

# Key Theme 3 updates & developments: **Simulating and synthesizing data for biostatistical methods' development, evaluation and dissemination**

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STRATOS online meeting, 27 Jan 2025

Sabine Hoffmann, Georg Heinze, **Tim Morris**

# Georg Heinze, Sabine Hoffmann, Tim Morris



# Key theme 3 plenary talks

**Georg Heinze** Phases of methodological development in biostatistics

**Tim Morris** Structured planning and reporting of simulation studies

**Sabine Hoffmann** Making biomedical research data publicly available while protecting confidentiality

# Talks and discussions I

**Laurence Freedman** described a collaboration between TG2 and TG4 about measurement error and splines (nice example of a phase III, neutral simulation study).

**Sabine Hoffmann** talked through a 'phase IV' simulation study on correcting complex patterns of measurement error in occupational epidemiology.

# Talks and discussions II

**Tim Morris** talked about a collaboration on evaluation of statistical diagnostics in simulation studies, and asked what 'diagnostics' we advocate for but have never evaluated.

**Daniela Dunkler, Michael Kammer, Tim Morris** led a discussion on visualisation of results arising from large and/or 'complex' simulation studies.

**Willi Sauerbrei** talked about reporting and REMARK profiles

# Talks and discussions II

**Sabine Hoffmann** led a discussion on synthetic data.

- Reflection is that some people began the week viewing synthetic data as a panacea: allows data to be shared without having to share real data.
- Sabine disabused people of this notion; it can be very difficult to guarantee privacy.
- Ultimately I think several people came away thinking ‘aiming to share real data might not be such a bad idea!’

# Projects arising / ongoing

- Sabine Hoffmann, Sarah Friedrich and Marvin Wright are working on a level-1 guidance paper on synthetic data.
- There is some discussion to start a TG4 project on adding noise as protection privacy protection.
- The discussion about visualisation of simulation study results set ideas brewing. It's the sort of thing that needs time. I don't think we have (yet) had the spark of inspiration about what to do with it.

# Importantly...

- Sabine, Georg and Tim are collaborating on a paper that is completely unrelated to any of these topics...  
but this would not be happening if we had not worked together on KT3!
- Similarly, Carsten Schmidt has joined a replicability project by Daniela Dunkler, Anne-Laure Boulesteix and Sabine Hoffmann.
- And several others...

So the Leiden meeting created lots of energy and ideas and we will need Banff 2026 to see them through!