Dudley and Walsall NHS
Mental Health Partnership NHS Trust

Working up ideas for a Dissertation

CJM Poole MD FRCP FFOM
Consultant Occupational Physician

Faculty of Occupational Medicine 24 April 2012

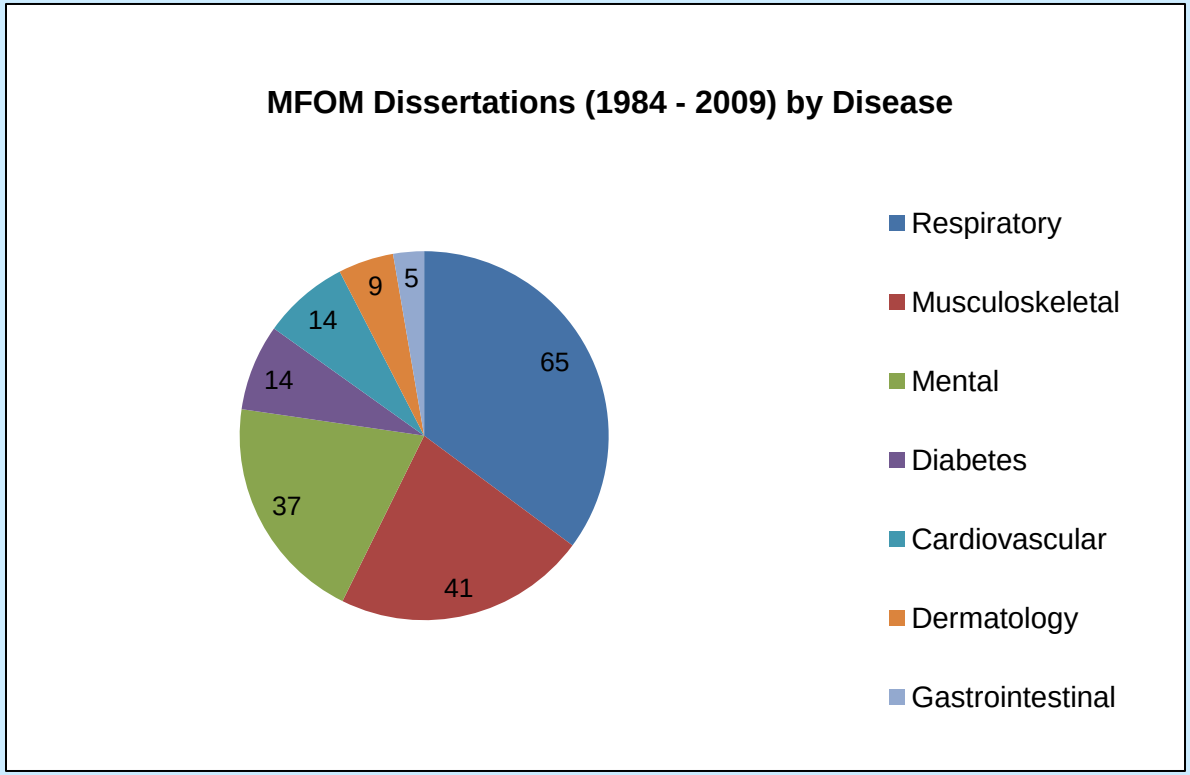
What do you know?

- Dissertation and protocol assessor for FOM, StR supervisor & previous chair of regional training committee
- >50 publications, most whilst working full time in clinical practice, including 7 in 3 years whilst in single handed practice in a factory
- 8 in three years whilst working full time in an academic department for an MD thesis
- Most self-generated ideas and not part of a research team’s funded activity

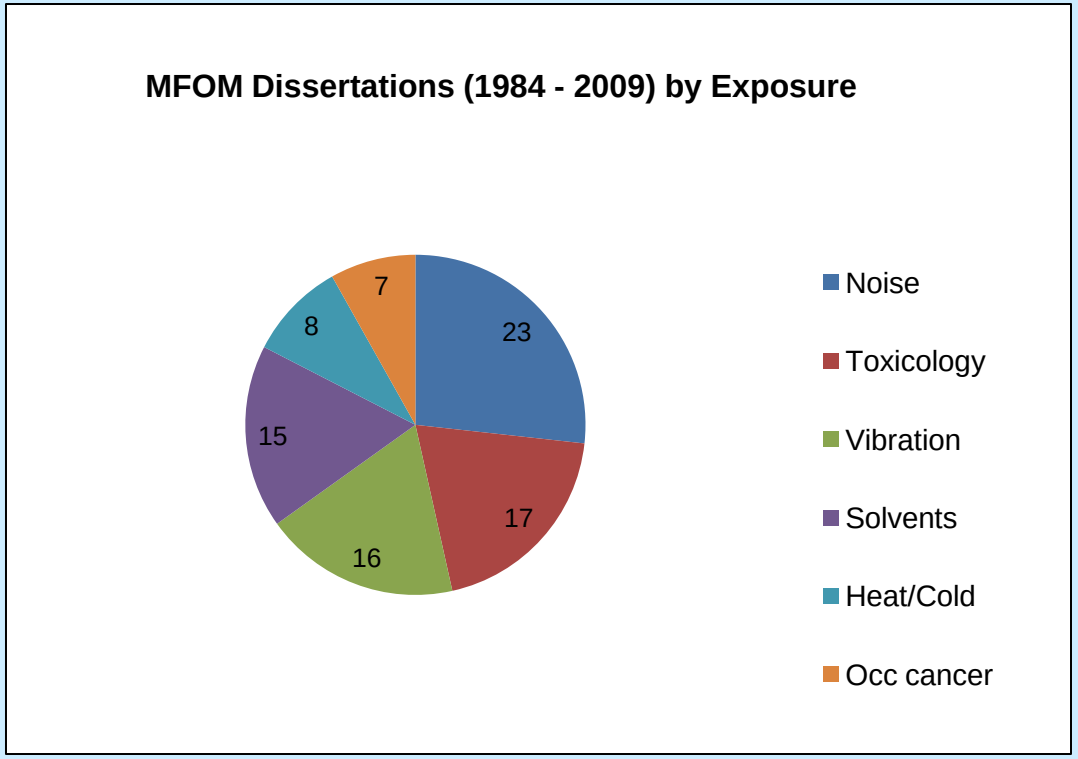
How do you do it?

- By having an analytical, innovative way of thinking and an enjoyment of medical research
- Reflect on what areas of practice interest you?
- What interests my boss/employer? How could I match our interests?
- What can reasonably be done in the time allowed?
- Beware of relying on others for data – some employers' are resistant to publishing sensitive information
- Look at dissertation abstracts on Faculty's website to see what other trainees have done (>400)

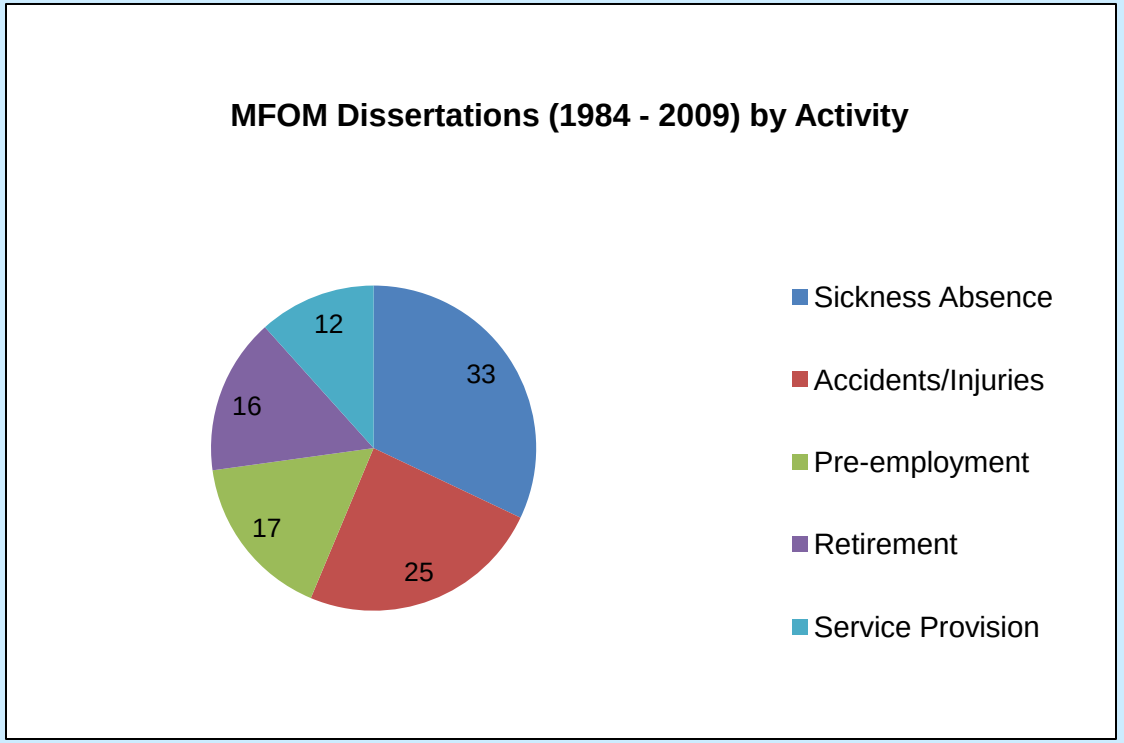
Respiratory	65
Musculoskeletal	41
Mental	37
Diabetes	14
Cardiovascular	14
Dermatology	9
Gastrointestinal	5



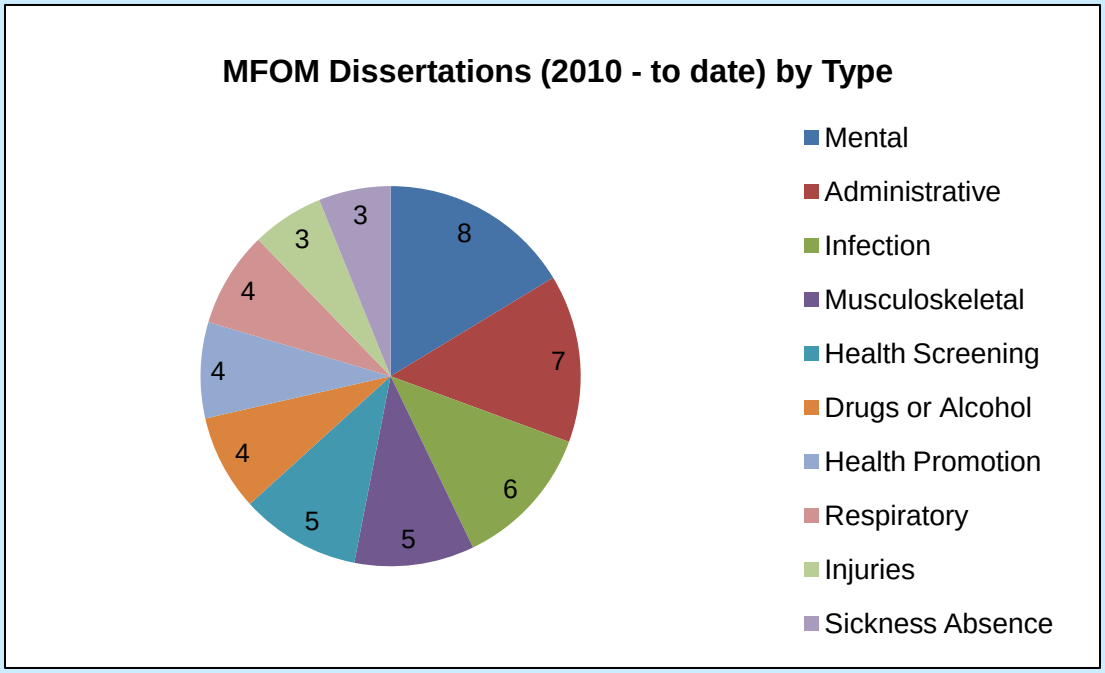
Noise	23
Toxicology	17
Vibration	16
Solvents	15
Heat/Cold	8
Occ cancer	7



Sickness Absence	33
Accidents/Injuries	25
Pre-employment	17
Retirement	16
Service Provision	12



Mental	8
Administrative	7
Infection	6
Musculoskeletal	5
Health Screening	5
Drugs or Alcohol	4
Health Promotion	4
Respiratory	4
Injuries	3
Sickness Absence	3

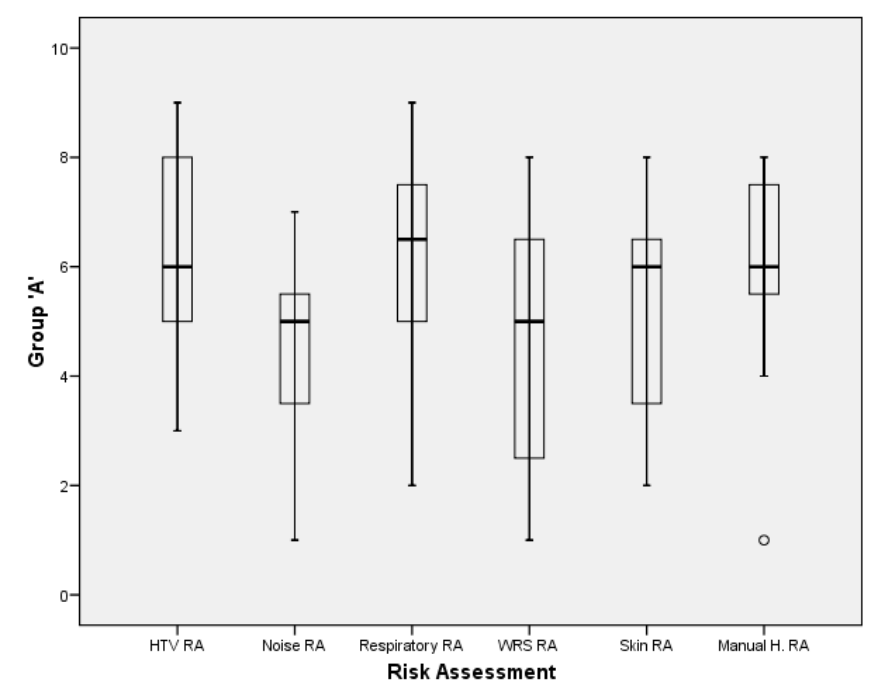


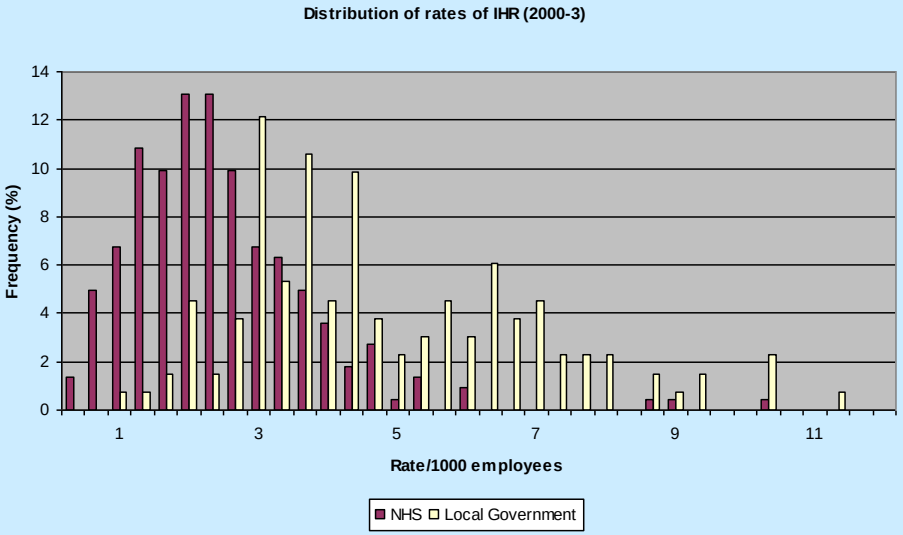
How do you do it?

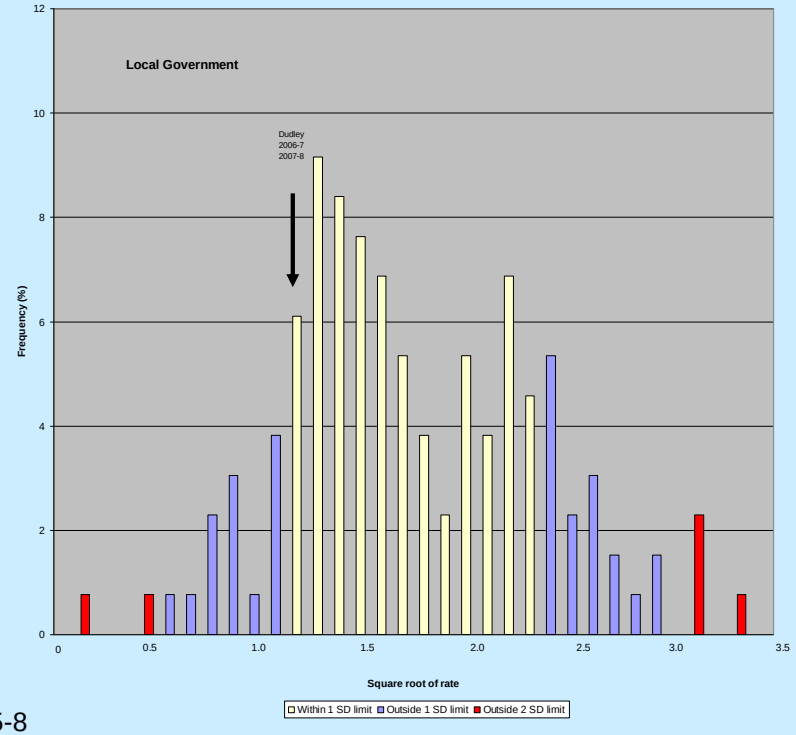
- Discuss ideas with an experienced trainer, supervisor, manager, academic, statistician, hygienist …
- Time off from service commitments – 1 day per week during term time
- Access to electronic data bases (Medline, Cochrane, PsycInfo, Embase…) and a library
- Ask how to do a literature search and to use an Excel spread sheet
- Critically appraise what other researchers have done and the methods they used

How do you do it?

- Focus your research question/ hypothesis
- Submit proposal to Faculty (< 1,000 words) after starting full-time training (ST4) and expect some constructive and timely feedback from assessors
- Do I need ethical approval? COPE checklist. Local Ethics Research Committee: many forms that focus on scientific merit; safety of subjects; patient confidentiality; informed consent; subject information sheet; financial inducements and experience of researcher/ supervisor. Ethical consent cannot be obtained retrospectively!
- Execute study – two or more groups – questionnaire, clinical examination/ test results, medical or other records
- Collect data, keep safe and back up
- Critically appraise data to include descriptive and inferential statistics. Is the data normally distributed and is it a continuous variable? Ask how to use SPSS software


10
8
6
4
2
0
Group 'A'
HTV RA
Noise RA
Respiratory RA
WRS RA
Skin RA
Manual H. RA
Risk Assessment





Ref: Poole CJM et al. Occup Med 2005; 55:345-8

Q: Should sewage workers be vaccinated against hepatitis A?

	HAV IgG	
	present	absent
sewage workers	23 *	17
carers of learning disabled	19	34
controls (road & office workers)	13	25

* OR 2.60 (95% CI 1.04 to 6.51)

Ref: Poole CJM, Shakespeare AT. BMJ 1993; 306: 1102

Q: Is diabetic control compromised by working shifts?

	n	Blood glucose (mmol/l) Mean (SD)	Serum fructosamine (umol/l) Mean (SD)	HbA_1 (%) Mean (SD)
Shifts on insulin	16	9.9 (4.2)	388 (70)	10.1 (1.9)
Days only on insulin	8	11.6 (3.7)	422 (66)	10.5 (1.8)
Oral hypoglycaemic drugs	9	10.5 (6.3)	365 (85)	10.0 (2.3)

Student's t test - no difference between groups but should ANOVA have been used?

Ref: Poole CJM, Wright AD, Nattrass M. Br J Ind Med 1992; 49: 513-5

Competency		Yes/No
Knowledge: be able to understand:		
1	How to design a research study.	
2	How to use appropriate statistical methods.	
3	The principles of research ethics.	
4	How to write a scientific paper.	
5	Sources of research funding.	
6	The principles and application of epidemiological methods in research and in problem solving	
7	The application of medical statistics and the interpretation of statistical analysis methods in scientific research.	
8	Computer based systems for data collection and analysis.	
9	Ethical considerations in research.	

Competency		Yes/No
Skills:		
10	Be able to define a problem in terms of needs for an evidence base.	
11	Be able to undertake systematic literature search.	
12	Be able to undertake a systematic and critical appraisal and review of scientific literature.	
13	Be able to produce an evidence based digest of the literature.	
14	Be able to frame questions to be answered by a research project.	
15	Be able to develop protocols and methods for research.	
16	Be able to execute an appropriate study design.	
17	Plan data collection for simple surveys including sample selection and methods of recording and storing data.	
18	Be able to use databases.	
19	Be able to accurately analyse data statistically.	
20	Have good written and verbal presentation skills.	
21	Present investigation and results in the format of a research based report.	
22	Be able to write a scientific paper for peer-reviewed publication.	

Competency		Yes/No
Attitudes:		
23	Demonstrate curiosity and a critical spirit of enquiry, and where appropriate a critical attitude towards current practice.	
24	Acceptance of the need for critical review and for research so as to found a solid base for good practice.	
25	Ensure patient confidentiality.	
26	Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.	
27	Respect individual confidentiality when presenting data.	
28	Disposition to cooperation and liaison with statisticians and other research colleagues.	

How do you do it?

- Write up, spell check & ask a colleague to read it (8,000 to 10,000 words)
- Introduction and Method first. Abstract last
- Present project at SOM/ ANHOPS/ departmental meeting (a communication skill competency)
- Submit completed dissertation to Faculty before sitting exit exam
- Expect to be asked to make improvements/ modifications by assessors before binding manuscript
- Try also to write a paper and submit it to a peer reviewed journal
- Recommended reading - Clinical Research by Smith FG and Smith JE. Published by Taylor Francis. London 2003. ISBN 1859960286.