amongst HPRs across Europe. It also shares information about the work of the HPR Standing Committee, Study Groups as well as showcasing projects being carried out by HPR country member associations. The new design for the newsletter will be highlighted, alongside the content structure and HPRs will be encouraged to contribute to ensure the newsletter stays relevant to its audience.

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WEDNESDAY, 13 JUNE 2018

Statistics made simple: a practical approach to complex concepts

SP0016 STEPWISE OR NOT TO STEPWISE? THE DO'S AND DON'TS OF MULTIVARIABLE MODELLING

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Introduction: Different types of regression analyses, including linear, logistic, and Cox regression, are commonly used methods in medical research. Usually, these analyses include more than one covariate as independent variables. This is particularly the case in observational studies: When investigating the possible association between an exposure and an outcome, there can be a large number of potential confounders. Examples are age, sex, body mass index, and lifestyle factors. How should we choose which variables to include in the model? Here I shall focus on two issues:

- Attempting to include too many covariates in the analyses
- Use of stepwise selection of covariates

These are among the most frequently encountered issues in statistical review of manuscripts submitted for the Annals of the Rheumatic Diseases Lydersen 2015 Limit the number of covariates

With a limited number of observations, how many covariates can you include? Traditional rules of thumb state that the ratio of observations per variable ought to be in the size of order 10. Some authors recommend 15, some 20, others state that 5 is sufficient. See Lydersen, 2015 and references therein.

Do not use stepwise selection

Stepwise selection of covariates basically means that only covariates that are statistically significant, typically with a p-value less than 0.05 or 0.10, are included in the model. A fundamental problem is the following: As always is the case in estimation, regression coefficients are estimated with some uncertainty. Hence, some are underestimated, and some are overestimated, that is, too far away from the null hypothesis. Including only covariates with small p-values causes overestimated coefficients to be more likely to be selected. This introduces bias away from the null hypothesis. Stepwise procedures used to be very popular, but today an increasing number of analysts criticise such methods. For example, Rothman et al. 2008 page 419 state: "There are several systematic, mechanical, and traditional algorithms for finding models (such as stepwise and best-subset regression) that lack logical and statistical justification and that perform poorly in theory, simulations and case studies ... One serious problem is that the P-values and standard errors ... will be downwardly biased, usually to a large degree".

Recommendation: Selection of covariates should be based on the research question at hand and on substantial knowledge such as what is biologically plausible. Chapter 10 'Predictor selection' in the book Vittinghoff et al. 2012 gives good guidance. Check that the number of covariates is small enough compared to the number of observations. Do not use stepwise selection.

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E-health for better care

SP0017 BITS AND BYTES: FITTING MEDICAL INFORMATION – PICASO THE PLATFORM FOR IMPROVED PERSONAL, COORDINATED CARE

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Coordination of care plans between healthcare sectors and efficient management of patients with co-morbidities is of large demand. Rheumatoid arthritis (RA) patients are at increased risk of cardiovascular diseases. Different stakeholders are potentially involved in the EULAR recommended management processes. Optimised orchestration of accumulated information is of major importance to ensure data quality, meaningful management processes and cost effectiveness. A newly developed information and communications technology platform within the Horizon2020-funded PICASO-project (www.picaso-project.eu) will support a continuum of care from hospitals and outpatient clinics to the home. The PICASO platform will be developed and trialled with patients and clinicians. First experiences will be reported. The platform will become available for RA-patients in routine care but also for wider applicability in Rheumatology and other chronic diseases.

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SP0018 SMART WEARABLES AND HEALTH APPS – THE RIGHT TOOL FOR HEALTH MONITORING AND IMPROVING QUALITY OF HEALTH?

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What role can technology play in enabling a shift from a traditional paternalistic model of care to a model based on empowered patient sharing ownership? In the traditional model, patients are fully reliant on the healthcare professional for information, diagnosis and treatment, with complexity to navigate through the ecosystem and where physicians are empowered rather than patients. Patient empowerment is enhanced thanks to technology enabled care, in which patients have access to their medical files, can use tools that allow them to be proactive and focus on prevention and where self-management is supported across the treatment pathway. Smart wearables and health apps are becoming more widespread and a commodity, while more and more research is being performed on the effectiveness of such devices on the quality of life of patients. The design of wearables and health apps itself can be approached in a patient-centric way, to maximise the benefits for patients and the uptake by patients. This presentation will discuss some evidences of the impact of technology on improvement of quality of life and how patients should be included in the design process.

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EULAR projects in paediatric rheumatology and UCAN

SP0019 UCAN AND PRINTO ALIGNED TO LINK BED AND BEDSIDE: PERSPECTIVE FROM THE BENCHSIDE

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In the past 2 decades we have gained important insights on the mechanisms of disease and therapy in children with Juvenile Idiopathic Arthritis (JIA). These insights have resulted in several game-changing therapeutic modalities in several