Introduction to data management and cleaning

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Levels of data aggregation

Aggregated data

De-identified data

Personally identifying data } Individual-level

Read in the dataset

```
# cases.R
# JRCP 06 Jan 2010
#
# Last modified: 09 June 2015

rm(list=ls())

require(foreign)

cases <- read.spss('cases.sav',to.data.frame=T,trim.factor.names=T)

dim(cases)

[1] 135  91

names(cases)

[1] 'idno'  …   'sex'   …  'age'  'occup'  'dor'  'dtadm'  'dtill'
…  'fever'  'dtfever'  …  'cough'  'dtcough'  …  'headache'
… 'dthead'  … 'outcome'  …  'dtdeath'  … 'igm1'  'igg1'
'pcr1ser'     'dtserum1'    'Igm2'        'Igg2'        'dtserum2'
… 'virusiso' … 'CXR'   'ARDS'  …
```

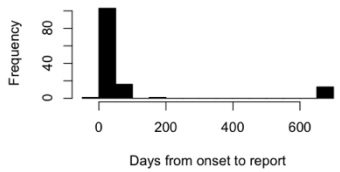
Look at the dataset - format

```
head(cases$dor)

[1] 13266288000 13266288000 13266374400

cases$dor <- as.Date('1582-10-14') + cases$dor/60/60/24

range(cases$dor,na.rm=T)

[1] "2003-03-06"  "2008-03-15"
```

Categorical data - factor (levels)
Continuous data - numeric (range)
Dates - Date, POSIXct (range)
Binary data - T, F

Look at the dataset - logic

```
range(cases$dor-cases$dtill)
[1] NA NA
range(cases$dor-cases$dtill,na.rm=T)
[1]  -7 686
subset(cases,dor-dtill<0)$idno
AT567
```




```
hist(cases$dor-cases$dtill,20,xlab='Days from onset to report',main='',col=1)
```

Inconsistencies

IDNO: SF999

dtill given as 16 Feb 2005
dtfever given as 16 Feb 2003

Correction: Change year of dtfever from 2003 to 2005

IDNO: GW321, Year: 2003

dtill given as 12 Jan 2003
dtcough given as 12 Mar 2003
dthead given as 12 Mar 2003
dtdeath given as 15 Jan 2003

Correction: Change month of dtcough and dthead from 12 Mar to 12 Jan

Inconsistencies

IDNO: LP309, Year: 2002

dtill given as 12 Aug 2002
dthead given as 11 Aug 2002

Correction: none

IDNO: AT567, Year: 2005

dor given as 6 May 2005
dtill given as 14 May 2005

Correction: delete case (sample negative when tested at CDC)

Correct the dataset

```
# DATABASE CORRECTIONS #

cases$dtfever[cases$idno=='SF999'] <- as.Date('2005-01-16') # Onset 2005; dtfever was 2003

cases$dthead[cases$idno=='GW321'] <- as.Date('2003-01-12') # Onset/death Jan; dtfever was March
cases$dtcough[cases$idno=='GW321'] <- as.Date('2003-01-12') # Onset/death Jan; dtcough was March

cases <- subset(cases,idno!='AT567') # sample negative when tested at CDC
```

Save corrected dataset as new file

```
now <- format(Sys.time(),'%d%b%Y_%H%M')

fn <- paste('casesClean',now,'.Rdata',sep='')
fn

[1] 'casesClean07Jan2010_2048.Rdata'

save(cases,now,file=fn)
```