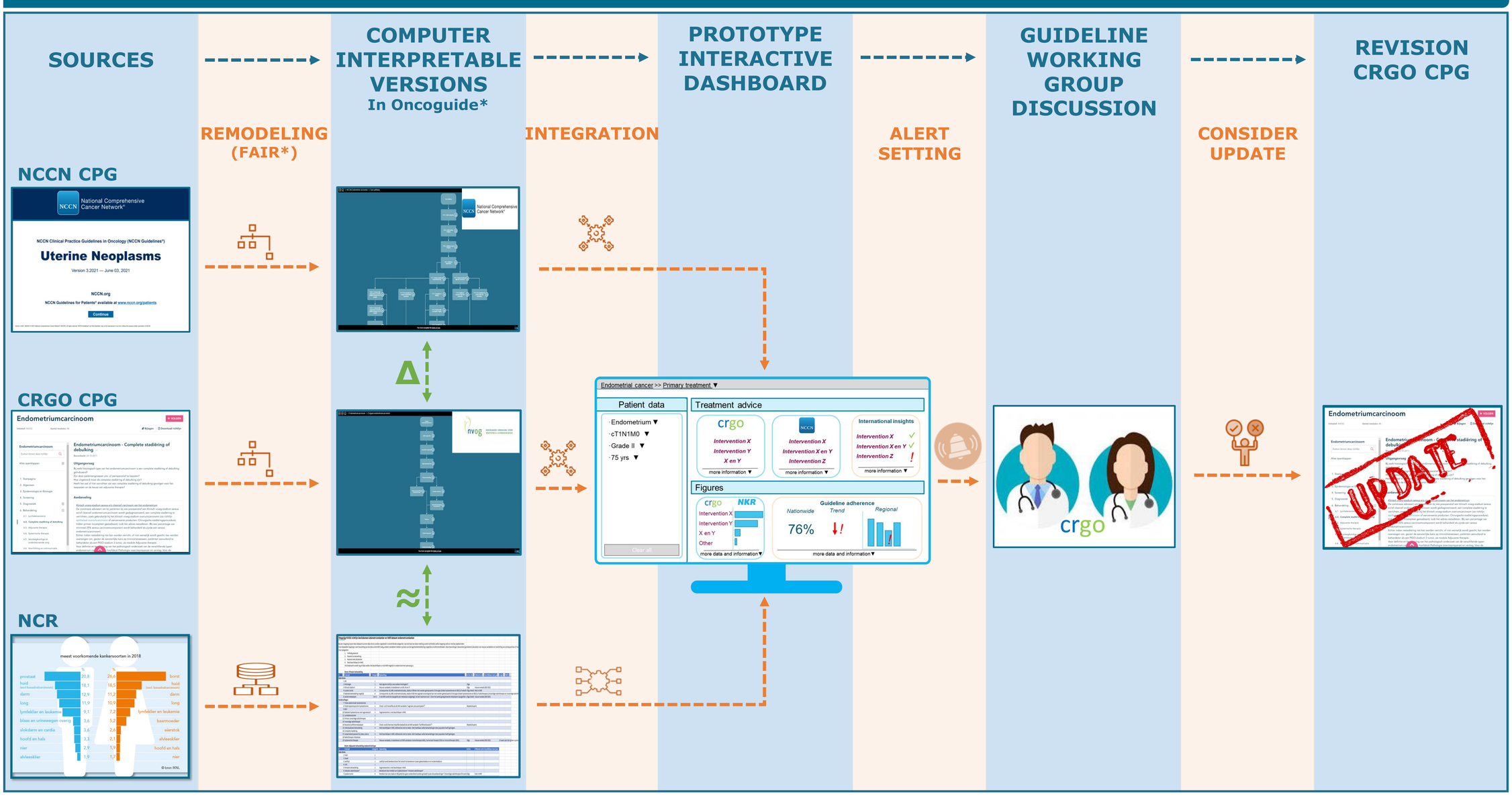
Using Data-Driven Decision Algorithms and Real-World Data for Updating Clinical Practice Guidelines

K.C.W.J. Ebben[1] (k.ebben@iknl.nl), T. van Vegchel[1], C.D. de Kroon[2], C.E. Schmeink[3], A. Moncada-Torres[1], O. van der Hel[1], M. Karaalioğlu[1], J. van der Werf[1]

1 Department of Research and Development, Netherlands Comprehensive Cancer Organisation (IKNL), Utrecht, The Netherlands; 2 Department of Gynecology, Leiden University Medical Center, Leiden, The Netherlands; 3 Department of Gynecology, St. Anna Hospital, Geldrop, The Netherlands

FIGURE



NCCN *- National Comprehensive Cancer Network (US)*
CRGO *- Guideline Working Group Oncological Gynecology (NL)*
NCR *- Netherlands Cancer Registry*
CPG *- Clinical Practice Guideline*
FAIR *- Findable, Accessible, Interoperable, Reusable Data Principles**

*Main features of CPG update process in the **ALERTNESS*** project*
Methodology, software and process development
Scientific analyses for structured CPG comparison and Real-World Data

BACKGROUND

- Clinical practice guidelines (CPGs) are commonly structured as manuals, where best practices are described as free text.
- As most oncological CPGs have an extensive care pathway, keeping these CPGs unambiguous and up-to-date is complex.

OBJECTIVE

- We propose innovative solutions that allow guideline developers to act and consider updates when developments in science (represented by the National Comprehensive Cancer Network (NCCN)) CPG or notable trends in clinical practice (represented by the real-world dataset of the Netherlands Cancer Registry (NCR)) are identified.

MATERIALS AND METHODS

- First, the Dutch national and NCCN endometrial cancer CPGs were translated into clinical decision trees (CDTs) and published in Oncoguide*. Then, we withdrew an endometrial cancer dataset from the NCR. Thereafter, we designed an information standard by applying FAIR data principles*. Finally, analysis and comparison functionalities were made available in a prototype dashboard.
- Predetermined thresholds were implemented that raise signals to the guideline developers.

RESULTS

- Both CPGs were successfully translated into CDTs. This yielded 10 and 15 CDTs, 58 and 72 data-items (patient and disease characteristics), 57 and 97 subpopulations and 61 and 138 recommendations for the Dutch and NCCN CPG, respectively.
- The NCR dataset was successfully mapped onto 5 CDTs from the Dutch CPG. The data was projected onto the CDTs and identified adherence levels for all subpopulations and alternative treatments for non-adherent cases.

CONCLUSION

- This data-driven approach could serve as automated surveillance to determine best clinical practice for patient (sub)populations and enhance an acceleration in creating living recommendations.
- Moreover, this approach is suitable for application in other diseases and settings.

* INFORMATION *<scan or click>*

ALERTNESS
oncoguide Integraal Kankercentrum Nederland
NCR Netherlands Cancer Registry
GO FAIR

More information: Session S08 - Visualisation of data and recommendations on Friday, Sep 23, 2022 11:30 AM - 1:00 PM
Oral presentation by Thijs van Vegchel about Visualising data-driven decision algorithms for consulting clinical practice guidelines