MIPS, GIPS and Metaclinicians.

Not a lecture on the effect of IT on the practice of medicine.
MIPS

- Million instructions per seconds
  - No practical value
  - Indicative of rate of progress in processing power
<table>
<thead>
<tr>
<th>Processor</th>
<th>MIPS</th>
<th>Year</th>
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<tr>
<td>Intel 8080</td>
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<td>2006</td>
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<tr>
<td>Intel Core 2 Extreme QX6700</td>
<td>61119</td>
<td>2006</td>
</tr>
</tbody>
</table>

Ref: Wikipedia (!)
A Sad Story

- **Feb 1998.**
  - Dr Wakefield suggests MMR vaccine might be linked to an increased risk of autism and bowel disorders.
  - Many parents very worried.

- **March 1998-2005.**
  - Substantial amount of research done.
  - Vaccine found to be safe.
  - However vaccination rates fall, especially in London.

- **April 2006.**
  - First child in 14 years dies of measles in the UK.
Not a Sad Story

- **June-July 2006**
  - Traces of salmonella found in some of Cadbury’s chocolate
  - Cadbury identify and withdraw over a million bars of chocolate immediately
    - Facilitated by superb information systems
- **July-Nov 2006**
  - Advertising campaign to win back consumer loyalty
Why?

- Industry has computerised
- Healthcare has not
Computerising the NHS

- World’s largest civilian IT project
  - £6bn? £12bn? £30bn? £60bn?
- Top IT talent involved
  - British Telecom
  - CSC
  - Fujitsu
  - Accenture
  - Atos Origin
  - Cable and Wireless
- Going badly wrong?
Can we afford not to do it?

- Solow Paradox:
  - “The computer age can be seen everywhere but in the productivity statistics.” (1987)

  “We also know that from about 1995 until 2000 we had a period of much faster productivity growth. It is very tempting, it may even be plausible, but it's not a clear certainty, that some or all of that acceleration of productivity is the computer at last bearing fruit.”

- Interview, 2002 http://www.mpls.frb.org/pubs/region/02-09/
But the UK is Ahead of the USA

• “..the most remarkable feature of this twenty-first century medicine is that we hold it together with nineteenth-century paperwork.”
Computerising Medicine

- No shortage of projects:
  - MYCIN (1972-80), TEIRESIAS, EMYCIN, PUFF, ONCOCIN…..

- Large and growing literature
- Many successful prototypes
- Not much gets into production
Telemedicine 1

- Internet and dissemination of medical knowledge
  - Expert patient
  - Google-Informed Patient Syndrome (GIPS)
Telemedicine II

- NHS Direct
- Remote monitoring
  - Treatment at a distance
  - Privacy and intrusion?
Hospital Episode Statistics

- HES data collected on all hospital admissions in England
- Valuable research tool
- Indicative of a trend?
  - Total Population Studies replacing controlled trials in many cases?
Clinical Information

- Primary research
- Analysed at academic centres
- Disseminated through secondary research, teaching, conferences, textbooks

- Process too slow?
Need for more focus?

- Rapid rebuttal of medical misconceptions
- Identification of areas of improvement
- Quantification of clinical skill?
- Greater role of organisations like the National Institute for Clinical Excellence?
- Metaclinicians?
Conclusions

- Considerable attention to the possible uses of IT in delivering healthcare
- Driven by cost and safety concerns
- Intractable problem?
- How did other areas computerise:
  - Driven by controlling centre?
  - Boom through ‘killer apps’?