



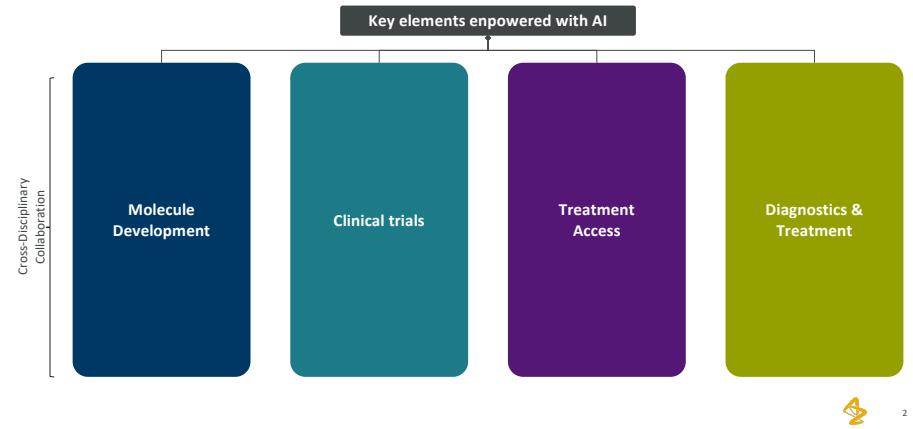
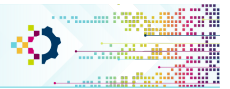
The role of not only AI in the patient's journey: from research to treatment

Ing. Vladimír Janovský
CE Innovation Business Excellence Director

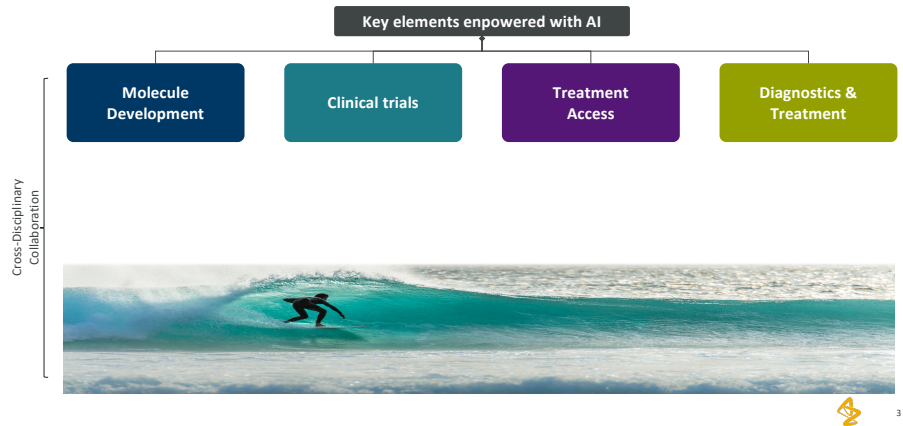
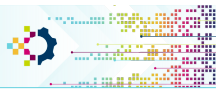
April 2024 CZ-5912



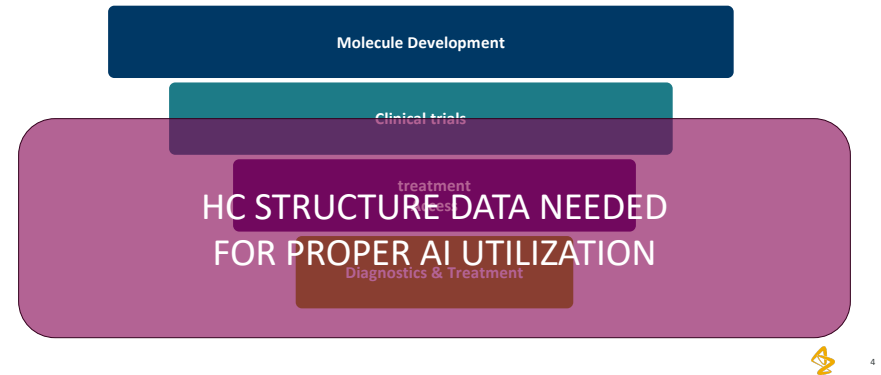
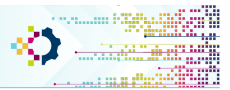
AI from innovative pharma prespective



AI from innovative pharma prespective

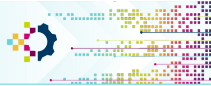


AI from innovative pharma prespective

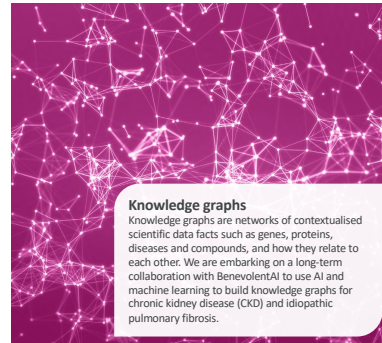


Molecule Development

Unlocking new science insights



- Gaining a better understanding of the diseases we want to treat
- Identifying new targets for novel medicines
- Predicting which molecules to make and how to make them



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Clinical trials

From creating patient-centric clinical trials to augmenting patients outcomes



- Enhanced Patient Recruitment
- Data Analysis Efficiency
- Trial Design Optimization
- Real-time Monitoring

AI could help to understand „HIS“ data and identify suitable patients



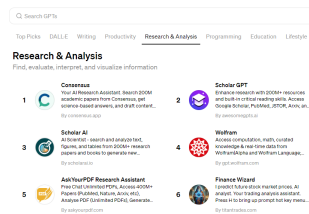
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Treatment Access

Bringing Innovative EFFECTIVE Treatments to More Patients



- Allocate resources to most effective treatment via most effective way
- Meta analysis / Network analysis



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Why do we need AI in medicine?



„When you hear hoofbeats, Think of horses, not zebras“

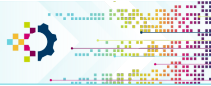
Theodore Woodward, circa 1948



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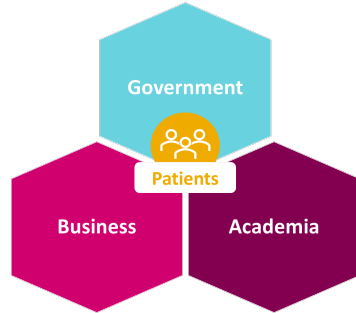
Diagnostics & treatment

Don't stop one step before finish – AI could help with the last step



- Early patient diagnosis
- Patient pathway
- Effective doctor

Collaboration is a key!



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Diagnostics & treatment

Don't stop one step before finish – AI could help with the last step

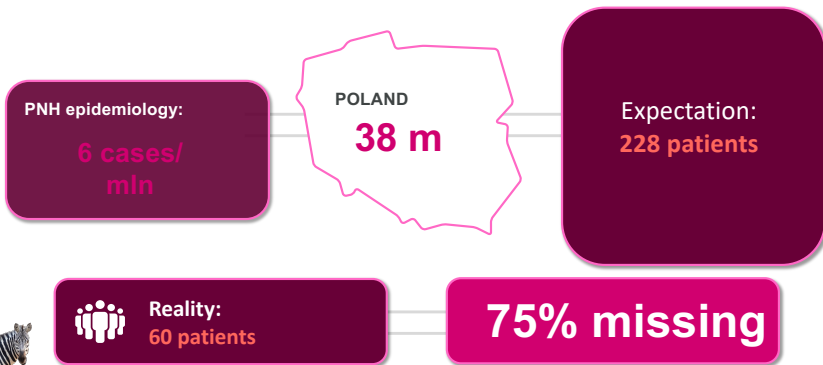


Early patient diagnosis	Patient pathway	Effective doctor
Find patients before symptoms find them	Mapping Patient Journeys to Enhance Care	Doctor's Collaborative Assistant, Not a Replacement
RD example CKD example	Asthma example	Lung cancer screening



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PNH - Paroxysmal Nocturnal Hemoglobinuria

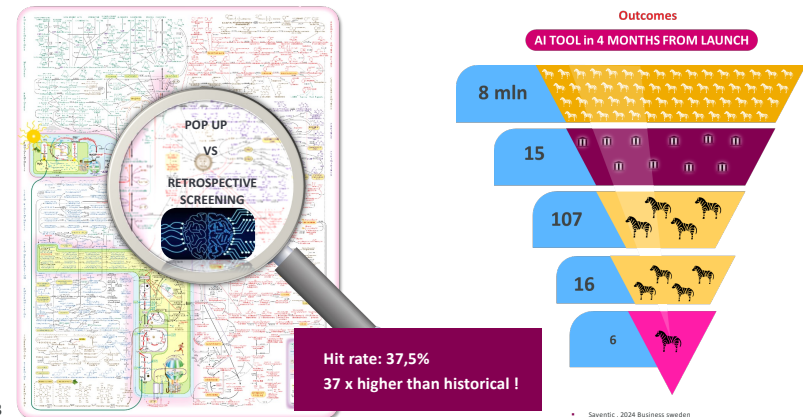


Piekarska 2015, Zupafalka 2012, GUS 2020



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PNH Early diagnosis algorithm in PL example



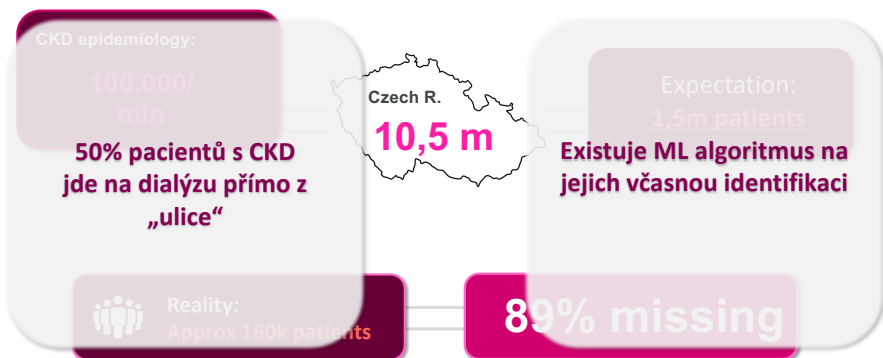
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• Saventix, 2024 Business Sweden



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CKD - Chronic Kidney Disease



Zdroj: Česká Nefrologická společnost - Dializační ročníky

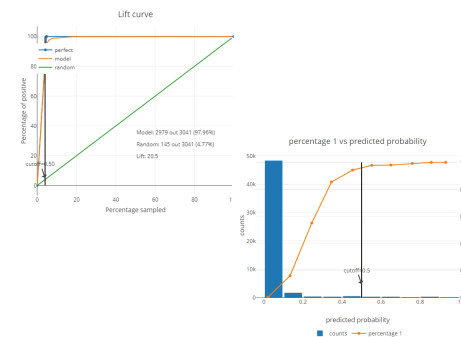


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CKD - Chronic Kidney Disease



- We have successfully built a pilot for CKD at-risk patient detection at European Healthcare hackathon – we achieved 2nd place and won AstraZeneca prize.
- Model was trained on 15,871 patients with 3,150 of them having been diagnosed with CKD.
- The trained model resulted in **98% accuracy** and **97% precision**.
- The model can be used for targeting at-risk patients – when sorted by model prediction, targeting 20% of the population would contain 90% of CKD patients.
- The model is a white box and the reasons for given at-risk score are explainable.

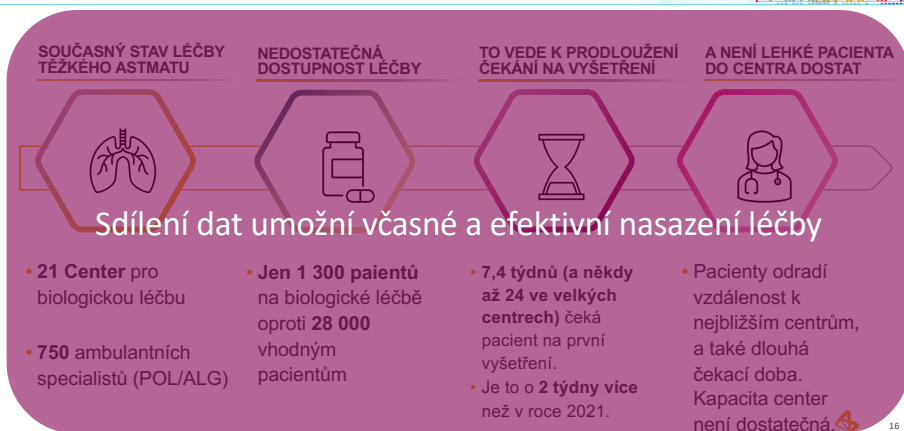


Deloitte / Bronis.ai



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Patient pathway



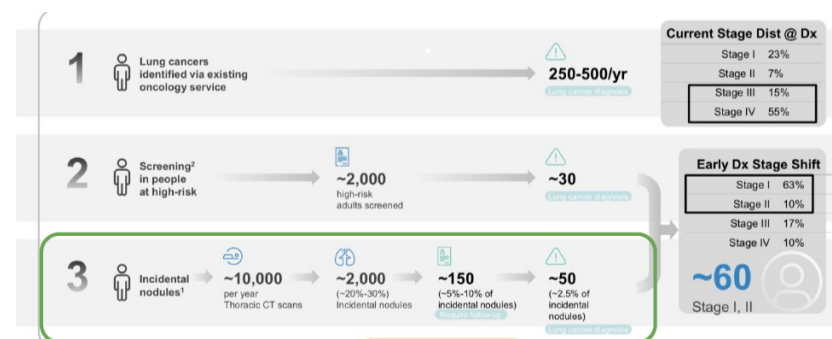
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Effective doctor

opportunity not only for screening programs



Specific foreign hospital case where an algorithm enabling the early identification of an at-risk patient was implemented in collaboration with The Lung Ambition Alliance, AstraZeneca, and Aidence.



Prof Giorgio V Scagliotti - Jan 2021 @ World Conference on Lung Cancer



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Thank you

