C-D3-04:
Governing Access to a Distributed Research Network's Data Resources

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To answer many public health questions, it is essential to use information from more than one electronic data system, and efficient ways are needed to securely access and use data from multiple organizations while respecting the regulatory, legal, proprietary, and privacy implications of this data use and access. One approach centers on the development of distributed research networks that allow data owners to maintain confidentiality and physical control over their data, while permitting authorized users to ask essential questions. Once such a network is fully operating and key elements are in place, sharable data resources can be made available to approved network users, under approved conditions. For instance, data from a large cohort of hypertensive patients with five years of utilization (a hypertension cohort) could be available on the network. The following questions will need to be addressed: Who can have access? Under what conditions should access be granted? What policies/procedures are required? To address the specific needs associated with governance of a network's resource(s), the authors call for the establishment of user eligibility requirements, policies to deal with funders (i.e., access rules for study funders), clear standard operating procedures, and guidelines for accessing the network. Recommendations to meet to those needs include: 1) establishing data oversight policies; 2) defining responsibilities for data resource access; 3) defining responsibilities for data owners at each site (i.e., responding to queries when requests come in); 4) creating standard operating procedures for the data resource; 5) creating collaboration guidelines for external partners; and 6) monitoring overall resource use. For the purpose of this poster, we propose to illustrate responsibilities for data owners at each site.

PS1-01:
Digital Scholarship: Scientific Publishing at the Crossroads

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Background/Aims: Scholarly communication is the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. The traditional formal means of interchange, publication in peer reviewed journals, is at the core of the communication infrastructure. However, the structures and processes by which scholars communicate have undergone a major transformation in recent years with the advent of the digital age. New electronic technologies for access to information appear to be revolutionizing scholarly publishing, aptly defined by the term, digital scholarship. Current trends in the chaotic scholarly publishing market can be perceived as both opportunities for and threats to digital scholarship. **Methods:** Digital scholarship is in a state of unprecedented upheaval as publishers, librarians, legislators, scholarly societies, scientists and other scholars engage in tactics to propel change in directions that promote their individual goals. Strategies involve remodeling the publishing market, modifying academic and research institutional procedures, and influencing public policy. **Results:** Emerging digital publishing technologies, increasing volume of scholarly works, and decreasing satisfaction with a costly and dysfunctional economic model are changing the fundamental structure of scholarly publishing. Research institutions, as well as government and funding agencies, are implementing or exploring strategies which promote free and open access to research results. These include alternative copyright arrangements, e-print archives and digital repositories. **Conclusion:** Scholars, researchers, and society at large gain tremendous benefits from the expanded dissemination of research findings. However, several factors have impeded the progress of digital scholarship, including efforts to protect publishing revenues and profits, legal licensing restrictions, and the traditional culture of academia. It is therefore critical that the scientific community is actively engaged to ensure that the advancement of scholarship takes priority in the development of new publishing models.

PS1-17:
Developing an Analytical Tool for Assessing the Adequacy of State Health Information Exchange Laws

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Aims: To develop and test an analytic legislative tool that provides states with the ability to analyze and propose reform to laws related to the exchange of electronic health information. **Background:** Through extensive research, the multi-state Harmonizing Security and Privacy Law Collaborative (HSPLC) found myriad barriers to health information exchange in laws and business practices. In some cases, barriers are beneficial because they protect people's privacy. However, barriers can be problematic when they prevent the timely exchange of information needed for the treatment of patients. There are many inconsistencies in state and federal laws and among state statutes in their definitions, organizational structure, and content. Some states have adopted new legislation that addresses the exchange of health information that may further exacerbate differences among states and impede interstate exchange of electronic health information. **Methods:** HSPLC developed a set of analytical tools and a narrative guide, the Roadmap, to assist states in implementing an effective legal framework for the review and adoption of legislation that supports health information exchange (HIE). The tools and Roadmap were created through extensive research to identify best practices for identifying, evaluating, and reforming state laws related to the disclosure of electronic health information. **Results:** HSPLC found that various state resources (legal, legislative, healthcare policy, healthcare providers, and consumers) are necessary for successful completion of the Roadmap to identify opportunities for legislative reform. HSPLC believe that states will have greater likelihood of success in achieving legislative reform if they use the Roadmap and reach out to other states contemplating a change in legislation. Interstate collaboration and coordination are essential if we are to achieve a national legal and technical infrastructure that facilitates health information exchange. **Conclusions:** Legislation in most states does not adequately address the exchange of electronic health information. Drafting of legislation must take into account a state's unique environment and culture, and the needs and support of stakeholders. The goal of using the analytic tool is to protect health information while removing barriers that impede the exchange of vital information. The HSPLC Roadmap provides a step by step process to analyze and reform state legislation.

PS1-28:
Optimizing Health Informatics Interventions From the Patient's Perspective: Focus Group on Improving Safe NSAID Use

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Background: Patient-provider messaging in an electronic medical record (EMR) system provides an opportunity to create and sustain productive patient-provider interactions. We elicited patient perspectives on design, benefits, and concerns to improve usability and efficacy of a proposed health informatics intervention to support surveillance of, and provider feedback on, over the counter (OTC) non-steroidal anti-inflammatory drug (NSAID) use. **Methods:** We conducted four focus groups involving Kaiser Permanente Georgia (KPG) adults 25–70 years old who had a medical condition for which NSAIDs should be used cautiously or had a recent prescription for NSAIDs. The focus group elicited information regarding: OTC NSAID use (including recognition of risks and side effects), design of an OTC NSAID survey to be delivered via KP.Org (the secure KP Internet portal for patient-physician messaging), benefits and concerns about transmission of this information via electronic messaging to their primary care physicians, and

willingness to participate in a health informatics intervention to improve safe NSAID use. We then developed a concept map and classification scheme for analyzing transcripts from the focus groups. Two trained coders labeled the transcripts using ATLASti. **Results:** Forty-eight KPG adults participated in the focus groups: 83% female; 50% African American; median age 54 years. Fortyseven participants indicated current or recent use of OTC NSAIDs. Easy access to OTC NSAIDs (low cost, no prescription required) promoted their use; however, self-medication strategies often combined multiple OTC NSAIDs or increased OTC NSAID dosing to obtain pain relief. Participants acknowledged that the proposed intervention would benefit their health care through more complete reporting and documentation of OTC NSAID use in their EMR. Concerns were expressed about: keeping this information up-to-date, if the information would be used or (if used) evaluated by a qualified provider on their health care team, and mode (e-mail or telephone) and timeliness about how they would be informed about potential risks from their OTC NSAID use. **Conclusions:** Consistent with the Chronic Care Model, participants acknowledged that the proposed intervention would create productive interactions with their providers and likely improve their health outcomes. Their perspectives also yielded some unexpected insights (e.g. importance of timely updating of OTC NSAID use) and have resulted in modifications to the overall intervention design.

PS1-30:

Research Mentor: A Web-based Reference for Planning and Preparing a Research Proposal

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Background: National emphasis on interdisciplinary and translational research as research priorities has created new challenges in grantsmanship. The Office of Scientific Writing and Publication at Marshfield Clinic Research Foundation utilized an informatics approach to create a comprehensive educational resource to assist new and established investigators engaged in research design. An interactive website accessible on the institutional intranet was designed to provide links to information, resources and support personnel to assist with navigating the central and peripheral processes required for successful procurement of institutional and external grants. **Methods:** Research Mentor was designed to provide comprehensive guidance to research fundamentals in a conveniently accessible interactive, user-friendly, online format. The website included resources and links to guidelines for grant development including feasibility analysis and study design planning, biostatistical considerations, peer review, grantsmanship, intellectual property protection, regulatory policies, computer-based training, institutional and national policies governing research, and access to funding agencies, forms, and appropriate support staff. The website was beta-tested by 25 physicians and scientists with varying degrees of research experience and refined based on user comments before the website was launched in spring of 2008. **Results:** Research Mentor proved to be an effective orientation tool for researchers by enhancing grantsmanship skills and providing access to research resources. Research Mentor has been effective in linking the researchers with appropriate support personnel who offer further assistance to researchers in producing competitive proposals. Tools custom-designed for Research Mentor to assist in project planning and design have been frequently accessed by investigators and reduce time spent by support staff on assisting with project planning. **Conclusions:** Informatics venues such as interactive user-friendly online educational websites can offer step-by-step guidance to research design and processes by providing a comprehensive cross-disciplinary research resource that offers value to new and established investigators alike. These tools promote networking with experienced support personnel to facilitate production of competitive grants.

PS1-35:

Use of Web-based Rheumatology Practice Visual Display Tools With an Electronic Health Record (EHR)

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Background: A variety of different types of data (i.e., patient-reported, lab, imaging, clinician-documented) are required to guide and improve rheumatologic treatment decisions. Although these data elements are available in the electronic health record (EHR), the demands of a busy practice do not allow sufficient time to effectively review all sources of data. Moreover, the EHR does not offer a facility to bring relevant but disparate data together in an integrated visual display. We developed a novel web-based software program–Rheum-PACER (Patient Centric Electronic Redesign) that displays relevant data in a web-based dashboard format. We report on the results of the first phase of implementing Rheum-PACER, i.e., identifying key data elements and designing the user interface. **Methods:** Rheum-PACER is a web-based program that obtains, aggregates, and/or exchanges information from/with four sources: patients, nurses, rheumatologists, and the EHR. It is separate from, but accessed seamlessly from within, the EHR. An iterative consensus process was used to identify the data elements desired by/from each of these four sources. **Results:** The Rheum-PACER dashboard is comprised of four key tabs, each of which allows the provider to complete a specific task within a single interface. The "Outcomes General" tab displays parallel temporal trends of patient reported outcomes (PRO), labs, and rheumatic medications. The "Outcomes Composite" tab displays temporal trends of composite PRO scores and physician-recorded data (e.g., tender joint counts), labs, and rheumatic medications over a 12-month period. The "Demographics" tab visually parses rheumatic versus other diagnoses and medications and allows for entry of data not typically found in the EHR (i.e., date of first rheumatic disease diagnosis). The "Construction" tab is used to construct a visit progress note. This tab incorporates pre-populated patient reported data (e.g., events since last visit, review of systems) and EHR data (e.g, medications, lab values) and allows for entry of nurse and physician-derived measures (e.g., physical exam, global scores). **Conclusions:** Web-based software tools that are external to, but which interact with, the EHR have the potential to improve clinical practice and clinical decision-making by providing clinicians with information that is aggregated, formatted, and presented in a way that reflects their cognitive clinical decision-making process.

Pharmacoepidemiology

C-A4-01:

Computerized Clinical Decision Support During Drug Ordering for Long-term Care Residents With Renal Insufficiency

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Objective: To determine whether a computerized clinical decision support system (CDSS) providing patient specific recommendations in real- time improves the quality of prescribing for long-term care residents with renal insufficiency. **Design:** A randomized trial within the long-stay units of a large long-term care facility. Randomization was within blocks by unit type. Alerts related to medication prescribing for residents with renal insufficiency were displayed to prescribers in the intervention units and hidden but tracked in control units. **Measurement:** The proportions of final drug orders that were appropriate were compared between intervention and control units within alert categories: 1) recommended medication doses; 2) recommended administration frequencies; 3) recommendations to avoid the drug; 4) warnings of missing information. **Results:** The rates of alerts were nearly equal in the intervention and control units: 2.5 per 1000 resident days in the intervention units and 2.4 in the control units. The proportions of dose alerts for which the final drug orders were appropriate were similar between the intervention and control units (relative risk 0.95, 95% confidence interval