fraud detection

- ✓ Early identification
- ✓ Improved claims experience
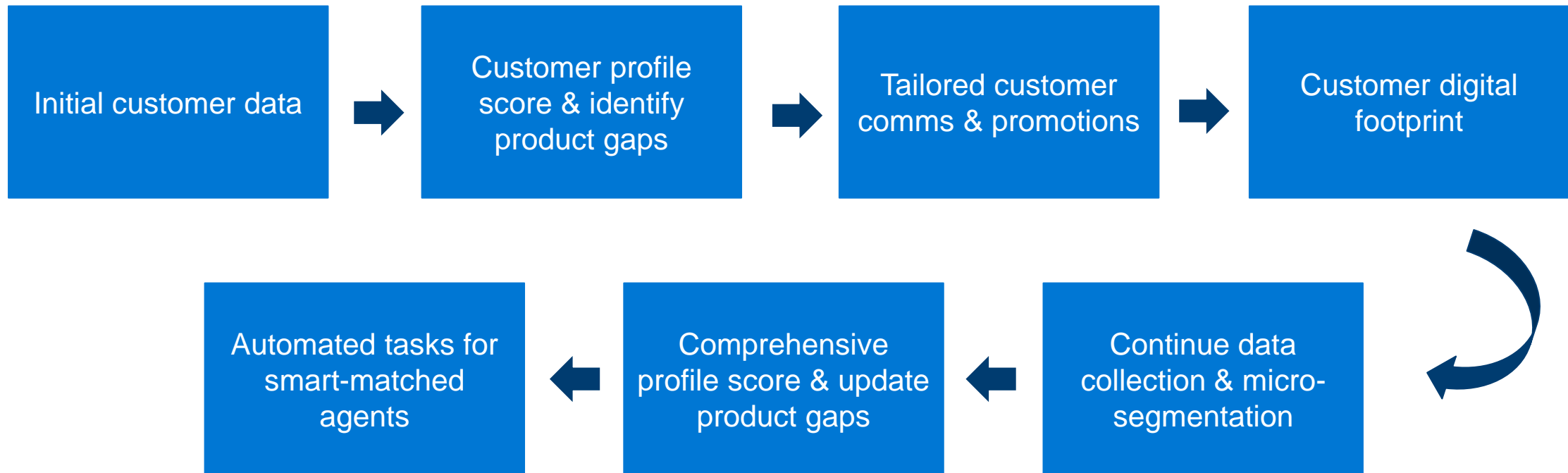- ✓ Evidence based

On the Horizon: Hyper-personalisation

- ✓ Enhanced customer experience
- ✓ Proactive health management

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Customer behaviour: Efficiency of onboarding
Online-merge-offline

Using AI as an enabler to empower advisors to build customer relationships
1:1,000 agent to customer ratio enabled through smart-matching analytics

Initial customer data → Customer profile score & identify product gaps → Tailored customer comms & promotions → Customer digital footprint

Automated tasks for smart-matched agents ← Comprehensive profile score & update product gaps ← Continue data collection & micro-segmentation

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Customer behaviour: Non-disclosure & fraud detection
Understanding customer intent using behavioural analytics

US-based insurtech focused on how the customer & agent interact throughout the purchase journey
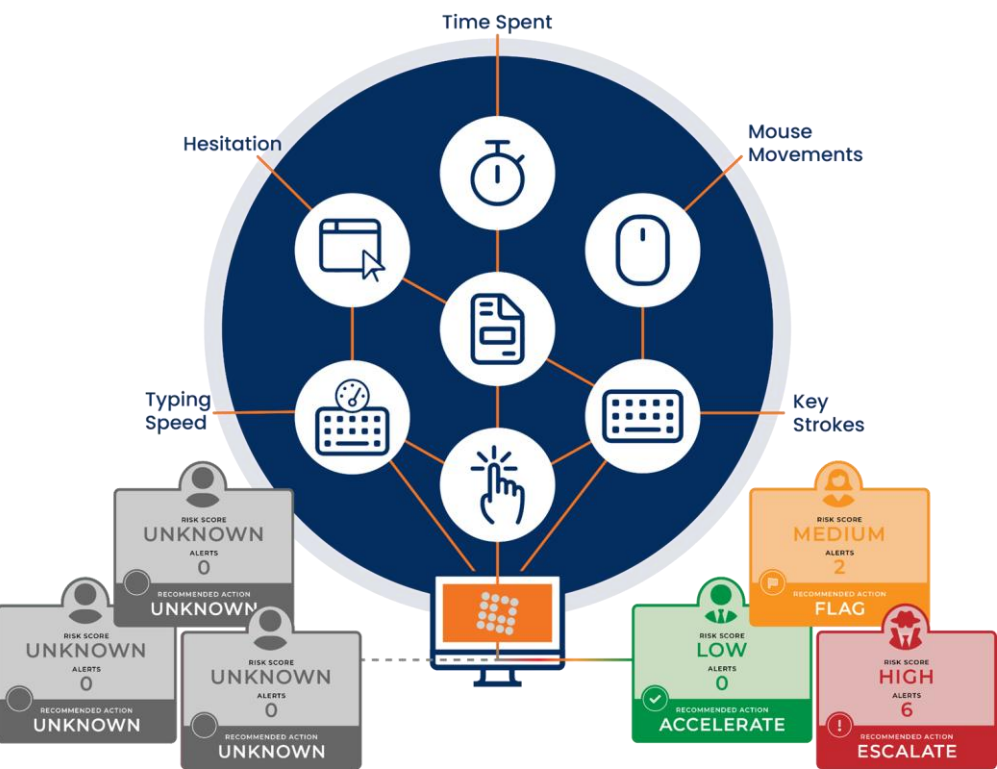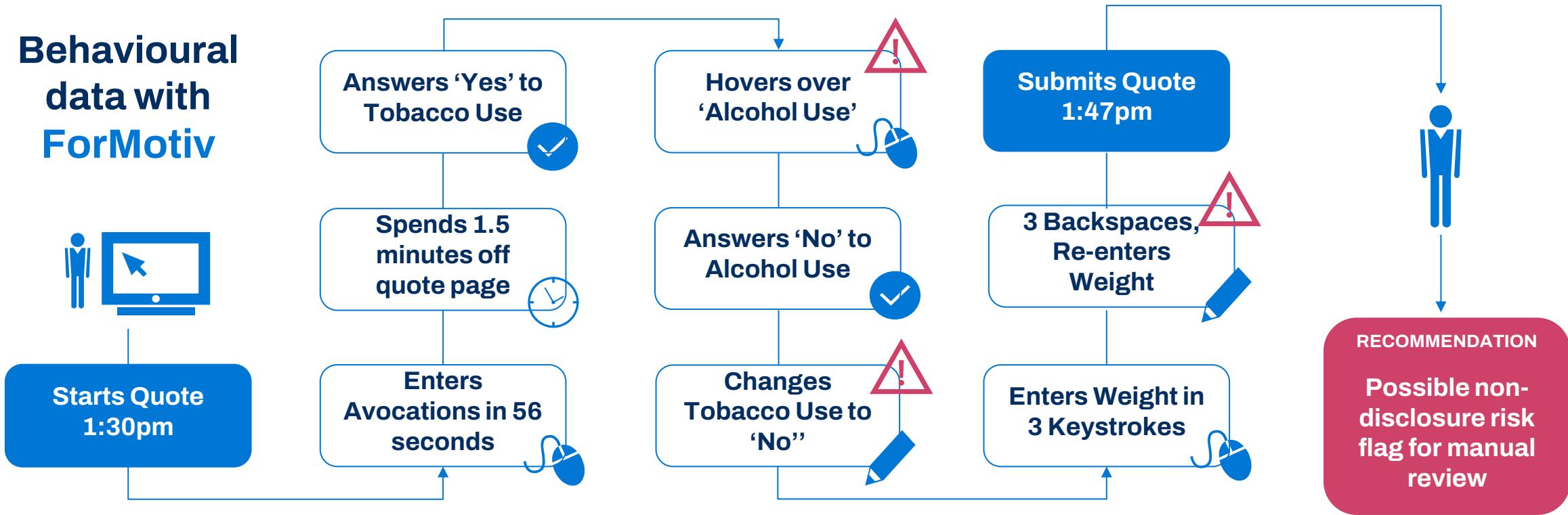

Improve conversion rates
Example from USA

Decile	Conversion %
1	**2.3%**
2	**4.1%**
3	**5.6%**
4	**6.4%**
5	8.0%
6	9.5%
7	10.7%
8	14.1%
9	18.1%
10	29.5%

Testing a different call to action for bottom 40% of users increased conversion by x1.7

Find out more on: hr | equarium

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Customer behaviour: Non-disclosure & fraud detection
Real-time analytics to detect non-disclosure

Behavioural data with ForMotiv

Starts Quote 1:30pm

Answers 'Yes' to Tobacco Use

Spends 1.5 minutes off quote page

Enters Avocations in 56 seconds

Hovers over 'Alcohol Use'

Answers 'No' to Alcohol Use

Changes Tobacco Use to 'No''

Submits Quote 1:47pm

3 Backspaces, Re-enters Weight

Enters Weight in 3 Keystrokes

RECOMMENDATION

Possible non-disclosure risk flag for manual review

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On the Horizon: Hyper-personalisation

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Accelerated Underwriting

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Accelerated underwriting
Using AI to improve efficiency of risk assessment

Types of AI

Expert systems

Machine learning

Generative AI

Examples in underwriting

Automated underwriting engines

Predictive modelling

Chatbots that provide information in insurance agents

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Accelerated underwriting
Using AI to improve efficiency of risk assessment

Types of AI

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Predictive modelling

Chatbots that provide information in insurance agents

Accelerated underwriting: Electronic health records
Using EHRs to provide real-time underwriting decisions

ReFlex Select laboratory data partnership

Combining Hannover Re's ReFlex automated underwriting engine with US lab data to provide real-time clinical lab records for accelerated underwriting

>3,000 underwriting rules

70% coverage level

>85% auto-decision rate

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Accelerated underwriting
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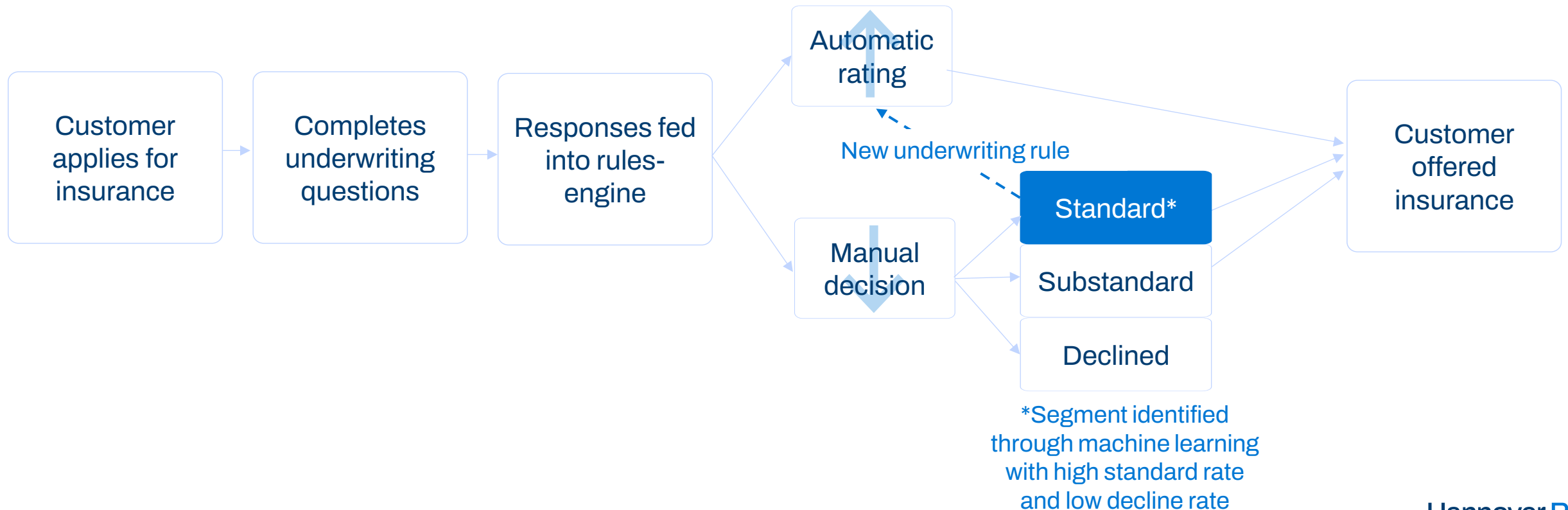**Chatbots that provide information in insurance agents**

Accelerated underwriting: Machine learning
Using advanced analytics to increase STP rates

Improve straight-through-processing rates to reduce purchase friction

Example: using decision trees, we proposed 2 new underwriting rules covering >10% of all manual decisions

Customer applies for insurance → Completes underwriting questions → Responses fed into rules-engine →

Automatic rating

New underwriting rule

Manual decision → Standard* / Substandard / Declined

→ Customer offered insurance

*Segment identified through machine learning with high standard rate and low decline rate

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Accelerated underwriting
Using AI to improve efficiency of risk assessment

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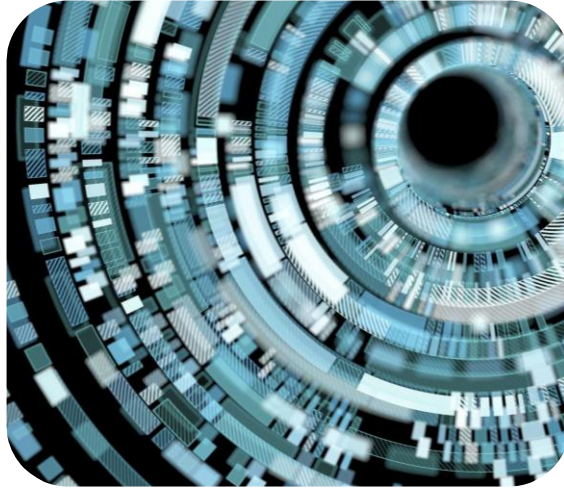
Predictive modelling

Chatbots that provide information in insurance agents

Accelerated underwriting: Generative AI
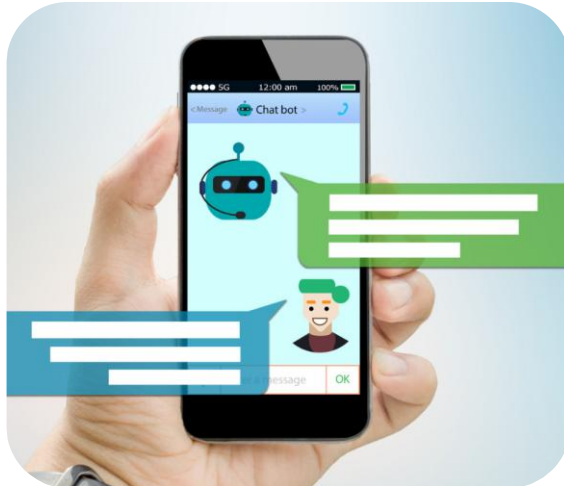## On the horizon for AI in underwriting

Optical character recognition and automated disease signalling

Medical & financial document summarisation

Chatbots to support underwriters and claims advisors

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Personalisation of Medical Science

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Personalisation of Medical Science
AI is driving new drug discovery, opening opportunities for personalised medicine

» The coming wave is defined by 2 core technologies: AI & synthetic biology. Together they will usher in a new dawn for humanity, creating wealth and surplus unlike anything ever seen.

Mustafa Suleyman, co-founder DeepMind, The coming wave

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Personalisation of Medical Science
Precision medicine & access problems

NEWS REVIEW

Chemotherapy saved my life, but was there a better treatment?
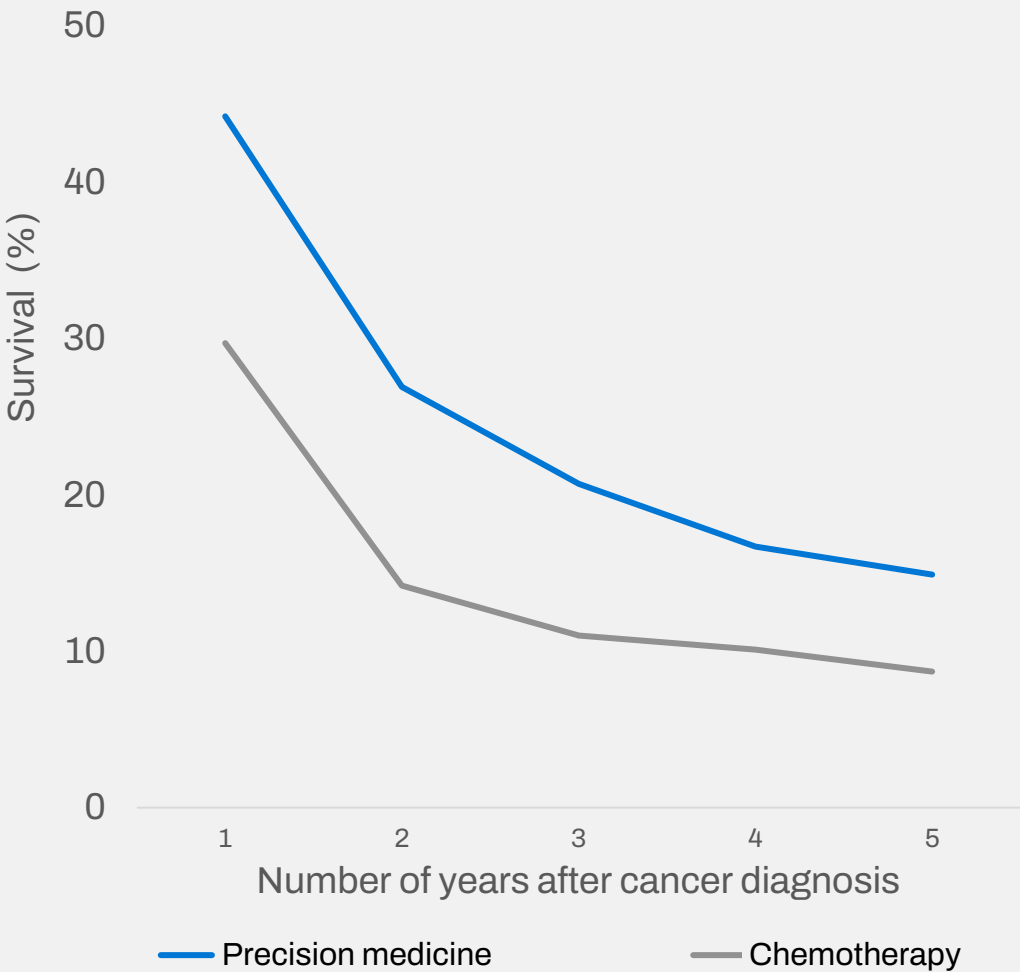
241 days

Average waiting time between approval of treatment by FDA, and approval in EMA countries

25 - 65%

of targeted cancer therapies approved by the FDA are not available in EU countries

Survival rates
Bladder cancer

Survival (%)

Number of years after cancer diagnosis

— Precision medicine   — Chemotherapy

Rosamund Dean (2021), Further (2023), EFPIA (2023), KEYNOTE-045, Bellmunt (2021)
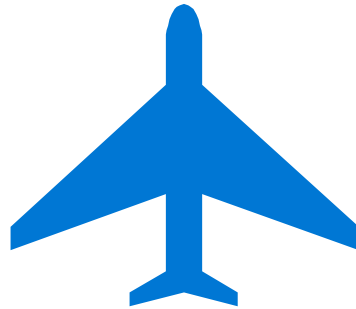
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Personalisation of Medical Science: Overseas treatment plans
An insurance solution to support access to new cancer treatments

Access precision medicine cancer treatments abroad

Genetic test of cancer &
personalised treatment plan

Assistance for
treatment abroad

Financial protection for the
costs of treatment and travel

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Personalisation of Medical Science: What is precision medicine?
Personalised patient experience based on genetics - Cancer

Precision medicine analyses a person's genetics and provides a treatment based on their genes or the genetic signature of their disease – US partnership

Predictive hereditary cancer risk

More precise diagnosis
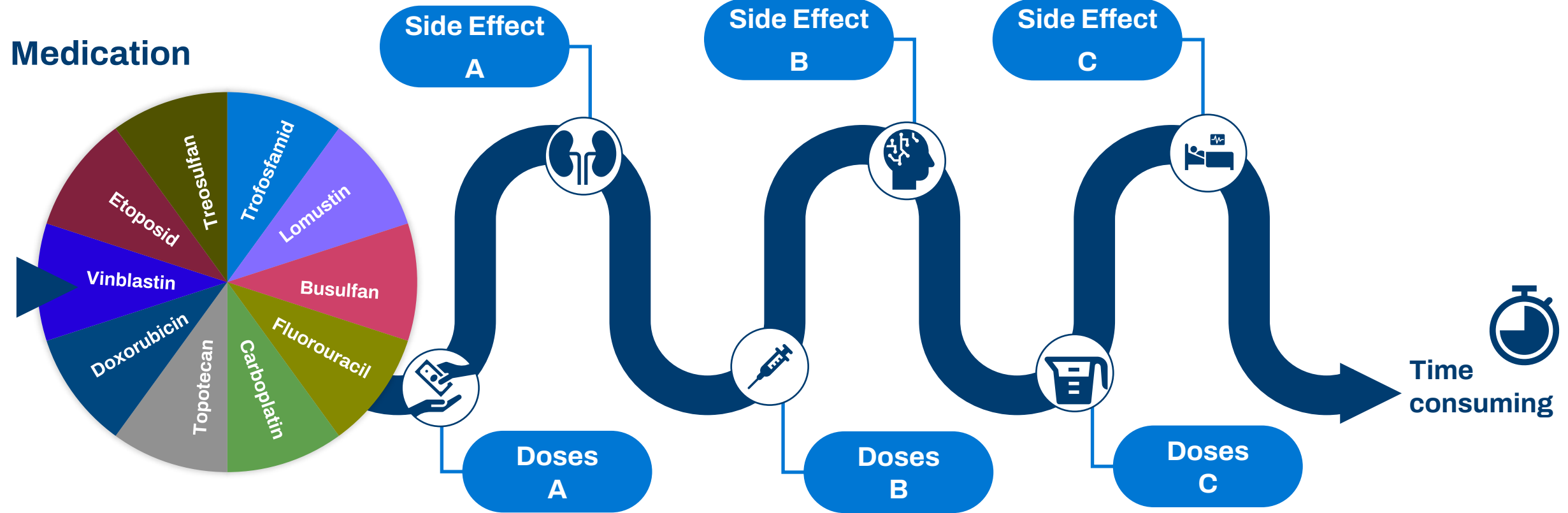
Treatment personalised to genetics

Quicker recovery & fewer side-effects

Optimisation of resources

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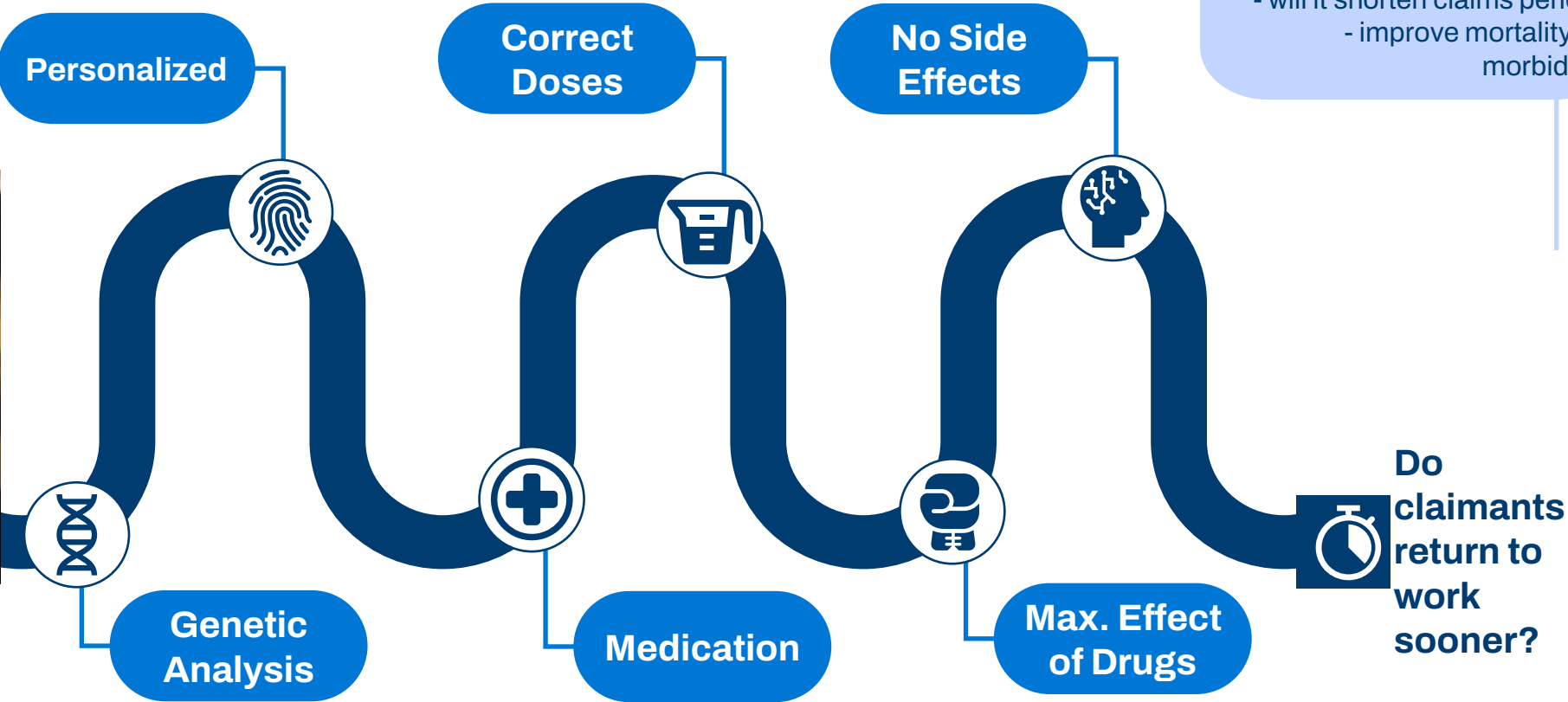
Personalisation of Medical Science: Pharmacogenomics
Medicine today: Therapy à la Wheel of Fortune - Trial-and-Error?

Medication

Wheel segments: Trofosfamid, Lomustin, Busulfan, Fluorouracil, Carboplatin, Topotecan, Doxorubicin, Vinblastin, Etoposid, Treosulfan

Side Effect A — Doses A

Side Effect B — Doses B

Side Effect C — Doses C

Time consuming

➢ Current approach: one size fits all

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Personalisation of Medical Science : Pharmacogenomics – Gene detectives
Application areas – Psychiatry / Cancer

For personalised medicine, i.e. drug efficacy.

Ongoing study for all disability claims related to Mental illness:
- will it shorten claims period
- improve mortality & morbidity

Personalized

Correct Doses

No Side Effects

Genetic Analysis

Medication

Max. Effect of Drugs

Do claimants return to work sooner?

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Conclusion: Creating value where it matters

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In summary:
AI is already impacting all areas of the life and health value chain

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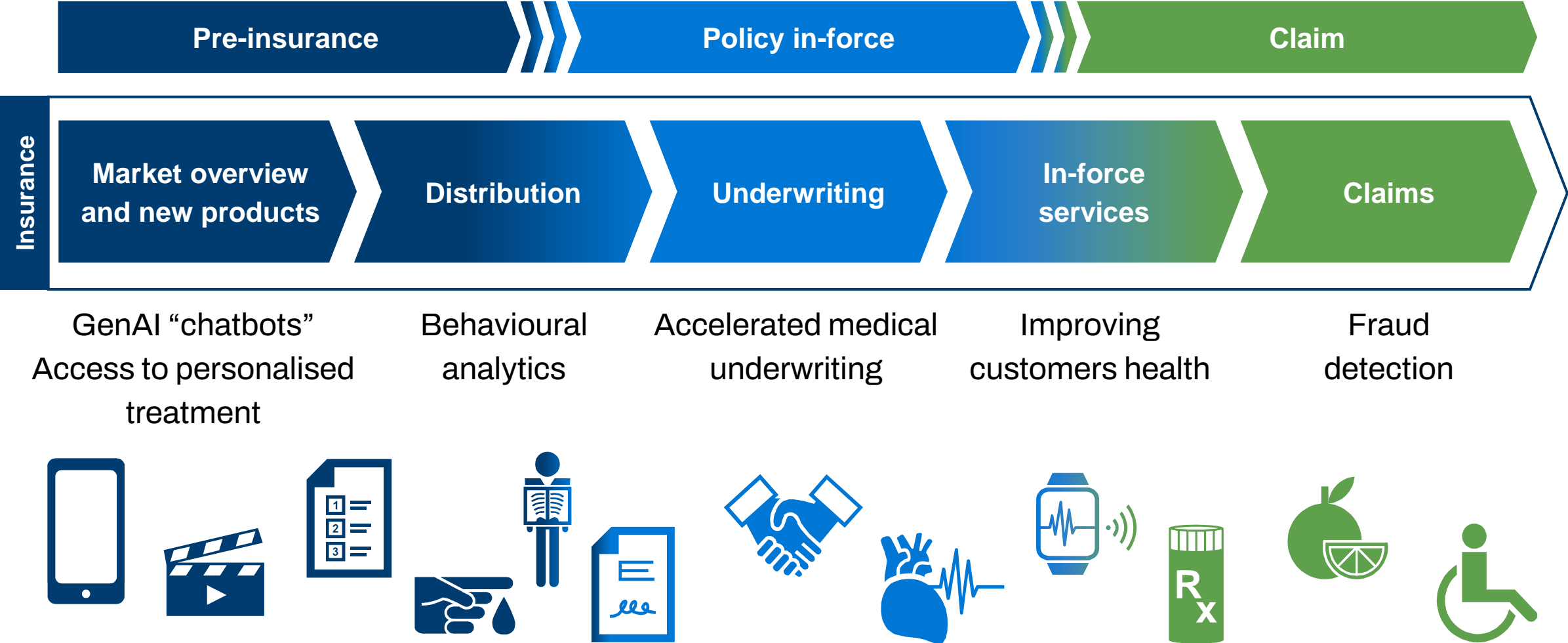
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Thank you very much for your attention
Feel free to reach out if you have questions

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