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Artificial Intelligence: An attempt to automate remote device follow-up.

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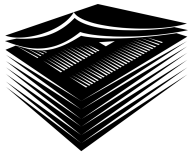
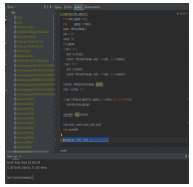
Artificial intelligence through machine learning (ML) methods is becoming prevalent throughout the world, with increasing adoption in healthcare. ML applications have allowed for risk stratification, improved arrhythmia localization and streamlined remote monitoring which may significantly reduce the workload faced by electrophysiologists.

We aimed to develop a system that automates cardiac implantable electronic devices remote follow-up.

The developed algorithm was able to extract data from 30 remote follow-up PDF reports in under five minutes. This algorithm may impact electrophysiology practice, improving patientcare.



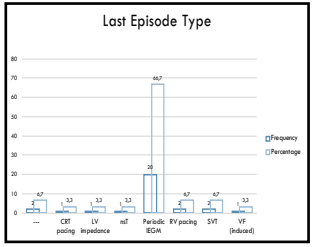
Input PDFs file/folder from your computer.

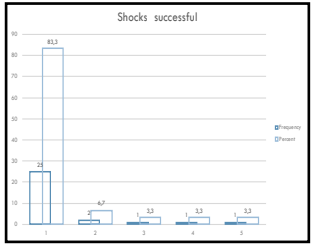


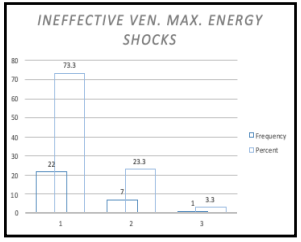
Software data extraction and conversion.

Output xlsx sheet. Data analysis.

Big data-based decisions.







Take-home messages

- This machine learning algorithm proved that it is possible to facilitate and automate remote follow-up of cardiac implantable electronic devices.
- In a near future this will allow to us to efficiently increase productivity, by speeding and facilitating interpretation of remote device follow-ups, leading to improvements in patientcare and precision cardiovascular medicine.
- Furthermore, in the current and future pandemics it may help prevent unnecessary in-person medical visits, avoiding additional, unnecessary strain on an already overburdened and overwhelmed healthcare system, and saving costs.

Reference:
Muthalaly, R. G., & Evans, R. M. (2020). Applications of Machine Learning in Cardiac Electrophysiology. *Arrhythmia & electrophysiology review*, *9*(2), 71–77. https://doi.org/10.15420/aer.2019.19