Nonclinical Topics Working Group
Industry Insights

IMI2 and NexGETS
an overview

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What is the Challenge?

Efficient and adequate safety assessment remains one of the main challenges in the drug discovery, development and submission process. Recent advances (i.e. eTOX) have shown that sharing public & private pre-clinical data is achievable.

In parallel, the electronic CDISC-SEND format has been chosen for pre-clinical data submission to the FDA. This offers the opportunity to generate and exploit a large amount of organised data to allow the in-depth assessment of the preclinical species predictivity to human.

Ultimately, the challenge is to enhance the drug development process by better prediction of outcomes and, in so doing, reduce the number of failed studies with a consequential reduction in the use of animals.

What is NexGETS and its Aims

NexGETS : Next Generation of Electronic Translational Safety

Its aims are to:

- Develop an internationally accepted guideline for data sharing
- Accrue large sets of preclinical and high-level clinical safety data
- Conduct retrospective data analyses to assess the translation of preclinical to clinical safety outcomes (i.e. interconnection with human data)
- Ensure that participating companies have similar or greater access to data than regulators to facilitate discussion
- Achieve regulatory readiness (supporting/implementing SEND)
- Develop innovative tools for data mining, analysis, display, modelling and prediction

Expected Impact

The NexGETS project aims to set world standards and act as the central partner in terms of preclinical data handling, analysis and use for predictive toxicology.

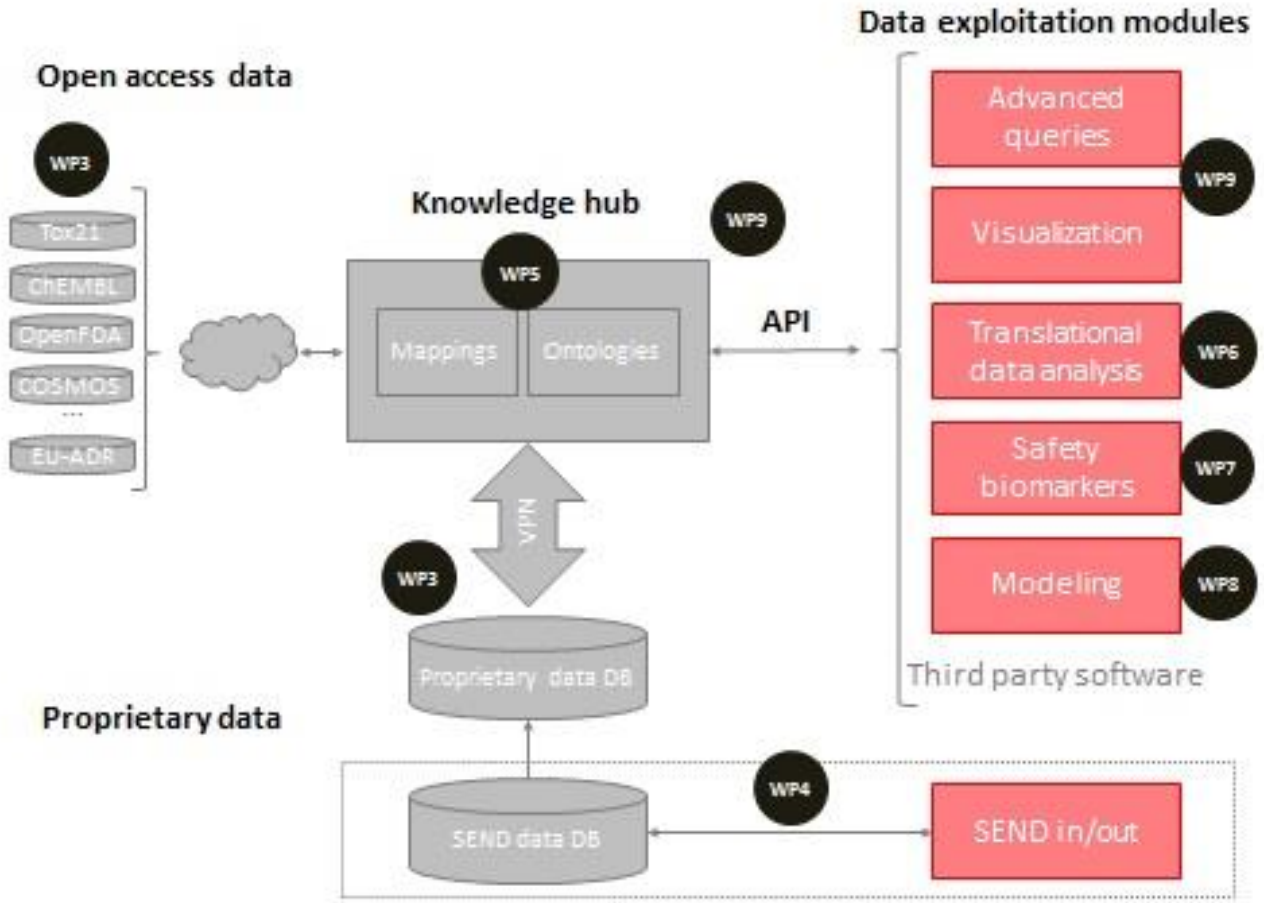
The intention is to significantly reduce the time from drug discovery to prescribing.

As a consequence, the use of experimental animals should be reduced.

This approach will have an impact on the 3Rs[1]

[1] The principles of the **3Rs** (Replacement, Reduction and Refinement) were developed over 50 years ago as a framework for humane animal research. They have subsequently become embedded in national and international legislation regulating the use of animals in scientific procedures.

How NexGETS Hangs Together



Delivery of NexGETS

- This is a five-year project valued at €49M (€20M EU Grant-funded and €29M efpia member company-funded).
- Efpia member companies can fund with cash or with ‘in-kind’ donations (i.e. study data).
- Project starts in September 2017.
- The eTRANSAFE consortium has been awarded the project.
- As for eTOX, Lhasa will operate as the ‘honest broker’ hosting the ‘knowledge base’
- PDS Consultants will be delivering Work Packages 3 (predominantly SEND-formatted and legacy (non-SEND formatted) data) and Work Package 4 (database design – Data Warehouse/Data Mart) in conjunction with Lhasa (the Work Package leaders).

Structure of eTRANSAFE (eTRS)

- The eTRS consortium comprises the majority of the eTOX consortium members (Pharma & non-Pharma)
- The members are a broad spectrum from industry (<60%) and Academia (>40%):

Fundació Institut Mar d'Investigacions Mèdiques (IMIM)	Synapse Research Management Partners S.L.
Lhasa Limited	European Molecular Biology Laboratory (for ELIXIR)
Erasmus Universitair Medisch Centrum Rotterdam	Universiteit Leiden
Universität Wien	Simcyp Limited
Molecular Networks GmbH – Computerchemie	Optibrium Limited
Liverpool John Moores University	Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung e.V.
PDS Computer Software Limited	Universitat Pompeu Fabra

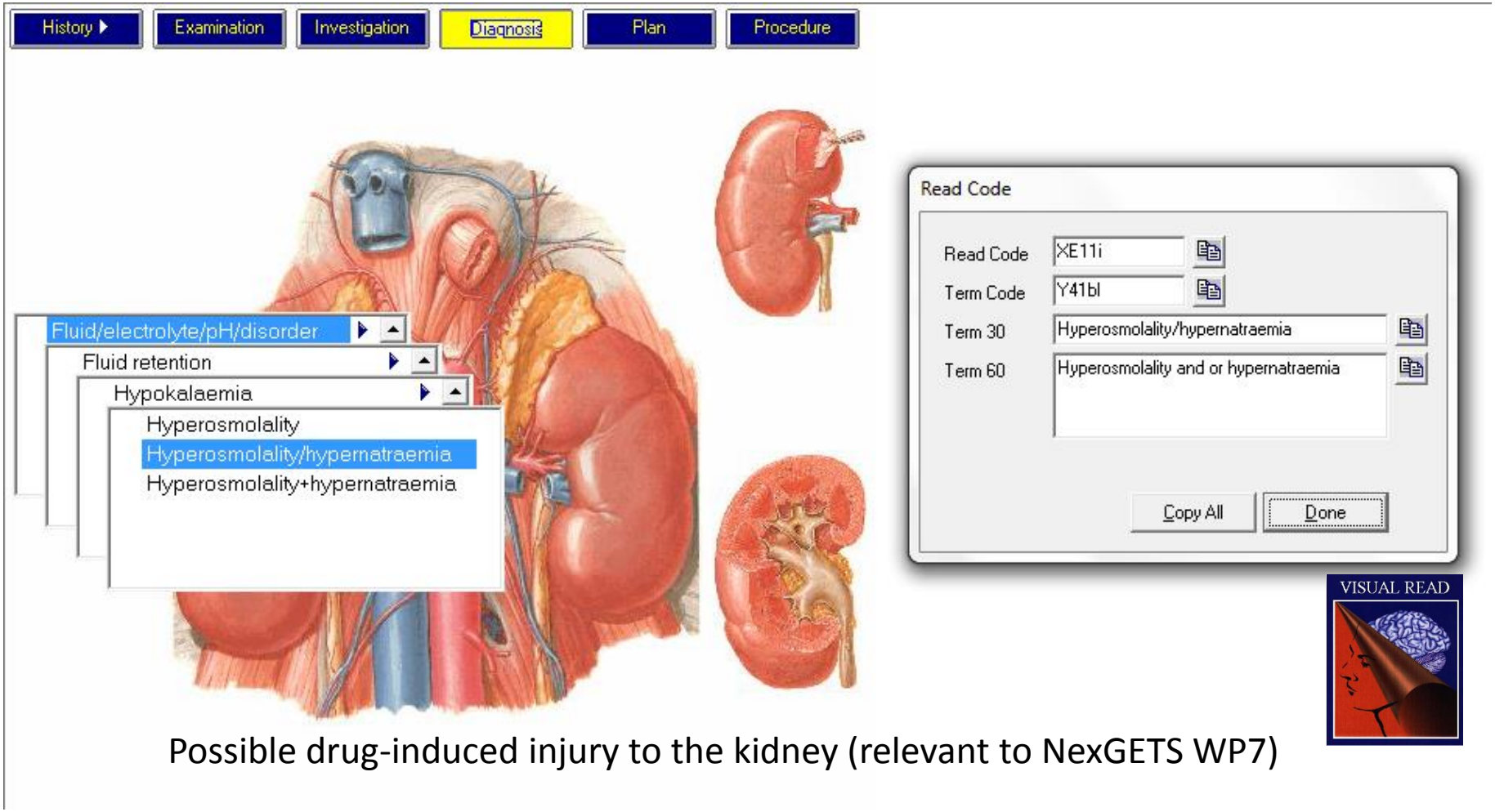
- The currently subscribed efpia member companies are:

Novartis Pharma AG	Bayer Aktiengesellschaft
Sanofi-Aventis Research and Development	F. Hoffmann-La Roche Ltd
Merck KGaA	Janssen Pharmaceutica NV
Institute de Recherche Internationales Servier	AbbVie Deutschland GmbH & Co. KG
AstraZeneca AB	Boehringer Ingelheim International GmbH
Clarivate Analytics	

Foreseen Challenges

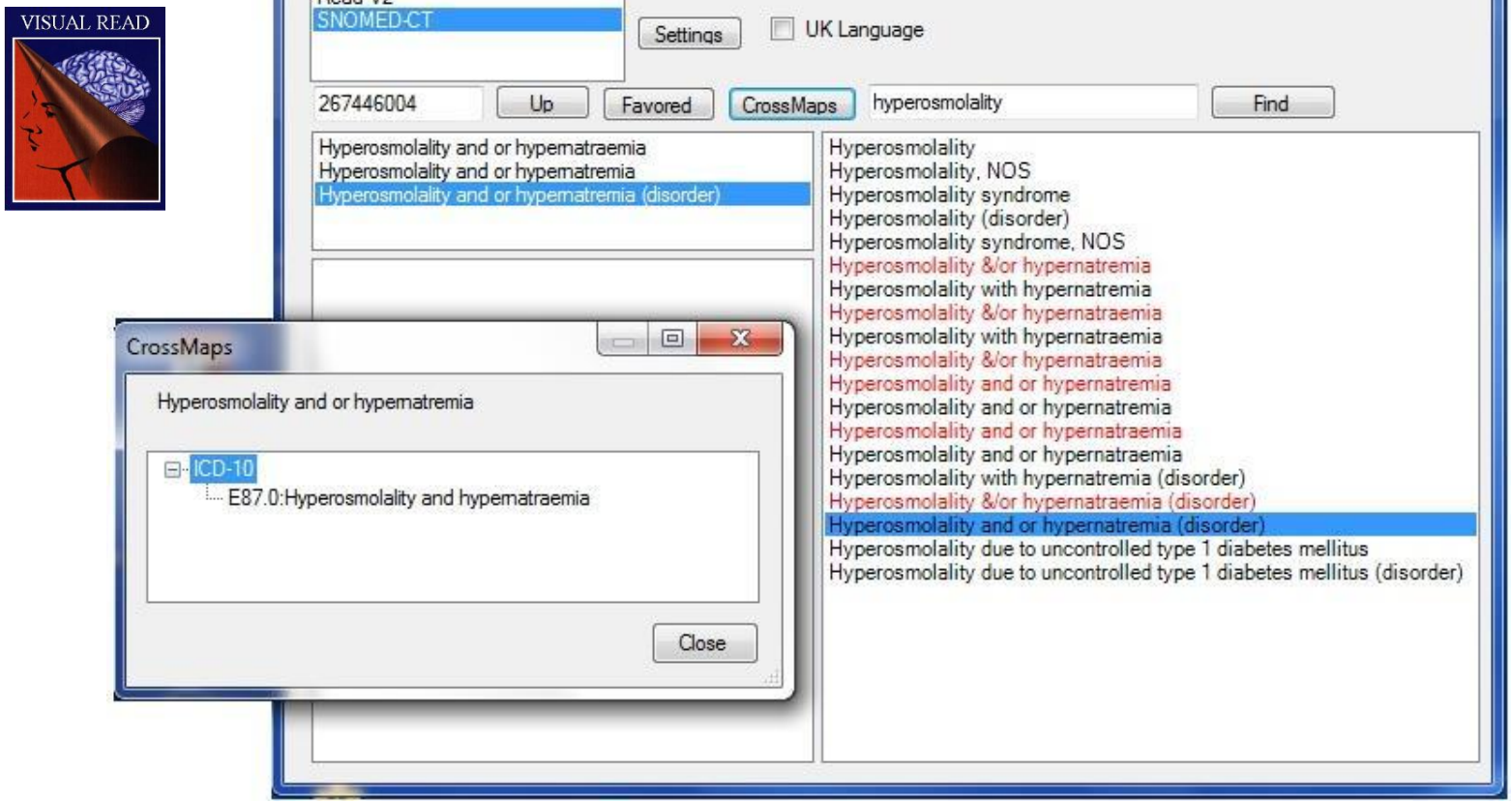
- Limited volume of preclinical data in SEND format
- The consequential need to leverage legacy non-SEND formatted data
- The ability to create SEND formatted data from non-SEND formatted (legacy) data – a specific NexGETS deliverable…
- Obtaining clinical data (i.e. in SDTM format)
- Translating clinical outcomes (e.g. adverse events) across to preclinical terminology (i.e. matching MedDRA coding with CDISC controlled terminologies)
- Supporting clinical coding (e.g. SNOMED-CT)
- Federating data across differing datasets/databases; e.g. chemical structures with originating data.
- Maintaining confidentiality (data anonymisation/redaction)
- etc,…

What is Clinical Coding?

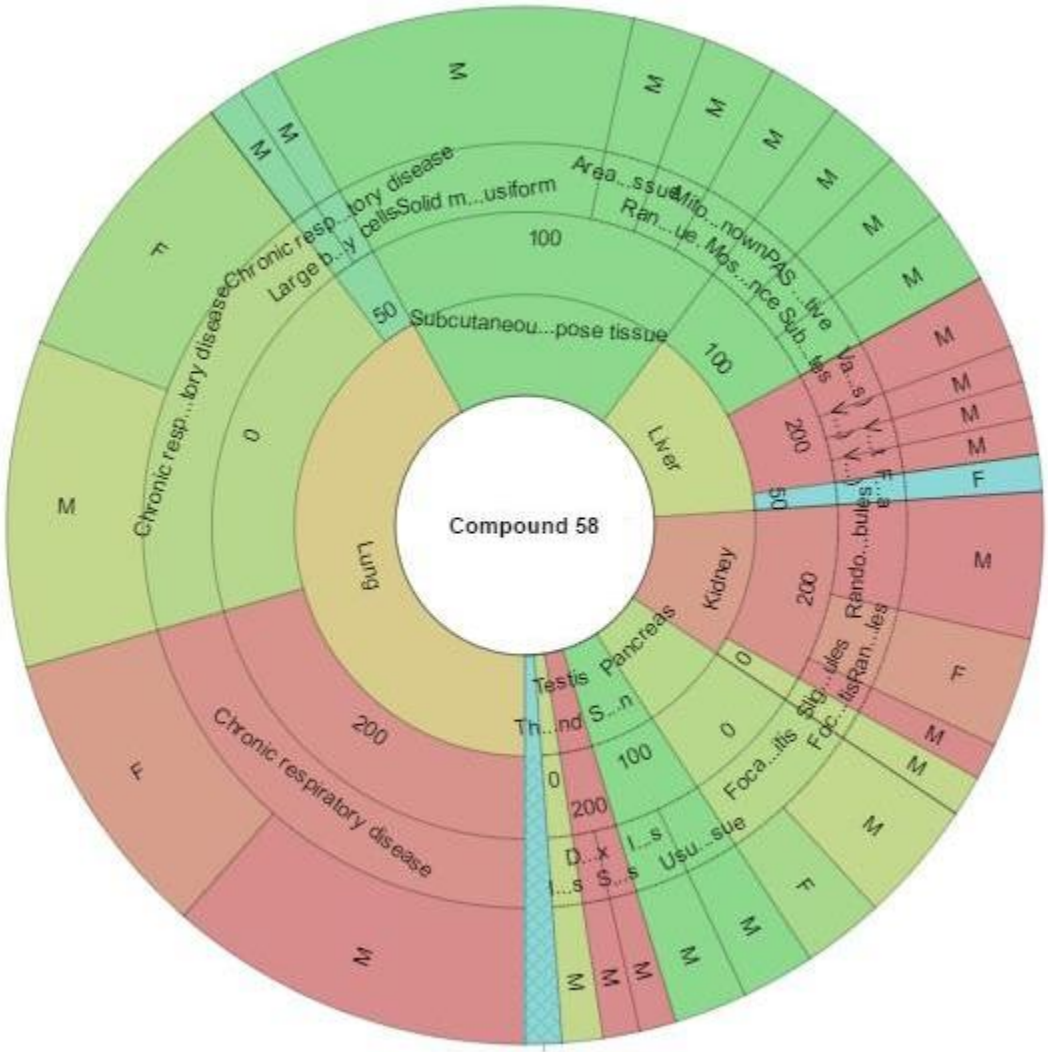


Possible drug-induced injury to the kidney (relevant to NexGETS WP7)

SNOMED-CT & ICD-10 Codes



Data Visualisation



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Histopathology Visualisation Sub-group

See Poster

KRONA-based Visualisation

Thank You

pds consultants

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