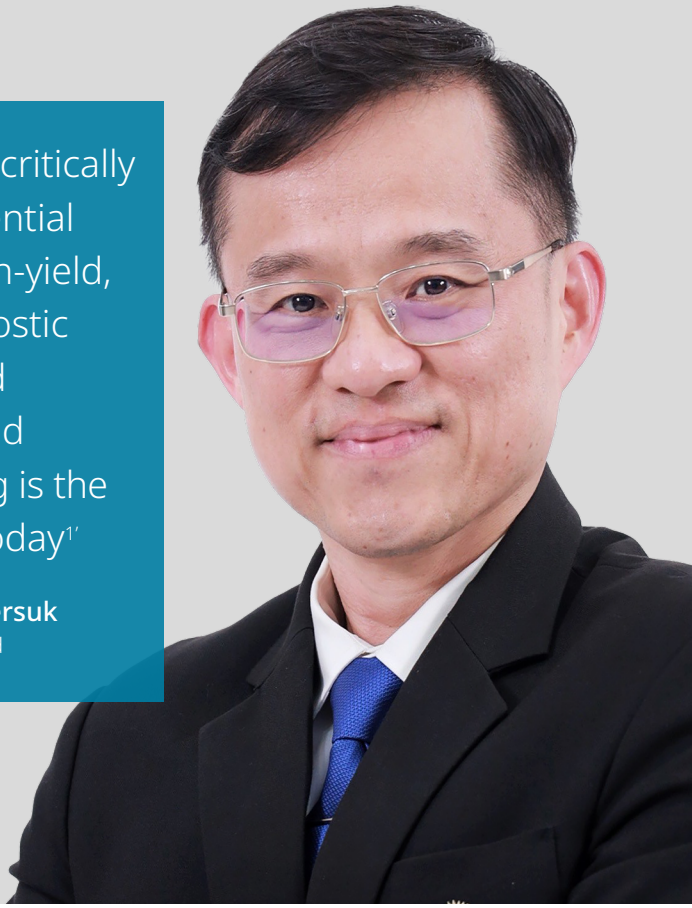
Oxford Nanopore Technologies

Revolutionising testing for critically ill patients

Vorasuk Shotelersuk's goal is to enhance patient care through optimal genetic testing. Learn why Oxford Nanopore sequencing has the potential to provide the solution when precision and speed are paramount.

'To save the lives of critically ill patients, it is essential to have a rapid, high-yield, and practical diagnostic tool ... rapid [Oxford Nanopore] long-read genome sequencing is the solution available today[1]'

Professor Vorasuk Shotelersuk
Chulalongkorn University, Thailand



Reveal more biology to transform human health

Ask bolder questions

Short-read sequencing is limited in its capacity for precise genetic diagnosis as detection of structural variants remains a challenge, and phasing information is inaccessible without parental samples[2]. Oxford Nanopore sequencing has the potential to address these two challenges[2], whilst providing additional benefits in workload management and efficiency[2,3].

Ultra-rich data

61%
of cases for which causative variants were found[2]

9 days
median turnaround time[2]

8/18
cases where morbidity could have been prevented[2]

Reveal more biology

Vorasuk's proof-of-concept study found that Oxford Nanopore sequencing has the potential to achieve a diagnostic yield of 61% (11/18), higher than the 46% (25/54) achieved with short-read exome sequencing in a quoted previous study[2]. Not only was nanopore sequencing more rapid, but the additional information meant that single nucleotide variants were reclassified, impacting treatment decisions[2].

'This proof-of-concept study demonstrated the utility of singleton rapid [Oxford Nanopore] long-read genome sequencing as a first-tier diagnostic approach for critically ill patients with unknown causes[2]'

Read more about clinical research with Oxford Nanopore sequencing

References

1. Oxford Nanopore Technologies. Available at: https://nanoporetech.com/news/apac-rare-disease-consortium-launched-to-advance-genomic-innovation-and-rare-disease-diagnosis (2025) [Accessed 4th March 2025]
2. Kamolvisit, W. et al. *Eur. J. Hum. Genet.* (2025). DOI: https://doi.org/10.1038/s41431-025-01818-9
3. Oxford Nanopore Technologies. Available at: https://nanoporetech.com/blog/news-blog-uncovering-pathogenic-variants-founding-president-thai-society-human-genetics (2024) [Accessed 4th March 2025]

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