Exploration of subsets

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Counts.

```r
dim(d.pred.168)
```

```
## [1] 624 187
```

```r
length(unique(d.pred.168$pmid))
```

```
## [1] 624
```

```r
dim(d.pred.168.mm)
```

```
## [1] 520 187
```

```r
dim(d.pred.168.cp)
```

```
## [1] 576 187
```

```r
dim(d.pred2.168)
```

```
## [1] 449 187
```

Non-pH data.

```r
length(unique(c(pmid.cal2, pmid.cal2cs, pmid.cal4)))
```

```
## [1] 519
```

```r
table(d.pred.168$meas.tech2)
```

```
##
##   chamber      cps micro met       wt
##         2      102      520        0
```

```r
table(d.pred.168.mm$meas.tech2)
```

```
##
##   chamber      cps micro met       wt
##         0        0      520        0
```

```r
table(d.pred.168.cp$meas.tech2)
```

```
##
##   chamber      cps micro met       wt
##         2       54      520        0
```

```r
table(d.pred2.168$country, d.pred2.168$meas.tech2)
```

```
##
##      chamber cps micro met  wt
```

```
##    CA       0  0       0  0
##    CH       0  0      45  0
##    DE       0  0       0  0
##    DK       0  0      79  0
##    FR       0  0       7  0
##    IE       0  0      49  0
##    IT       0  0       0  0
##    NL       0  0     160  0
##    NO       0  0       0  0
##    SE       0  0       0  0
##    UK       0  0     109  0
##    US       0  0       0  0
```

```
table(d.pred3.168$country, d.pred3.168$meas.tech2)
```

```
##
##        chamber cps micro met wt
##    CA       0  0       0  0
##    CH       0  0       0  0
##    DE       0  0       0  0
##    DK       0 98      28  0
##    FR       0  0       0  0
##    IE       0  0       0  0
##    IT       0  0       0  0
##    NL       0  0       8  0
##    NO       0  0       0  0
##    SE       0  0       0  0
##    UK       0  0       0  0
##    US       0  0       0  0
```

```
table(d.pred.168$country, d.pred.168$meas.tech2)
```

```
##
##        chamber cps micro met  wt
##    CA       0  0       0  0
##    CH       0  0      45  0
##    DE       0  0       0  0
##    DK       2 102     91  0
##    FR       0  0      13  0
##    IE       0  0      49  0
##    IT       0  0       0  0
##    NL       0  0     213  0
##    NO       0  0       0  0
##    SE       0  0       0  0
##    UK       0  0     109  0
##    US       0  0       0  0
```

```
table(d.pred.168.mm$country, d.pred.168.mm$meas.tech2)
```

```
##
##        chamber cps micro met  wt
##    CA       0  0       0  0
##    CH       0  0      45  0
##    DE       0  0       0  0
##    DK       0  0      91  0
##    FR       0  0      13  0
```

```
##    IE        0   0        49   0
##    IT        0   0         0   0
##    NL        0   0       213   0
##    NO        0   0         0   0
##    SE        0   0         0   0
##    UK        0   0       109   0
##    US        0   0         0   0
```

```
table(d.pred.168.cp$country, d.pred.168.cp$meas.tech2)
```

```
## 
##        chamber cps micro met  wt
##    CA        0   0         0   0
##    CH        0   0        45   0
##    DE        0   0         0   0
##    DK        2  54        91   0
##    FR        0   0        13   0
##    IE        0   0        49   0
##    IT        0   0         0   0
##    NL        0   0       213   0
##    NO        0   0         0   0
##    SE        0   0         0   0
##    UK        0   0       109   0
##    US        0   0         0   0
```

```
table(d.pred2.168$inst)
```

```
## 
## 104 106 202 204 205 207 208 210 212 214
##  28  82 109  17  34  45   7   3  49  75
```

```
table(d.pred3.168$inst)
```

```
## 
## 205 210 211
##  28   8  98
```

```
table(d.pred3.168$institute)
```

```
## 
##     AAFC     ADAS  ADAS-RR     ARDC       AT       AU      AUN   CAU-LU
##        0        0        0        0        0       28        0        0
##     CRPA     DIAS     IGER     IMAG INH-HAFL     INRA  IUL/FAT      JTI
##        0        0        0        0        0        0        0        0
##       MU  NMI-WUR      SDU  TEAGASC     USDA      WUR
##        0        8       98        0        0        0
```

```
table(d.pred.168$inst)
```

```
## 
## 104 106 202 204 205 207 208 210 211 212 214
##  28  86 109  17  46  45  13   8 104  49 119
```

```
table(d.pred.168.mm$inst)
```

```
## 
## 104 106 202 204 205 207 208 210 212 214
##  28  86 109  17  46  45  13   8  49 119
```

```r
table(d.pred.168.cp$inst)
```

```
## 
## 104 106 202 204 205 207 208 210 211 212 214
##  28  86 109  17  46  45  13   8  56  49 119
```

```r
table(d.pred2.168$country)
```

```
## 
##  CA  CH  DE  DK  FR  IE  IT  NL  NO  SE  UK  US
##   0  45   0  79   7  49   0 160   0   0 109   0
```

```r
table(d.pred3.168$country)
```

```
## 
##  CA  CH  DE  DK  FR  IE  IT  NL  NO  SE  UK  US
##   0   0   0 126   0   0   0   8   0   0   0   0
```

```r
table(d.pred.168$country)
```

```
## 
##  CA  CH  DE  DK  FR  IE  IT  NL  NO  SE  UK  US
##   0  45   0 195  13  49   0 213   0   0 109   0
```

```r
table(d.pred.168.mm$country)
```

```
## 
##  CA  CH  DE  DK  FR  IE  IT  NL  NO  SE  UK  US
##   0  45   0  91  13  49   0 213   0   0 109   0
```

```r
table(d.pred.168.cp$country)
```

```
## 
##  CA  CH  DE  DK  FR  IE  IT  NL  NO  SE  UK  US
##   0  45   0 147  13  49   0 213   0   0 109   0
```

```r
table(droplevels(d.pred2.168$exper))
```

```
## 
##                  1               10               11
##                 18                1                1
##                 12               13               14
##                  1                1                1
##                 15               16               17
##                  1                1                1
##                 18          1989-15          1989-27
##                  1                1                1
##            1989-28          1990-12          1990-17
##                  2                3                2
##            1990-18          1990-20          1990-22
##                  2                4                2
##            1990-23          1990-24          1990-26
##                  4                2                2
##            1990-27          1990-30          1990-31
##                  2                1                1
##            1990-35          1990-36          1991-15
##                  1                2                2
##            1991-16          1991-24          1991-30
```

```
##                        2                        3                        1
##                  1991-36                  1992-11                  1992-12
##                        1                        1                        1
##                  1992-16                  1992-17                  1992-21
##                        3                        2                        1
##                  1992-25                  1992-26                  1992-27
##                        1                        3                        4
##                  1992-28                  1992-35                  1992-38
##                        1                        1                        2
##                  1993-10                  1993-11                  1993-12
##                        2                        6                        2
##                  1993-18                  1993-21                  1993-22
##                        4                        3                        4
##                        2                        3                        4
##                        6                       11                        6
##                        5                        6                        7
##                       21                        3                        1
##                        8                        9                       A1
##                        1                        1                        3
##                       A2                       A3                       A4
##                        3                        3                        4
##                       A5         A6 Cracking Clays 40 Acres
##                        3                        3                       36
## Cracking Clays Faringdon     Cracking Clays Rowden          DERVAL(44)_2011
##                       27                       46                        2
##             ECLAIRE-2012                       F1                       F2
##                        1                        3                        2
##                       F3                G1997-24                 G1997-25
##                        2                        3                        2
##                 G1997-26                 G1997-28                 G1997-29
##                        3                        2                        3
##                 G1997-30                 G1997-31                 G1997-33
##                        2                        3                        2
##                 G1998-28                 G1998-30                 G1998-32
##                        3                        4                        4
##                 G1999-19                 G1999-20                 G1999-22
##                        5                        3                        2
##                 G1999-26                 G1999-27                 G1999-30
##                        2                        5                        5
##                 G1999-35                       G2                 G2000-11
##                        2                        3                        2
##                 G2000-12                 G2000-19                  G2000-9
##                        5                        2                        2
##                 G2002-23                 G2003-10                 G2003-11
##                        2                        3                        4
##                       G3                   IHF_13                    IHF_6
##                        3                        1                        1
##                    IHF_7                Juni 2000                  Juni_99
##                        1                        5                        4
##                  Kent_01               Kent_2_02          LACHAP(44)_2011
##                        5                        3                        2
##                  LI_1994                       R1                    SyreN
##                        2                        3                       22
##                      TS1                      TS2                Unter (a)
```

```
##                              3                           1                          6
##                    Unter (b)                          Z1                         Z2
##                              6                           3                          3
```

```
table(droplevels(d.pred3.168$exper))
```

```
## 
##     B1     B2 IHF_13  IHF_6  IHF_7  SyreN     W1     W2
##     10      8      4      2      2     28     40     40
```

```
table(droplevels(d.pred.168$exper))
```

```
## 
##                              1                          10                         11
##                             18                           1                          1
##                             12                          13                         14
##                              1                           1                          1
##                             15                          16                         17
##                              1                           1                          1
##                             18                     1989-15                    1989-27
##                              1                           1                          2
##                        1989-28                     1990-12                    1990-17
##                              3                           3                          2
##                        1990-18                     1990-20                    1990-22
##                              2                           4                          2
##                        1990-23                     1990-24                    1990-26
##                              4                           3                          3
##                        1990-27                     1990-30                    1990-31
##                              2                           1                          1
##                        1990-35                     1990-36                    1991-15
##                              1                           2                          2
##                        1991-16                     1991-24                    1991-30
##                              2                           3                          1
##                        1991-36                     1992-11                    1992-12
##                              1                           1                          1
##                        1992-16                     1992-17                    1992-21
##                              3                           2                          1
##                        1992-25                     1992-26                    1992-27
##                              1                           3                          4
##                        1992-28                     1992-35                    1992-38
##                              1                           1                          2
##                        1993-10                     1993-11                    1993-12
##                              2                           6                          2
##                        1993-18                     1993-21                    1993-22
##                              4                           3                          4
##                              2                           3                          4
##                              6                          11                          6
##                              5                           6                          7
##                             21                           3                          1
##                              8                           9                         A1
##                              1                           1                          3
##                             A2                          A3                         A4
##                              3                           3                          4
##                             A5                          A6                         B1
##                              3                           3                         16
```

```
##             B1990-15              B1990-35              B1990-37
##                    2                     2                     3
##             B1990-38              B1991-13              B1991-37
##                    8                     2                     4
##             B1992-10              B1992-14              B1992-37
##                    2                     4                     3
##             B1992-38              B1992-39              B1993-15
##                    3                     3                     4
##             B1998-39              B1998-40                    B2
##                    2                     2                     8
## Cracking Clays 40 Acres  Cracking Clays Faringdon   Cracking Clays Rowden
##                   36                    27                    46
##       DERVAL(44)_2011            ECLAIRE-2012                    F1
##                    4                     1                     3
##                   F2                    F3              G1997-24
##                    2                     2                     3
##             G1997-25              G1997-26              G1997-28
##                    2                     3                     2
##             G1997-29              G1997-30              G1997-31
##                    3                     2                     3
##             G1997-33              G1998-28              G1998-30
##                    2                     3                     4
##             G1998-32              G1999-19              G1999-20
##                    4                     5                     3
##             G1999-22              G1999-26              G1999-27
##                    2                     2                     5
##             G1999-30              G1999-35                    G2
##                    5                     2                     3
##             G2000-11              G2000-12              G2000-19
##                    2                     5                     2
##              G2000-9              G2002-23              G2003-10
##                    2                     2                     3
##             G2003-11                    G3                IHF_13
##                    4                     3                     4
##                IHF_6                 IHF_7             Juni 2000
##                    2                     2                     5
##              Juni_99               Kent_01             Kent_2_02
##                    4                     5                     3
##       LACHAP(44)_2011               LI_1994                    R1
##                    4                     4                     3
##                SyreN                   TS1                   TS2
##                   34                     3                     1
##            Unter (a)             Unter (b)                    W1
##                    6                     6                    40
##                   W2                    Z1                    Z2
##                   40                     3                     3
```

```r
table(droplevels(d.pred.168.mm$exper))
```

```
##
##                    1                    10                    11
##                   18                     1                     1
##                   12                    13                    14
##                    1                     1                     1
##                   15                    16                    17
```

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```
##                    1                         1                           1
##                   18                   1989-15                     1989-27
##                    1                         1                           2
##              1989-28                   1990-12                     1990-17
##                    3                         3                           2
##              1990-18                   1990-20                     1990-22
##                    2                         4                           2
##              1990-23                   1990-24                     1990-26
##                    4                         3                           3
##              1990-27                   1990-30                     1990-31
##                    2                         1                           1
##              1990-35                   1990-36                     1991-15
##                    1                         2                           2
##              1991-16                   1991-24                     1991-30
##                    2                         3                           1
##              1991-36                   1992-11                     1992-12
##                    1                         1                           1
##              1992-16                   1992-17                     1992-21
##                    3                         2                           1
##              1992-25                   1992-26                     1992-27
##                    1                         3                           4
##              1992-28                   1992-35                     1992-38
##                    1                         1                           2
##              1993-10                   1993-11                     1993-12
##                    2                         6                           2
##              1993-18                   1993-21                     1993-22
##                    4                         3                           4
##                    2                         3                           4
##                    6                        11                           6
##                    5                         6                           7
##                   21                         3                           1
##                    8                         9                          A1
##                    1                         1                           3
##                   A2                        A3                          A4
##                    3                         3                           4
##                   A5                        A6                     B1990-15
##                    3                         3                           2
##              B1990-35                  B1990-37                    B1990-38
##                    2                         3                           8
##              B1991-13                  B1991-37                    B1992-10
##                    2                         4                           2
##              B1992-14                  B1992-37                    B1992-38
##                    4                         3                           3
##              B1992-39                  B1993-15                    B1998-39
##                    3                         4                           2
##              B1998-40 Cracking Clays 40 Acres  Cracking Clays Faringdon
##                    2                        36                          27
## Cracking Clays Rowden           DERVAL(44)_2011                ECLAIRE-2012
##                   46                         4                           1
##                   F1                        F2                          F3
##                    3                         2                           2
##              G1997-24                  G1997-25                    G1997-26
##                    3                         2                           3
##              G1997-28                  G1997-29                    G1997-30
```

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```
##                          2                   3                   2
##                   G1997-31            G1997-33            G1998-28
##                          3                   2                   3
##                   G1998-30            G1998-32            G1999-19
##                          4                   4                   5
##                   G1999-20            G1999-22            G1999-26
##                          3                   2                   2
##                   G1999-27            G1999-30            G1999-35
##                          5                   5                   2
##                         G2            G2000-11            G2000-12
##                          3                   2                   5
##                   G2000-19             G2000-9            G2002-23
##                          2                   2                   2
##                   G2003-10            G2003-11                  G3
##                          3                   4                   3
##                     IHF_13               IHF_6               IHF_7
##                          4                   2                   2
##                  Juni 2000             Juni_99             Kent_01
##                          5                   4                   5
##                  Kent_2_02      LACHAP(44)_2011             LI_1994
##                          3                   4                   4
##                         R1               SyreN                 TS1
##                          3                  34                   3
##                        TS2           Unter (a)           Unter (b)
##                          1                   6                   6
##                         Z1                  Z2
##                          3                   3
```

```r
table(droplevels(d.pred.168.cp$exper))
```

```
## 
##                          1                  10                  11
##                         18                   1                   1
##                         12                  13                  14
##                          1                   1                   1
##                         15                  16                  17
##                          1                   1                   1
##                         18             1989-15             1989-27
##                          1                   1                   2
##                    1989-28             1990-12             1990-17
##                          3                   3                   2
##                    1990-18             1990-20             1990-22
##                          2                   4                   2
##                    1990-23             1990-24             1990-26
##                          4                   3                   3
##                    1990-27             1990-30             1990-31
##                          2                   1                   1
##                    1990-35             1990-36             1991-15
##                          1                   2                   2
##                    1991-16             1991-24             1991-30
##                          2                   3                   1
##                    1991-36             1992-11             1992-12
##                          1                   1                   1
##                    1992-16             1992-17             1992-21
##                          3                   2                   1
```

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```
##                 1992-25                 1992-26                 1992-27
##                       1                       3                       4
##                 1992-28                 1992-35                 1992-38
##                       1                       1                       2
##                 1993-10                 1993-11                 1993-12
##                       2                       6                       2
##                 1993-18                 1993-21                 1993-22
##                       4                       3                       4
##                       2                       3                       4
##                       6                      11                       6
##                       5                       6                       7
##                      21                       3                       1
##                       8                       9                      A1
##                       1                       1                       3
##                      A2                      A3                      A4
##                       3                       3                       4
##                      A5                      A6                      B1
##                       3                       3                      16
##                B1990-15                B1990-35                B1990-37
##                       2                       2                       3
##                B1990-38                B1991-13                B1991-37
##                       8                       2                       4
##                B1992-10                B1992-14                B1992-37
##                       2                       4                       3
##                B1992-38                B1992-39                B1993-15
##                       3                       3                       4
##                B1998-39                B1998-40                      B2
##                       2                       2                       8
## Cracking Clays 40 Acres  Cracking Clays Faringdon  Cracking Clays Rowden
##                      36                      27                      46
##         DERVAL(44)_2011            ECLAIRE-2012                      F1
##                       4                       1                       3
##                      F2                      F3                G1997-24
##                       2                       2                       3
##                G1997-25                G1997-26                G1997-28
##                       2                       3                       2
##                G1997-29                G1997-30                G1997-31
##                       3                       2                       3
##                G1997-33                G1998-28                G1998-30
##                       2                       3                       4
##                G1998-32                G1999-19                G1999-20
##                       4                       5                       3
##                G1999-22                G1999-26                G1999-27
##                       2                       2                       5
##                G1999-30                G1999-35                      G2
##                       5                       2                       3
##                G2000-11                G2000-12                G2000-19
##                       2                       5                       2
##                 G2000-9                G2002-23                G2003-10
##                       2                       2                       3
##                G2003-11                      G3                  IHF_13
##                       4                       3                       4
##                   IHF_6                   IHF_7               Juni 2000
##                       2                       2                       5
```

```
##           Juni_99             Kent_01          Kent_2_02
##                 4                   5                 3
## LACHAP(44)_2011             LI_1994                R1
##                 4                   4                 3
##             SyreN                 TS1               TS2
##                34                   3                 1
##         Unter (a)           Unter (b)                W1
##                 6                   6                16
##                W2                  Z1                Z2
##                16                   3                 3
```