**Medical Workflow Design and Planning Using Node-Red Data Fusion**

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**BACKGROUND/OBJECTIVES**: The process of clinical planning relies heavily on different data points about a patient, and these data points are often scattered among different reports, charts, EMR/EHR systems, etc. In order to identify all of the pertinent information regarding a patient, and keep that information in mind when making important clinical decisions, healthcare providers are undertaking a significant amount of mental strain – or cognitive load – to complete clinical tasks. EMR/EHR systems are often intended to help mitigate this cognitive load, and improve overall speed, accuracy, and workloads. Unfortunately, most of these systems fail in this direction, and often do not provide enough support in the way of clinical planning. We propose a tool using data fusion processes which can be used to provide a workflow-based design that better encompasses the thought process and procedures healthcare providers follow in order to make meaningful clinical plans

**METHOD**: Using Node-Red, a series of custom node-types were implemented to define patient-relate information, data sources, perform data fusion, and monitor patients using system alerts. These nodes are supported by a DSL that allows the prototype to enact the appropriate functions, as well as allow users to define the rules that the data abides by while undergoing data fusion to produce the appropriate outputs. These nodes are demonstrated through an implementation of 3 different care pathways to simulate different clinical workflows.

**CONCLUSION/IMPLICATION**: Through the care pathways, it is evident that data fusion has the capacity to provide meaningful clinical plans using data fusion. This process provides a more complete overview of a patient than a singular dataset, and with proper research and development this tool may also provide opportunities for machine learning and automation to incorporated to allow further time and cognitive load reduction among healthcare providers.