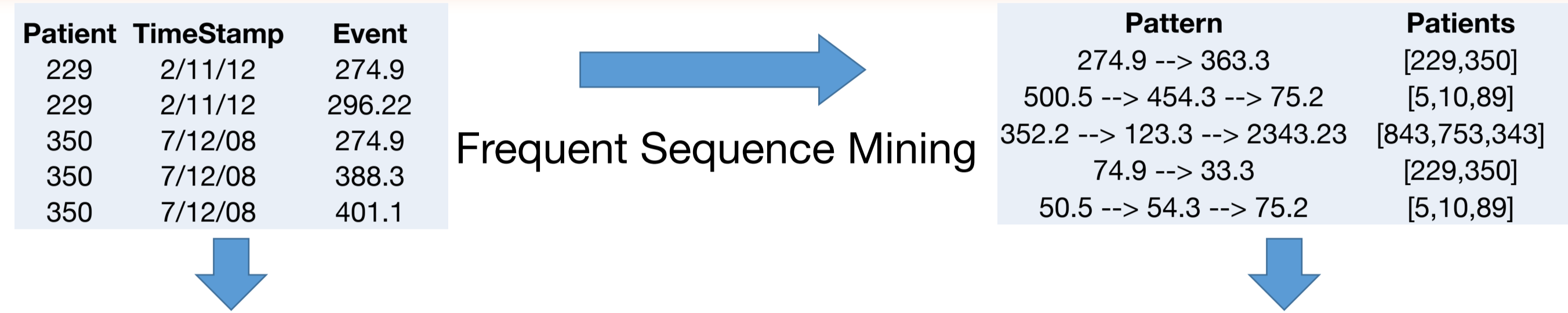# Peekquence: Visual Analytics for Event Sequence Data

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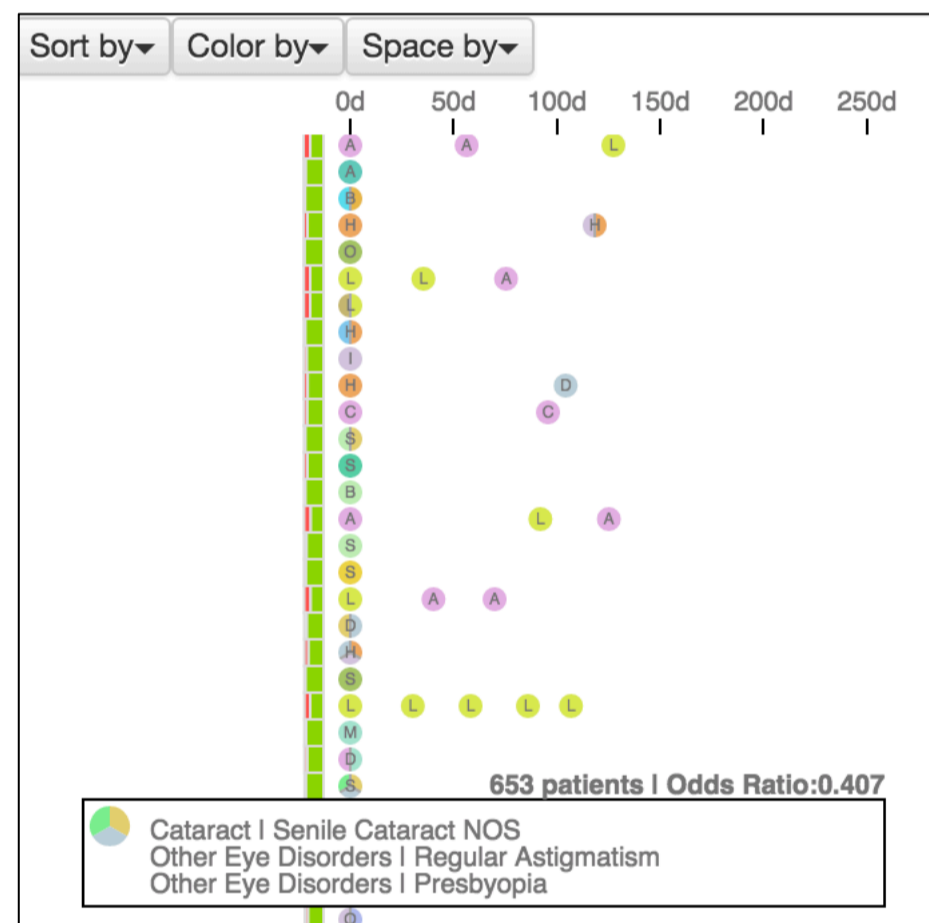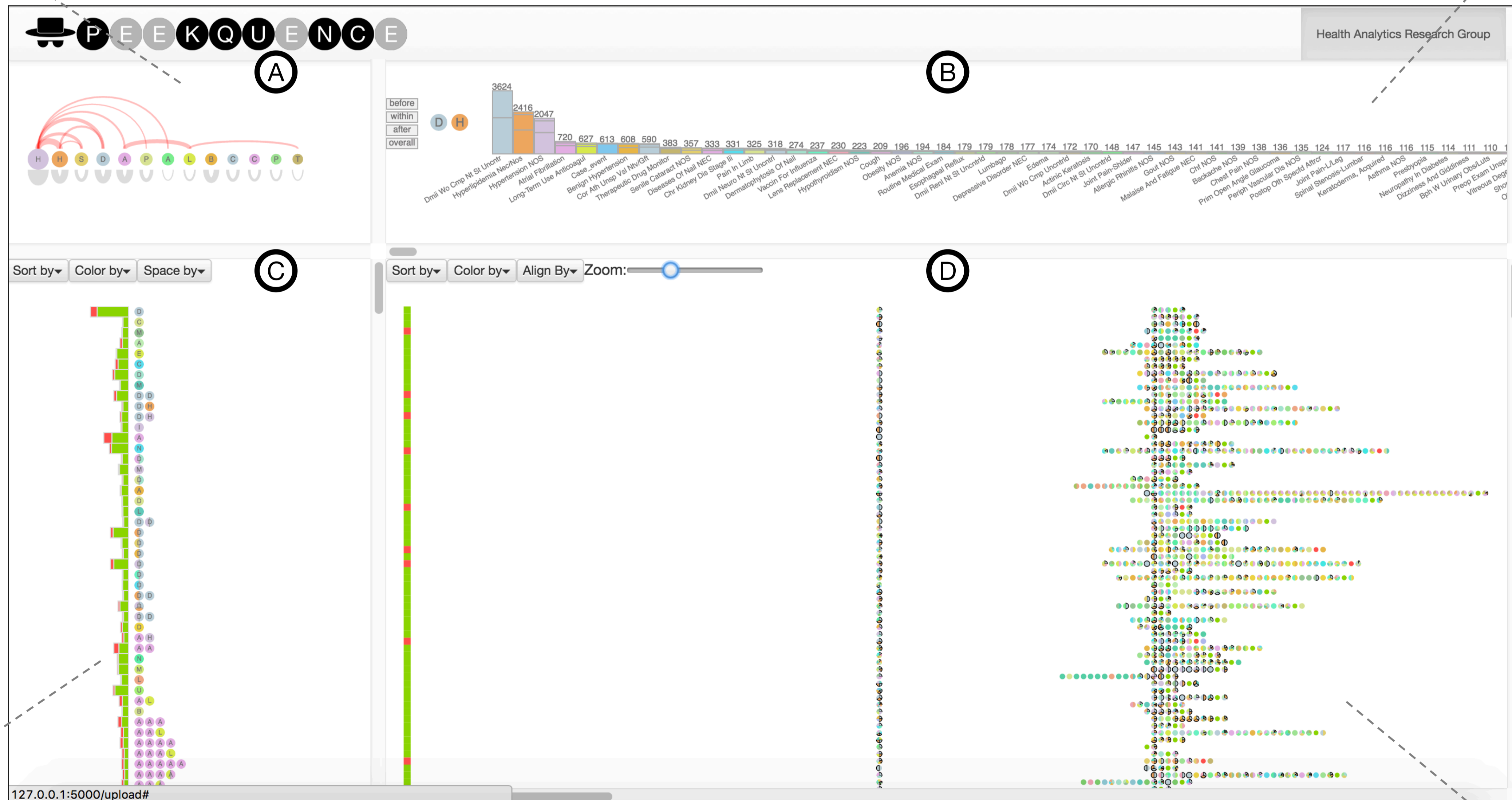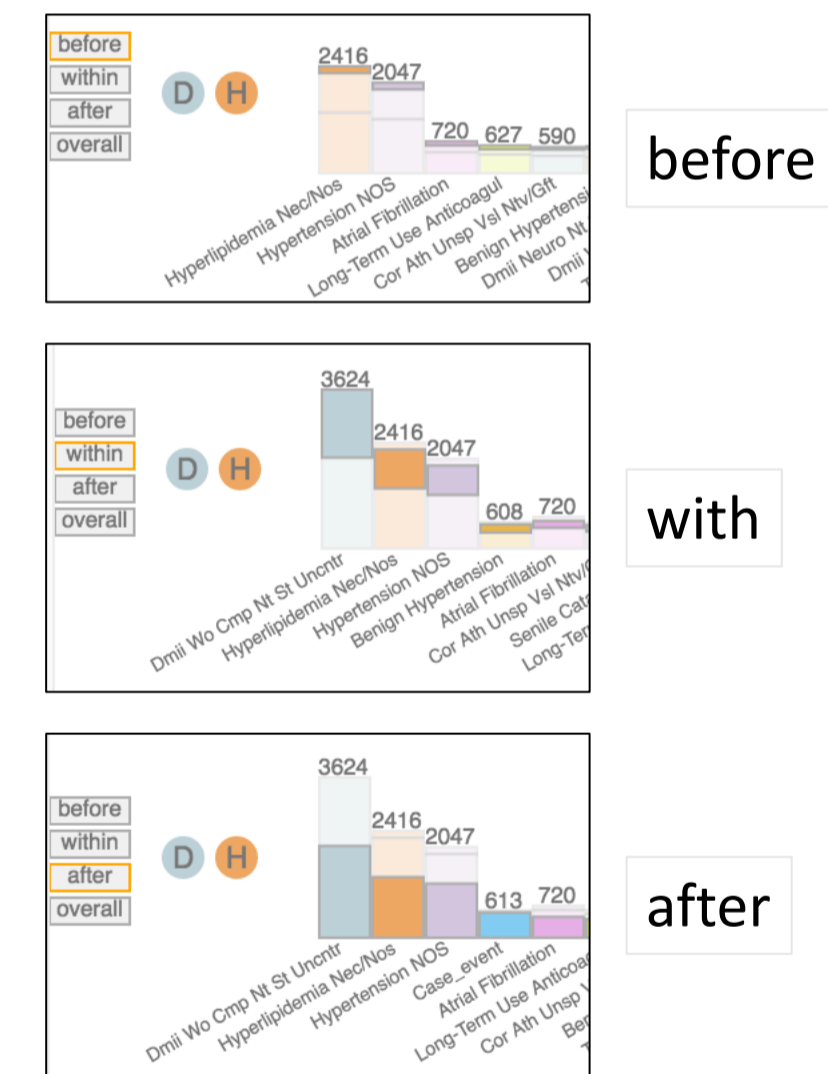Contact: bumchul.kwon@us.ibm.com

(A) The sequence network view shows the frequency of event sequence occurrences within patterns mined from the Frequent Sequence Mining algorithm. Users can filter the pattern list view shown in (C) by clicking on a node (event) or edge (an event sequence of 2 consecutive events).

Peekquence integrates Frequent Sequence Mining and Visualization to support interactive exploration of common care pathways. The four views of **Peekquence** integrated with interactions help users make sense of patterns from the results of the sequence mining algorithm.

(B) The event co-occurrence histogram view showing the frequency of events co-occurring with a pattern selected ("D", "H" in this example). The histogram can be sorted by event types that occur before, with, and after the selected pattern as shown below.

Patient	TimeStamp	Event
229	2/11/12	274.9
229	2/11/12	296.22
350	7/12/08	274.9
350	7/12/08	388.3
350	7/12/08	401.1

Frequent Sequence Mining

Pattern	Patients
274.9 --> 363.3	[229,350]
500.5 --> 454.3 --> 75.2	[5,10,89]
352.2 --> 123.3 --> 2343.23	[843,753,343]
74.9 --> 33.3	[229,350]
50.5 --> 54.3 --> 75.2	[5,10,89]

The pattern list can be sorted, spaced, and colored with respect to various attributes of patterns. In this view, each pattern is spread out with respect to average time between events.

(C) The pattern list view showing patterns mined from the Frequent Sequence Mining algorithm with event sequences (colored circles with letters) as well as bars of patients with the ratio of case and control labels (diagnosis of a disease).

The patient timeline view can be aligned to the left.

(D) The patient timeline view shows patients' event sequences aligned with respect to the pattern selected ("D" and "H" events are vertically aligned in this example).