

Abstract/Proposal #22803

iasis: Big Data for Precision Medicine

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Abstract Text:

Background: iASiS envisions the transformation of clinical, biological and pharmacogenomic big data into actionable knowledge for personalized medicine and decision makers. Within the context of iASiS this is achieved by integrating and analyzing data from disparate sources, including genomics, electronic health records, and bibliography. The clinical heterogeneity of Alzheimer's disease (AD) presents difficulties for the diagnosis, as well as for the assessment of response to, and therefore evaluation of, new treatments. iASiS paves the way towards personalized medicine for AD patients, by harnessing the potential of big data sources to produce evidence-based clinical knowledge in highly novel and potentially powerful ways. **Methods:** iASiS offers a novel methodology for identifying or confirming associations, responses to treatment, prognosis, and outcomes in AD. The iASiS framework foresees the deployment of an AD-specific knowledge graph. The latter will result from the retrieval, integration and the analysis of AD related biomedical data from heterogeneous resources. iASiS users will be informed on available knowledge relevant to the subject of study. Employing novel inference techniques the iASiS knowledge graph will be able to acquire new knowledge by combining pieces of information that may not be apparent when examining each source separately. The final iASiS system will be a uniquely rich and up to date source of information, which would otherwise be fragmented into different sources. **Results:** The initial iASiS components tested against a rich data set of biomedical literature comprising more than 150000 textual AD related sources yielded very accurate results. The iASiS components when asked to provide appropriate treatment for AD patients based on the patients' genetic (allelic) status managed to accurately identify alleles of AD risk with related treatments according to the current bibliography as well as information related to current policies. **Conclusions:** iASiS will allow the generation of knowledge that will support precision medicine and more effective treatments for Alzheimer's disease. The iASiS project invites health research centers, hospitals, and health organizations to contribute both with pharmacogenomics and clinical data, and to profit from the data processing and analytics that the iASiS platform will offer.

Topic Selection:

[Posters Wed] Public Health and Psychosocial: Dementia Care Research (research projects; nonpharmacological)

Slot:

P4-11: Wednesday, July 25, 2018: 9:30 AM-4:15 PM

Final Paper##:

P4-151

Title:

Iasis: Big Data for Precision Medicine

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Dual Submission Rules:

I acknowledge that I cannot also submit this abstract for oral presentation consideration at the Alzheimer's Imaging Consortium (AIC).

Preferred Presentation Format:

Oral Presentation Preferred, but will do Poster Presentation if so assigned

Was this research funded by an Alzheimer's Association grant?

No

Abstract Submission Affirmations:

I agree to the Abstract Submission Affirmations.

Do you plan to upload figures or tables to supplement your abstract text?

No

Theme:

Public Health and Psychosocial

Topic:

Dementia Care Research (research projects; nonpharmacological)

Sub Topic:

Use of technologies

Learning Objectives:

- Incorporate the knowledge provided by iASiS in order to support precision medicine.
- Use the knowledge gained by iASiS to provide more effective treatments and diagnosis for Alzheimer's disease.

Keywords:

diagnosis, early onset and longitudinal study

Fellowship:

No.

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Any relevant financial relationships? No

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