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Search Approach – preselection big to smart data - tally functionality

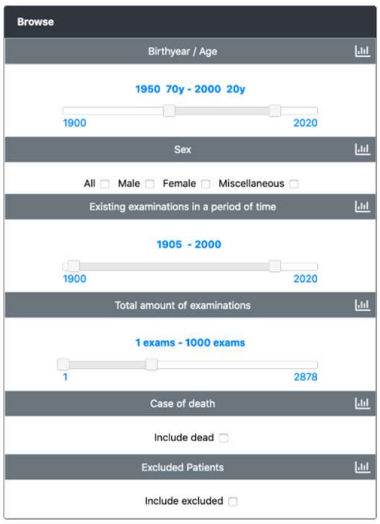
Iterata Health Platform's approach is it to facilitate searches and thus support the decision-making process. A simple form of search request is the tally functionality.

Search Approaches

Preselection

To narrow down the amount of data to further analyze, we propose a preselection with simple regulators. Some generic information about individuals can be defined before the actual search commences. This information would typically be gender, age range, amount of examinations, range within the documents were generated and also the frequency of documents.

This preselection allows us to define a smaller cohort with only patients who meet the criteria. The preselection is connected to the document archive or the laboratory values. Only the selected cohort is further analyzed with for example a tally function. This means, that for the preselected cohort, a count is possible which shows how frequently an element (e.g. lab value) is.



From Big Data to Smart Data

Tally functionality

For better understanding, knowing the dimension of the elements of a data set can be useful. Information about to which extent something is represented, supports the decision-making process. To begin with, using a simple search field, where search terms can be retrieved, is a mechanism we all know. If a specific search term is requested, the simple search retrieves only the cards with the term in it and highlights the search phrase. However, especially in data sets where there are a lot of different elements, the tally function can be used as a first search request. The tally function counts the extent of elements with the same key. That way, it quickly becomes apparent which entity is very pronounced. Another advantage is that not all data has to be retrieved because only a count is made. After the evaluation, a decision can be made which data is of interest.

Through the example of the Swissmedic data base, it can be seen how this function can be useful. This data base can be downloaded for free, the advantages are that a lot of data is available and contains no sensitive data, like patient data, information about individuals… The data base includes around 20'000 listed drugs. These drugs have different elements that describe the features of the drug, like dosages, different authorization holder, different active substances and so forth. With the tally function, it is possible to count how much elements with the same key are represented. With this information, more prominent entities can be identified and analyzed, as well as simple statistical analysis can be performed.

Please do not hesitate to contact us

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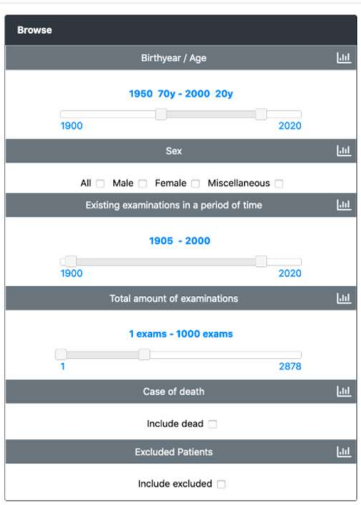
Preselection

BIG DATA – SMALL DATA AND SPEED AND SECURE

Analyse (Pre-Selection) am Beispiel eines grossen Spital-Labor

- 3 mio. Laboruntersuchungen
- über 15 Jahre
- über 55 mio. Einzeltests
- Ca. 280'000 Patienten

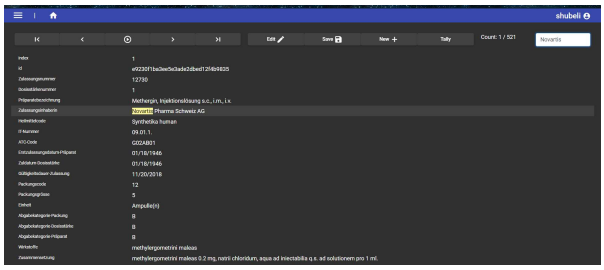


Reduktion der Patientenmenge entlang generischer Dimensionen, wie

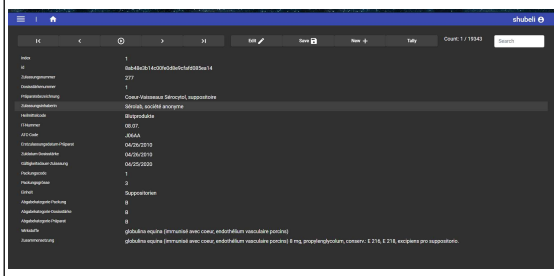
- Alter
- Geschlecht
- Anzahl Untersuche
- Untersuchungszeitraum
- Sonstige in-/Exclusionen

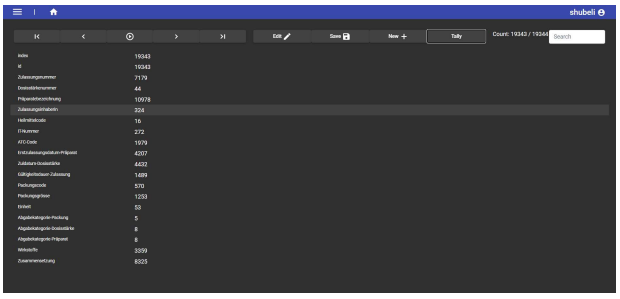
→ Starke Reduzierung Anzahl Patienten

Tally Functionality

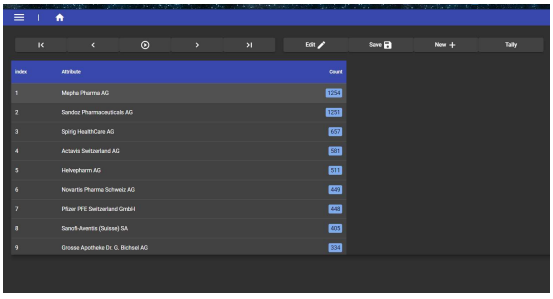


Searching for specific terms





Counting the extent of the entities (Tally Level 0)



Select the next Level of entity distribution (Tally Level 1)