



**The Actuarial Profession**

making financial sense of the future

# IP Trends & Cause of Disability

*Pete McGurk*

*Secretary, CMI IP Committee*

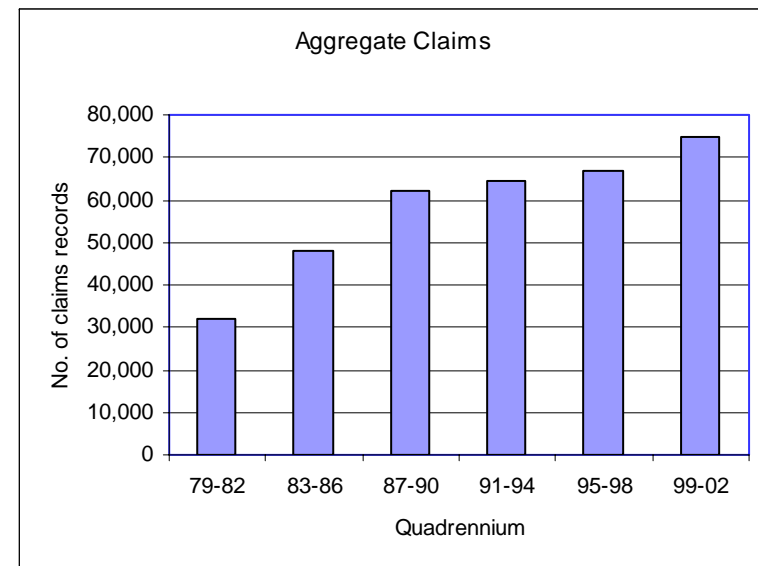
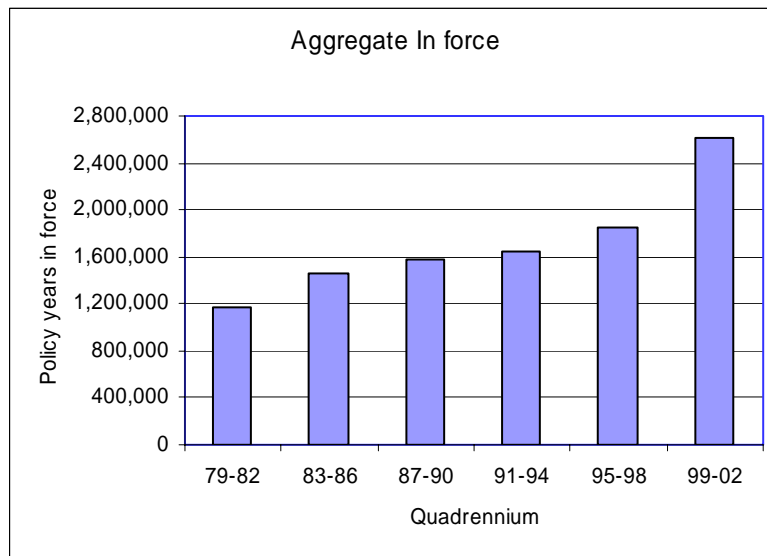
# Latest experience

---

- **Results for Individual 1999-2002 already sent to offices**
- **CMIR on web in May 2005**
- **Only time for “highlights”**
- **Will then focus on Cause of Disability work**

# Data volumes

---



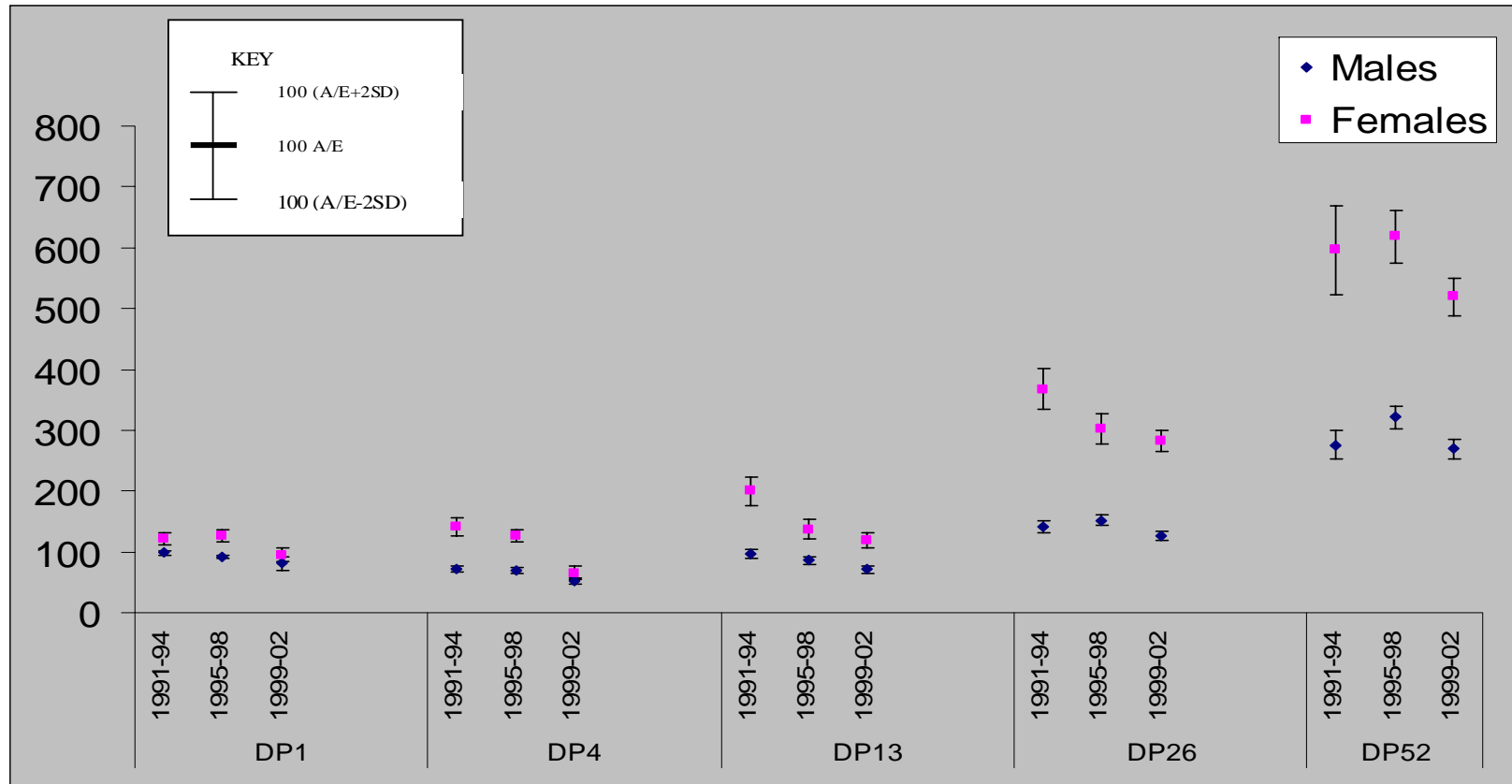
# General trends in nature of data

---

- **Females increasing (now 23% of IF)**
- **Proportions of DP1, DP4 reducing**
- **Proportions of DP13, DP26 increasing a little**
- **Proportion of DP52 increasing a lot**
- **Proportion of Occupational Class 2-4 increasing**
- **Proportion of Occupational Class Unknown reducing but still substantial (c 18%)**

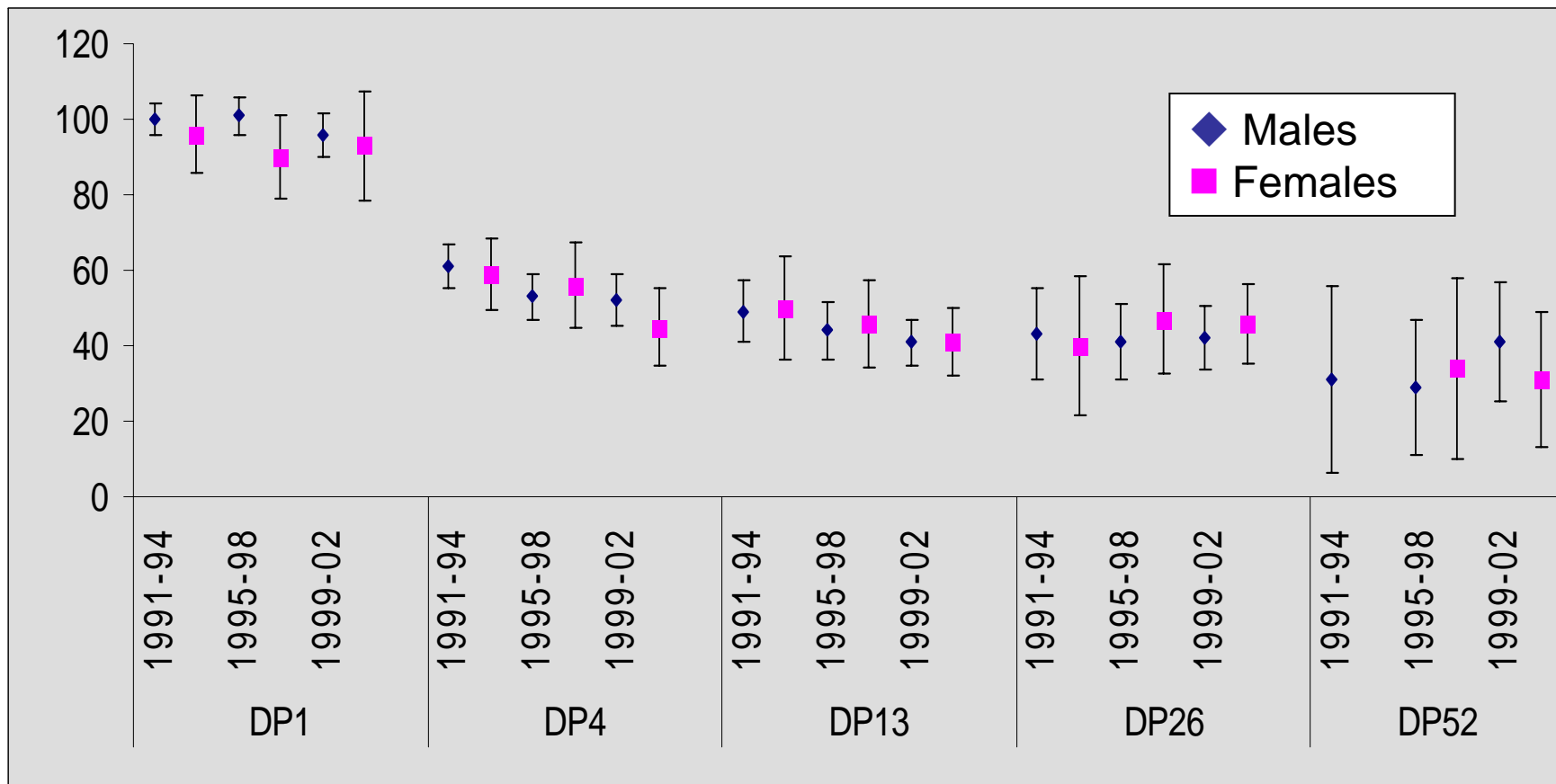
# Trends in inceptions 91-02

## Standard\* Class 1 only



# Trends in recoveries 91-02

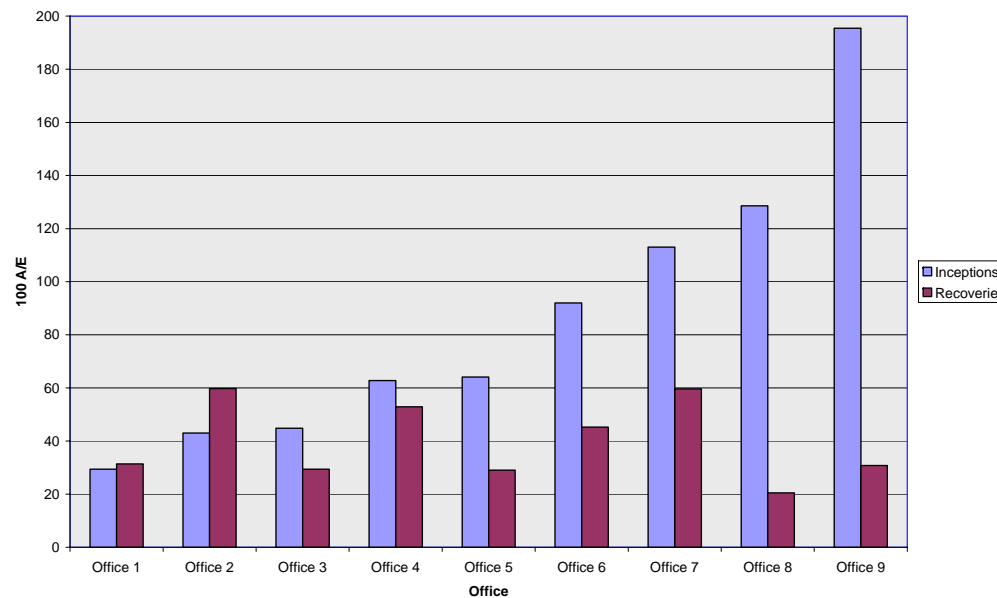
## Standard\* Class 1 only



# Variation by office

---

## Example – DP13, Males, Class 1 business, 99-02



# **“Loyal Office” Results**

---

- **Looked at offices present throughout 1991-2002**
- **“All occupations” only**
- **Inceptions – trends consistent with All Office**
- **Recoveries – some differences**
- **Deaths – broadly decreasing trend as for All Office**



# Cause of Disability Working Party

---

**Graham Clark (Chairman)    Pete McGurk (Secretary)**

**Bill Baker**

**Gerry Kennedy**

**David Leach**

**Jamie Marshall**

**David Wilkie**

**CMI Bureau**

# Material published to date

---

- **CMIR 8 (1986)**
  - 1975-78 Cause of Disability
  - 14 Sickness Groups
  - % of inceptions by sex, deferred period, age group
  - Weeks of claim by sex, deferred period, age group
  - Average duration by sex, deferred period (all ages)
- **Warwick Health & Care Conference 2001 (Wilkie)**
  - 1975-98
  - Focus on inceptions
  - By single cause (ungrouped)
  - Series of one-way tables – year, quad, sex, deferred period, age group, occupational class
  - Proportions by cause of those still sick after 4, 13, 26, 52 weeks

# Data collected by CMI

---

- Each claim record coded by cause
- Some coded “unknown”
- 72 causes
  - 70 from ICD8 (WHO)
  - since added ME and HIV/AIDS

# Why analyse by cause?

---

- **Insight into past trends**
- **Projecting future trends?**
- **Reserving more reliably for claims in payment**
- **Underwriting**
- **Claims control**
- **Product design**

# Aims of Working Party

---

- **Publish details of actual experience 1975-2002 (short-term aim)**
- **Publish graduations by cause group (longer-term aim) ?**

# Major challenges (1)

---

- **Complexity of information**
  - 5 deferred periods
  - 2 sexes
  - 28 years / 7 quads
  - 4 occupational classes and class unknown
  - 72 causes and cause unknown
  - x age bands
  - y sickness duration bands

# Major challenges (2)

---

- **Grouping of causes**
  - how many groups – 6?, 9?, 15?, 73?
  - how to combine?
- (a) keep individual ICD8 Codes for major (?) causes, aggregate minor causes
- (b) group “medically similar” causes
- (c) group causes with “similar” run-off patterns using statistical testing
- (d) some sort of combination of above

# “Medically similar” groupings

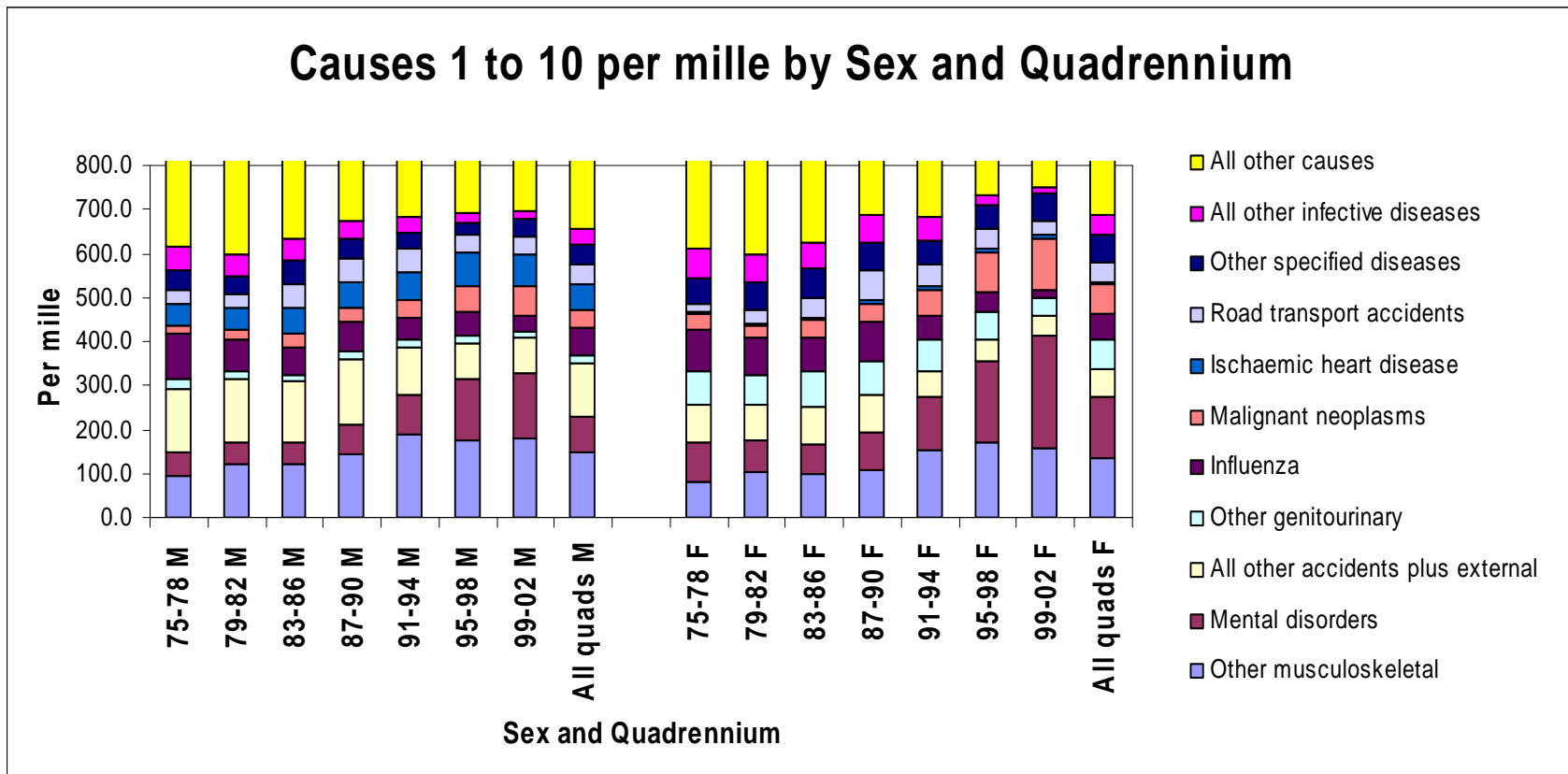
---

| CMIR8                   | Large practitioner             | SoA   |
|-------------------------|--------------------------------|---|
| 1 Other infective       | 1 Mental / psychological       | 1 Pregnancy/childbirth                                    |
| 2 Neoplasms             | 2 Cardiovascular               | 2 Mental Nervous  |
| 3 Endocrine & metabolic | 3 Nervous                      | 3 AIDS/HIV  |
| 4 Mental                | 4 Musculoskeletal              | 4 Reproductive /urinary disease                           |
| 5 Nervous               | 5 Arthritic                    | 5 Digestive   |
| 6 Circulatory           | 6 Respiratory                  | 6 Injury / poisoning                                      |
| 7 Acute respiratory     | 7 Neoplasms                    | 7 Neoplasms   |
| 8 Chronic respiratory   | 8 Gastro/intestinal            | 8 Emergent Disabling Conditions                           |
| 9 Digestive             | 9 Endocrine/matabolic          | 9 Musculoskeletal/ Connective tissue                      |
| 10 Genito-urinary       | 10 Visual/auditory             | 10 Other  |
| 11 Musculoskeletal      | 11 Injuries                    | 11 Respiratory  |
| 12 RTA Injuries         | 12 HIV/AIDS                    | 12 Nervous system & sense organ,<br>infectious/ parasitic |
| 13 Other injuries       | 13 ME                          | 13 Circulatory  |
| 14 All others           | 14 Ill-defined / miscellaneous | 14 Unknown  |
|                         | 15 Unknown                     |   |

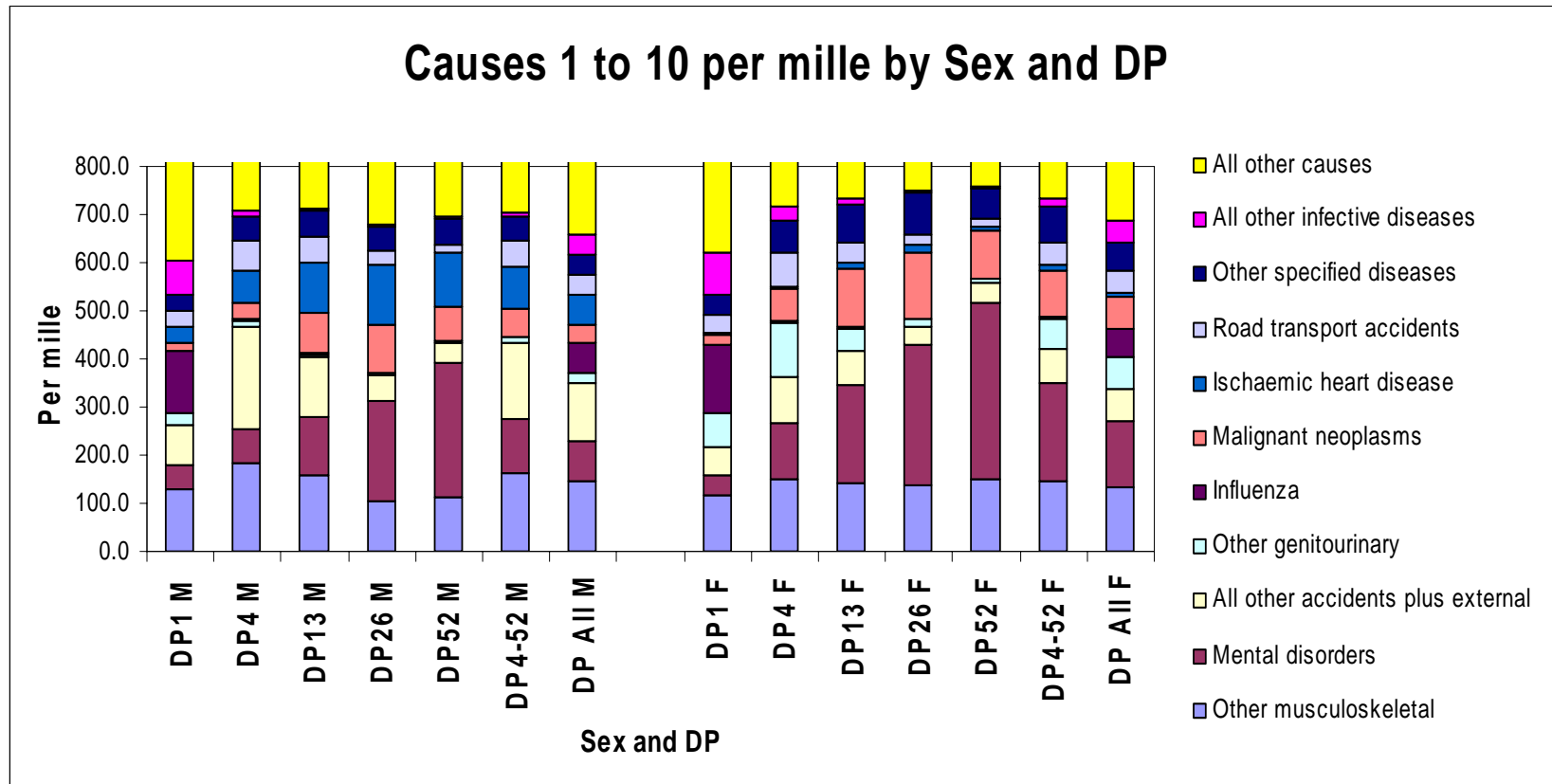
---



# Inceptions – Top 10 ICD8 by quad (all DP)



# Inceptions – Top 10 ICD8 by DP (all quads)

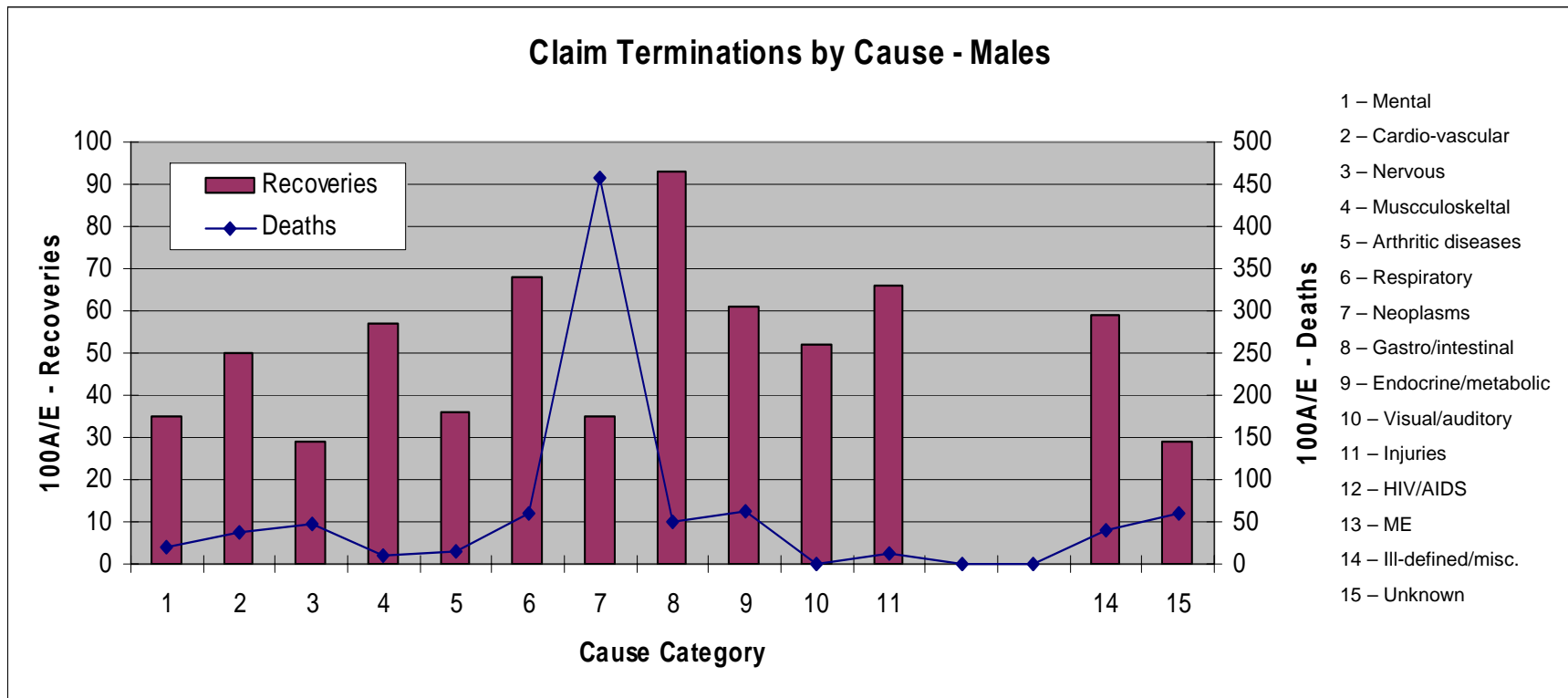


# Terminations by cause group

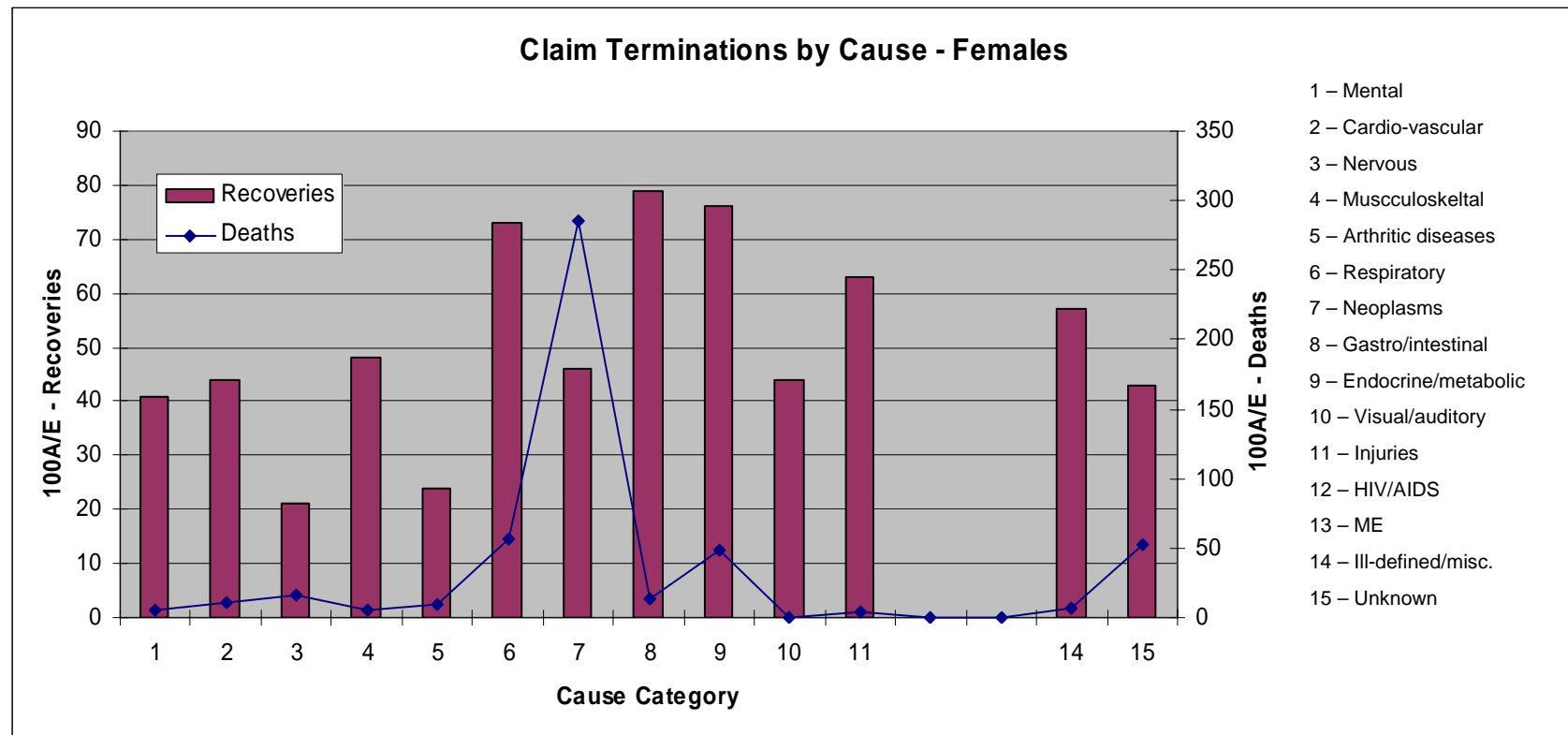
## Example detailed report (“Section C”)

| CMIB – Analysis of IP claim terminations              |         |         |       |       |       |         | Office = All                            |
|---|---------|---------|-------|-------|-------|---------|---|
| Summary of results for mental/psychological disorders |         |         |       |       |       |         | Investigation period 1991-98            |
| Comparison Basis : SM1975-78                          |         |         |       |       |       |         | Run Date :22/11/2004 Run time :11:41:55 |
| Individual, Standard*, Males, Recoveries.             |         |         |       |       |       |         |   |
|   | DP 1    | DP 4    | DP 13 | DP 26 | DP 52 | All DP  | DP4-52                                  |
| <i>A</i>  | 489     | 486     | 268   | 158   | 32    | 1,433   | 944                                     |
| <i>E</i>  | 1,123.3 | 1,333.4 | 798.9 | 414.0 | 115.1 | 3,784.6 | 2,661.3                                 |
| 100 <i>A/E</i> by duration                            |         |         |       |       |       |         |   |
| 1 - 2 weeks   | 45      | -       | -     | -     | -     | 45      | -                                       |
| 2 - 3 weeks   | 55      | -       | -     | -     | -     | 55      | -                                       |
| 3 - 4 weeks   | 45      | -       | -     | -     | -     | 45      | -                                       |
| 4 - 8 weeks   | 47      | 26      | -     | -     | -     | 35      | 26                                      |
| 8 - 13 weeks  | 44      | 27      | -     | -     | -     | 31      | 27                                      |
| 13 - 17 weeks   | 36      | 32      | 20    | -     | -     | 29      | 27                                      |
| 17 - 26 weeks   | 21      | 39      | 19    | -     | -     | 27      | 28                                      |
| 26 - 30 weeks   | 18      | 57      | 30    | 30    | -     | 36      | 39                                      |
| 30 - 39 weeks   | 16      | 45      | 27    | 20    | -     | 28      | 29                                      |
| 39 wks - 1 yr   | 26      | 45      | 48    | 37    | -     | 41      | 43                                      |
| 1 - 2 years   | 47      | 68      | 51    | 49    | 24    | 49      | 49                                      |
| 2 - 5 years   | ↓       | ↓       | ↓     | ↓     | ↓     | 57      | 59                                      |
| 5 - 11 years  | 45      | 81      | 72    | 49    | 33    | 63      | 66                                      |
| 100 <i>A/E</i> by age                                 |         |         |       |       |       |         |   |
| 20-24   | ↓       | 44      | ↓     | ↓     | ↓     | 37      | 34                                      |
| 25-29   | ↓       | 30      | 27    | ↓     | ↓     | 34      | 32                                      |
| 30-34   | 58      | 40      | 38    | 55    | ↓     | 45      | 42                                      |
| 35-39   | 56      | 38      | 38    | 41    | 52    | 42      | 38                                      |
| 40-44   | 42      | 41      | 32    | 39    | 15    | 38      | 37                                      |
| 45-49   | 48      | 34      | 40    | 37    | 31    | 40      | 36                                      |
| 50-54   | 40      | 37      | 27    | 36    | ↓     | 35      | 33                                      |
| 55-59   | 29      | 35      | 29    | ↓     | ↓     | 31      | 32                                      |
| 60-64   | 51      | ↓       | 22    | 32    | 23    | ↓       | ↓                                       |
| 65-65   | -       | 21      | -     | -     | -     | 35      | 22                                      |
| 100 <i>A/E</i> – All Cells                            | 44      | 36      | 34    | 38    | 28    | 38      | 35                                      |

# Terminations by cause group, 91-98 DP4-DP52 combined, all occs combined Males



# Terminations by cause group, 91-98 DP4-DP52 combined, all occs combined Females



# But are groups sensible?

e.g. Respiratory disease, males, all occupations, DP4-DP52, 91-98

| ICD 8 Cause                              | Recoveries |        | Deaths |        |
|--|------------|--------|--------|--------|
|  | Actual     | 100A/E | Actual | 100A/E |
| Pneumonia                                | 56         | 105    | 6      | 261    |
| Bronchitis, emphysema & asthma           | 49         | 36     | 11     | 46     |
| Acute respiratory infections             | 47         | 84     | 3      | 48     |
| Other diseases of the respiratory system | 40         | 60     | 5      | 60     |
| Influenza                                | 18         | 198    | 0      | 0      |
| Hypertrophy of tonsils & adenoids        | 15         | 129    | 0      | 0      |

Others have < 10 terminations

# Working Paper (1)

---

- Publish July 05?
- Refine cause groupings
- Base paper on cause group analysis
- Long term comparison by sex and d.p. (75-02)
- More detailed analysis of 91-02 (inc. “Section C” analysis)  
by sex, d.p., age group, occ. class
- Have more detailed information on 72 ICD8 causes as downloadable file

# Working Paper (2)

---

- **Broad proposals re graduation of cause groups**
- **Questions**
  - **views on cause grouping & presentation**
  - **views on graduation by cause group (worth doing??)**





**The Actuarial Profession**

making financial sense of the future

# IP Trends & Cause of Disability

*Peter McGurk*

*Secretary, CMI IP Committee*