Suggested calculation for input fluids:

|  |  |
| --- | --- |
| Important identification variables | Description by my understanding |
| linkorderid | To link original order and change in order later |
| orderid | Order of medication or fluids at one time |
| itemid | The id number of items: either medication, fluids, or output items |
| ICUstay\_id | Identify each unique ICU stay |

For CareVue (Records from 2001 to 2008)

1. They recorded both rate and volume at different timings, based on my understanding, if we want to link rate and volume up, we will need to refer to same orderid
2. Also, there could be mixed solution or pure solution. For pure fluids, charttime will be recording the endtime, so we could sum up the volume at each timing across different fluid types.
3. For mixed solution, the way to calculate will be complex, as documented on the mimic dataset website, where we will need to calculate the real volume intake for the patient after mixing fluids with medications.

For MetaVision (Records from year 2008 to 2012)

1. They recorded both rate and volume at same time, based on my understanding, volume is calculated by timing the rate to the time difference beween starttime and endtime. I think for pure fluids, identified through within each linkorderid, there is only one unique itemid.
2. For mixed solution, based on my understanding, can be identified if within each linkoderid and orderid, if there are two different items, one recorded amount and rate while the other one recorded only rate, then it will be mixed solution. The way to calculate the balanced volume will be very similar to CareVue.

Figure 1: Input extraction flow

Figure 2: Output extraction flow