

THOR

The Health and Occupation Research network (Incorporating specialists' and THOR-GP reports)

<http://www.population-health.manchester.ac.uk/epidemiology/COEH/research/thor/>

Or

<http://www.coeh.man.ac.uk/thor>

Dear colleague,

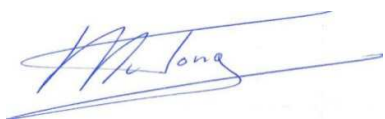
I would like to thank you for your support to the occupational disease reporting schemes. Because of your contributions, the schemes continue to generate useful information.

As you will be aware Professor Raymond Agius retired in September of this year, although he is still active in the field as Emeritus Professor. It is a great honour to follow in his footsteps as the Director of the Centre for Occupational and Environmental Health and the Principal Investigator of THOR schemes. Clearly, it will be very difficult to replace someone with the level of knowledge and expertise as Professor Agius. I will bring a different expertise to the team as my background is in occupational and environmental epidemiology and exposure assessment. To cover the occupational medicine expertise, we are in the process of adding an additional Occupational Physician to the THOR team. I am very confident that with these changes we will be able to continue the THOR scheme, as well as continue to explore opportunities for improvements and innovations.

One of the main challenges remains the recruitment of physicians to participate in the scheme in order to generate sufficient data reports to ensure continuing viability. In addition, as I am fully aware of the various time pressures that you have, we continue to work on ways to make your contribution to the schemes a worthwhile activity. One example of this is EELAB, and I would encourage GPs and OPs to use this facility which would earn you up to 5 CPD points, (CPD accredited by the Faculty of Occupational Medicine). We are working on extending EELAB for our clinical specialist schemes.

I would like to wish you all a Merry Christmas and all the very best for 2018!

Yours sincerely



Martie van Tongeren
Professor of Occupational and Environmental Medicine

QUARTERLY REPORT

December 2017

This THOR (including THOR-GP) combined quarterly report summarises the cases reported in the quarter July to September 2017. It includes a special feature on the symptom onset data that is reported to THOR.

If you have any comments regarding the type of information you would like to see included (or not) in future reports, or suggestions as to how we could improve the reports then please contact THOR's Manager, Dr Melanie Carder at melanie.carder@manchester.ac.uk or phone 0161 275 5636. We are pleased to hear from you.

CASE REPORTS: July to Sept 2017

Over 1000 physicians currently participate in the THOR schemes. Physicians can report either on a core (reporting each month) or a sample (reporting for one randomly selected month each year) basis. A total of 334 actual, 1335 (estimated) cases were reported during this period, with estimated cases being those reported by sample reporters multiplied by 12 and added to the core cases.

The actual and estimated number of cases by major category and diagnostic group, for clinical specialists (chest physicians, dermatologists, occupational physicians (OPs) and general practitioners (GPs)) are shown in Table 1.

Table 1 Actual and estimated cases by major category and diagnostic group, July to Sept 2017

CATEGORY	DIAGNOSTIC GROUP	CLINICAL SPECIALISTS			OCCUPATIONAL PHYSICIANS			GENERAL PRACTITIONERS	
		Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	%
RESPIRATORY DISEASE	Asthma	17	39	14	2	13	100	No case reports from GPs this quarter	
	<i>ascribed to sensitisation</i>	14	36	-	-	-	-		
	<i>ascribed to irritation/RADS</i>	3	3	-	-	-	-		
	<i>Unspecified</i>	0	0	-	-	-	-		
	Inhalation accidents	0	0	0	0	0	0		
	Allergic alveolitis	6	28	10	0	0	0		
	Bronchitis/emphysema	1	12	4	0	0	0		
	Infectious disease	1	1	<1	0	0	0		
	Non-malignant pleural disease	27	71	25	0	0	0		
	<i>predominantly plaques</i>	23	56	-	-	-	-		
	<i>predominantly diffuse</i>	6	6	-	-	-	-		
	<i>Unspecified/other</i>	3	14	-	-	-	-		
	Mesothelioma	9	64	23	0	0	0		
	Lung cancer	2	13	5	0	0	0		
	Pneumoconiosis	32	54	19	0	0	0		
	Other	7	7	2	0	0	0		
	Total diagnoses	102	289		2	13			
	Total cases	97	284	100	2	13	100		

*As more than one diagnosis may be reported the sum of percentages and total cases in each diagnostic category may be greater than 100%
NB. only actual cases are provided for THOR-GP; since methods for calculating estimated totals based on GP reports are under further development.*

CATEGORY	DIAGNOSTIC GROUP	CLINICAL SPECIALISTS			OCCUPATIONAL PHYSICIANS			GENERAL PRACTITIONERS	
		Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	%
SKIN	Contact dermatitis	98	307	86	2	13	100	1	33
	<i>Allergic</i>	33	55	-	-	-	-	-	-
	<i>Irritant</i>	47	168	-	-	-	-	-	-
	<i>Allergic and irritant</i>	16	82	-	-	-	-	-	-
	<i>Unspecified</i>	2	2	-	-	-	-	-	-
	Contact urticaria	3	14	4	0	0	0	1	33
	Folliculitis/acne	0	0	0	0	0	0	0	0
	Infective	0	0	0	0	0	0	1	33
	Mechanical	0	0	0	0	0	0	0	0
	Nail	2	24	7	0	0	0	0	0
	Neoplasia	6	39	11	0	0	0	0	0
	Other	2	13	4	0	0	0	0	0
	Total diagnoses	111	397		2	13		3	
	Total cases	106	359	100	2	13	100	3	100
MUSCULOSKELETAL	Hand/wrist/arm	No case reports from clinical specialists			27	148	60	0	0
	Elbow				0	0	0	2	29
	Shoulder				3	36	15	0	0
	Neck/thoracic spine				0	0	0	1	14
	Lumbar spine/trunk				5	27	11	2	29
	Hip/knee				2	24	10	1	14
	Ankle/foot				0	0	0	1	14
	Other				1	12	5	1	14
	Total diagnoses				38	247		8	
	Total cases				38	247	100	7	100

CATEGORY	DIAGNOSTIC GROUP	CLINICAL SPECIALISTS			OCCUPATIONAL PHYSICIANS			GENERAL PRACTITIONERS	
		Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	Estimated diagnoses	%	Actual diagnoses	%
MENTAL ILL-HEALTH	Anxiety/depression	No case reports from clinical specialists			34	210	55	9	60
	Post-traumatic stress disorder				1	12	3	0	0
	Other work-related stress				28	160	42	8	53
	Alcohol or drug abuse				0	0	0	0	0
	Psychotic episode				0	0	0	0	0
	Other				3	14	4	1	7
	Total diagnoses				66	396		18	
	Total cases				61	380	100	15	100

Other cases

In addition to the main diagnostic categories described in Table 1, OPs and GPs can report 'other' diagnoses of work-related ill-health (WRIH).

OPs reported two 'other' cases this quarter, one diagnosed as assault leading to abscess in a care home nurse, and one diagnosed as dizziness/vertigo attributed to the workload in a school administrator.

GPs reported 1 'other' case of WRIH this quarter, diagnosed as prostatitis in a clerical worker attributed to sitting.

QUARTERLY FEATURE

For this quarters' feature we thought you might be interested in an overview of the symptom onset data that is reported to THOR. Since 2006, we have asked all THOR reporters to submit information on the month and year of the onset of the symptoms that the patient is presenting with. These data allow us to investigate the time lapse between the symptom onset and when the case of WRIH was reported to THOR, and to look at patterns and differences between diagnostic categories, e.g. respiratory or skin, reporter types, e.g. OPs or dermatologists, and even causal agents.

Figures 1 and 2 show the proportional time lapse between the date of symptom onset and date reported for actual cases of contact dermatitis (Figure 1) and asthma (Figure 2) reported by dermatologists to EPIDERM, respiratory physicians to SWORD, and OPs to OPRA (2006-2016). For work-related contact dermatitis, nearly 80% of cases seen by OPs reporting to OPRA compared to 50% of cases seen by dermatologists reporting to EPIDERM were seen within 12 months after the onset of symptoms. Overall the time lapse between onset of symptoms and date seen by a physician was shorter for OPs at 3 months (median) compared to 13 months (median) for dermatologists.

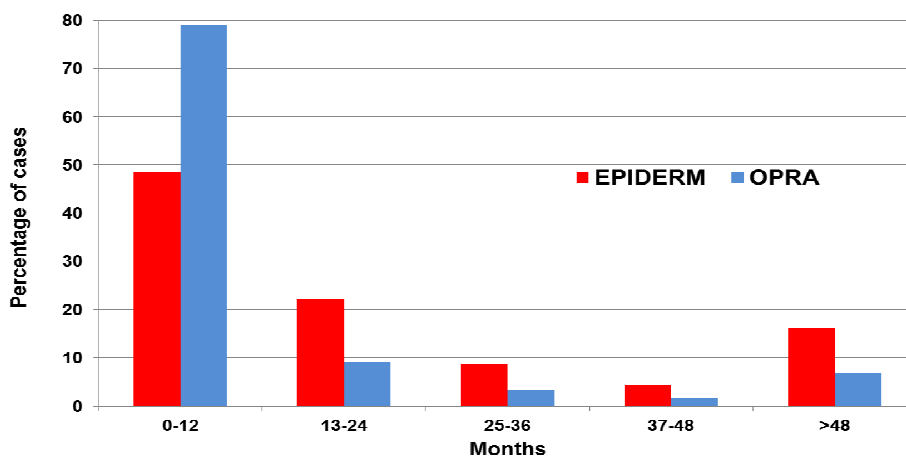


Figure 1 Proportional time lapse between month of symptom onset and reporting month for actual cases of **contact dermatitis reported to EPIDERM and OPRA (2006-2016)**

A similar pattern is also seen for asthma (Figure 2) with an overall shorter time lapse between symptom onset and date seen by an OP (median 6 months) compared to chest physicians (median 22 months).

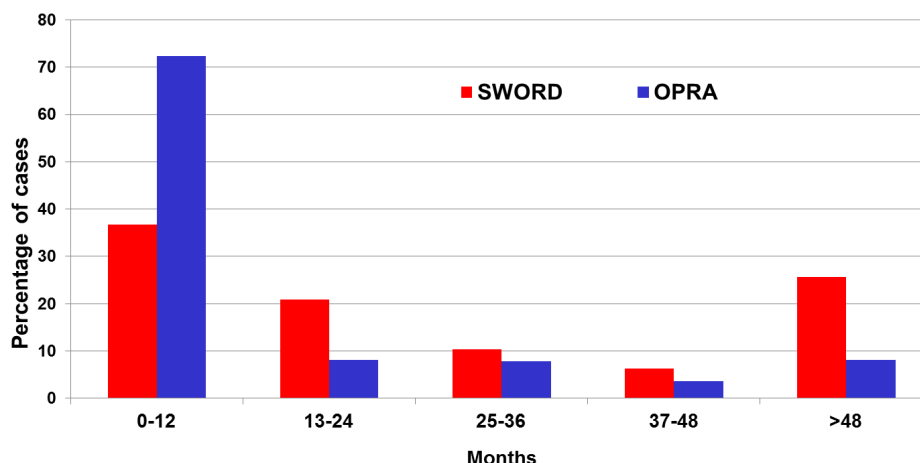


Figure 2 Proportional time lapse between month of symptom onset and reporting month for actual cases of **asthma reported to SWORD and OPRA (2006-2016)**

In addition to comparing the duration between symptom onset and date seen for different groups of physicians, we can also look at whether the time lapse varies for different suspected agents. For example, the three most frequently reported groups of causal agents for allergic contact dermatitis reported to EPIDERM are hairdressing chemicals, rubber chemicals / materials and acrylics and acrylates. Figure 3 shows the time lapse for these 3 agent groups (alongside all reported agents). The results suggest that, compared to the other agents studied and agents overall, a higher proportion of cases attributed to acrylics and acrylates are reported to EPIDERM within 12 months of symptom onset. The median number of months between symptom onset and date seen by a physician are; all agents (12 months), hairdressing chemicals (12 months), rubber chemicals (14 months) and acrylics and acrylates (11 months).

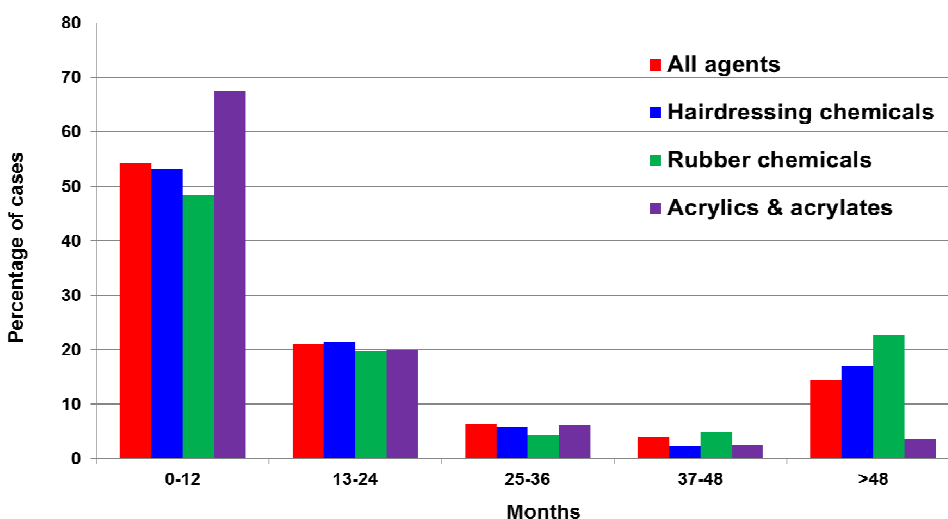


Figure 3 Proportional time lapse between month of symptom onset and reporting month for actual cases of **allergic contact dermatitis by top 3 most reported causal agents reported to EPIDERM (2006-2016)**

Likewise, for cases of occupational asthma reported by chest physicians to SWORD (Figure 4), the data for the 3 most frequently reported suspected agents suggest that there is a slightly longer time lapse between symptom onset and date seen by a physician for cases attributed to flour / amylase. The median number of months between symptom onset and date seen by a physician are; all agents (23 months), isocyanates and laboratory animals & insects (both 24 months), and flour /amylase (27 months).

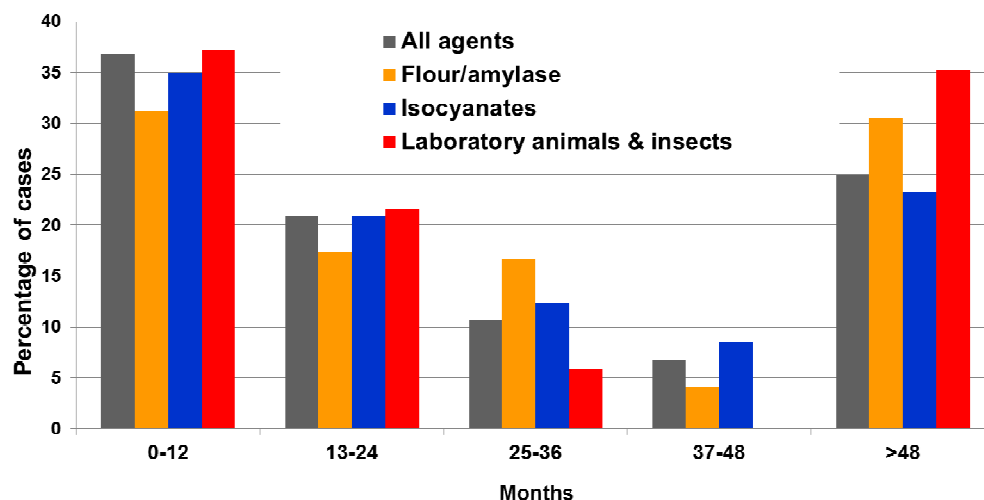


Figure 4 Proportional time lapse between month of symptom onset and reporting month for actual cases of **asthma by top 3 most reported causal agents reported to SWORD (2006-2016)**

The data that you, as reporters, provide to THOR are invaluable in allowing these types of investigations into the time lapse between symptoms presenting in patients and cases being seen by a physician. Some of the reasons for any observed differences can be explained by factors such as referral processes, i.e. whether the case has been referred from primary to tertiary care, reported by occupational physicians, general practitioners or clinical specialists. Further analysis is being carried out to explore the data in more detail and to investigate other factors which may impact on the length of time between symptom onset and the patient being seen by a physician. For example, it is feasible that cases attributed to agents that are subject to routine health surveillance may be seen by a physician quicker compared to cases attributed to other agents that are not under routine surveillance.

BECK REPORT

We are most grateful to Dr Mark Wilkinson for this quarter's 'Beck Report', which provides a commentary for cases of work-related skin disease reported to THOR and THOR-GP UK this quarter.

BECK REPORT

We highlighted some time ago the increasing number of cases of allergy to acrylate in nail technicians in an EPIDERM publication of 2014¹. The problem, however, persists with 7 (8%) of 90 cases reported to EPIDERM this quarter citing acrylate allergy amongst nail technicians. The UK is not alone in this fashion trend with cases being reported amongst workers and consumers throughout Europe^{2,3} and around the globe^{4,5}.

Technique in the application of acrylate nails is important in reducing the risk of exposure and subsequent sensitisation. In the UK, the Hair and Beauty Industry Authority (HABIA) produce a code of practice for the nail industry⁶ that was last updated in 2007. This states that 'non-latex (synthetic), powder free gloves are recommended to avoid allergic reactions' but fail to appreciate that, whilst avoiding type I latex allergy, acrylate monomers rapidly penetrate most glove types and laminate should ideally be worn although nitrile may provide short term protection⁷. HABIA outline the main occupational risks as musculoskeletal and respiratory. It would appear that there's an urgent need to update current guidance to keep up with the current fashion.

A more typical case of contact allergy to acrylates this month was from UV-cured acrylate chemicals used to print onto tin cans. UV is also used as a curing agent in the beauty industry. Typically, this may be either a UV lamp which emits a broad spectrum and if the cure time is long enough will leave little residual monomer. However, LED lamps are frequently used and emit a narrow UV spectrum. If the lamp is "mismatched" to the acrylate resin system used, this may result in a significant amount of uncured monomer remaining with a risk of sensitisation.

In March 2017, the Scientific Committee on Consumer Safety (SCCS) accepted a request from the EU to provide an opinion on the safety of 2 acrylates⁸ following an outbreak of allergic contact dermatitis amongst consumers using home cured nail varnish in Sweden⁹. Highlighting the risks, the Methacrylate Producers Association Inc state¹⁰ that various methacrylates in unreacted monomeric liquid form are not appropriate for use in artificial nail products. In particular, the skin sensitization properties of the esters indicate their use in such products should be restricted. It is to be hoped that a European framework to manage the risk will be soon in coming although what will happen in the UK if it's after March 2019 I'm not sure.

Sticking with industrial adhesives, epoxy resins were reported in 2 cases from the aircraft industry this quarter. In excluding contact allergy, it needs to be remembered to always test with a worker's own samples as specific chemicals may be used as in the case of tetraglycidyl-4,4'-

¹ Kwok C, Money A, Carder M, et al Cases of occupational dermatitis and asthma in beauticians that were reported to The Health and Occupation Research (THOR) network from 1996 to 2011. Clin Exp Dermatol 2014; 39: 590–5

² Raposo I, Lobo I, Amaro C et al. Allergic contact dermatitis caused by (meth)acrylates in nail cosmetic products in users and nail technicians – a 5-year study. Contact Dermatitis 2017; doi:10.1111/cod.12817

³ Gatica-Ortega ME, Pastor-Nieto MA, Mercader-García P, Silvestre-Salvador JF. Allergic contact dermatitis caused by (meth)acrylates in long-lasting nail polish – are we facing a new epidemic in the beauty industry? Contact Dermatitis 2017; doi:10.1111/cod.12827

⁴ Le Q, Cahill J, Palmer-Le A, Nixon R. The rising trend in allergic contact dermatitis to acrylic nail products. Australas J Dermatol. 2015; 56: 221-3.

⁵ Chou M, Dhirga N, Strugar TL. Contact Sensitization to Allergens in Nail Cosmetics. Dermatitis. 2017; 28: 231-240.

⁶ https://www.habia.org/PDF/standards-quals/Code_of_Practice_for_Nail_Services.pdf last accessed 21 Nov 2017

⁷ Ursberg A M, Bergendorff O, Thorsson A C, Isaksson M. Is there a good in vivo method to show whether gloves are sufficiently protective when a nail technician is exposed to (meth)acrylates? An in vivo pilot study. Contact Dermatitis 2016; 75: 62–65.

⁸ https://ec.europa.eu/health/sites/health/files/scientific_committees/consumer_safety/docs/sccs2016_q_010.pdf last accessed 21 Nov 2017

⁹ Dahlin J, Berne B, Dunér K et al. Several cases of undesirable effects caused by methacrylate ultraviolet-curing nail polish for non-professional use. Contact Dermatitis. 2016; 75: 151-6.

¹⁰ http://static1.1.sqspcdn.com/static/f/1405676/22020353/1361810987690/artificial_nails2.pdf?token=cWtmzdx2TN51PdO1HtO4t5SAGY%3D last accessed 21 Nov 2017

methylenedianiline (TGMDA) an aniline epoxy resin¹¹ used in aircraft manufacture - otherwise missed using our commercially available allergens.

The most unusual case of the quarter is perhaps the radiotherapy technician whose hands deteriorated when moulding a thermoplastic radiotherapy mask. A doubtful allergic reaction to phenol formaldehyde resin was reported but when investigating reactions to medical devices it can be frustrating that there is no ingredient labelling or legal requirement on the manufacturer to disclose the constituents. An impossible situation to resolve and for the worker to face!

Dr Mark Wilkinson, Consultant Dermatologist, Leeds General Infirmary

PUBLICATIONS

The following are recently published, or forthcoming, papers based on THOR work:

- Carder M, Darnton A, Gittins M, Stocks SJ, Ross D, Barber CM, Agius RM. **Work-related long-latency respiratory disease in Great Britain: 1996 to 2014.** European Respiratory Journal, *in press*
- Lastovkova A, Carder M, Rasmussen HM, Sjoberg L, de Groene GJ, Sauni R, Vevoda J, Vevodova S, Lasfargues G, Svartengren M, Varga M, Colossio C, Pelclova D. **Burnout syndrome as an occupational disease in the European Union: an exploratory study.** Ind Health. 2017 Nov 3. doi: 10.2486/indhealth.2017-0132. [Epub ahead of print]
- Montgomery RL, Agius R, Wilkinson SM, Carder M. **UK trends of allergic occupational skin disease attributed to fragrances 1996-2015.** Contact Dermatitis. 2017 Oct 27. doi: 10.1111/cod.12902. [Epub ahead of print]
- Zhou AY, Carder M, Gittins M, Agius R. **Work-related ill health in doctors working in Great Britain: incidence rates and trends.** The British Journal of Psychiatry, bjp.bp.117.202929; DOI: 10.1192/bjp.bp.117.202929
- Zhou AY, Carder M, Hussey L, Gittins M, Agius R. **Differential reporting of work-related mental ill-health in doctors.** Occup Med (Lond). 2017 Oct1;67(7):522-527.
- Bensefa-Colas, L., Stocks, S.J., McNamee, R., Faye, S., Pontin, F., Agius, R.M., Lasfargues, G., RNV3P members, Telle-Lamberton, M. and Momas, I. **Effectiveness of the European chromium(vi) directive for cement implementation on occupational allergic contact dermatitis occurrence: assessment in France and the U.K.** Br J Dermatol 2017; 177: 873–876.
- Zhou Y, Dodman J, Hussey L, Sen D, Rayner C, Zarin N, Agius RA. **Electronic, Experiential, Learning, Audit and Benchmarking (EELAB): An innovative educational resource in occupational medicine.** Occup Med (Lond) 2017 Jul 1;67(5):363-370.

¹¹ Pesonen M, Suuronen K, Jolanki R et al. Occupational contact dermatitis caused by aniline epoxy resins in the aircraft industry. Contact Dermatitis. 2015; 73: 113-8.

STAFF CHANGES / THOR CONTACTS

Christina O'Connor has left her role as Project Assistant for SWORD and EPIDERM to take up another position in the University; we wish her well in her new job.

We are in the process of replacing Christina, please see Table 2 for details of who to contact in the interim period.

Table 2 THOR Contact details

SCHEME	email	Phone
EPIDERM & SWORD	Susan.taylor@manchester.ac.uk	0161 275 7103
OPRA & THOR-GP	Susan.taylor@manchester.ac.uk	0161 275 5531
DATA REQUESTS	Melanie.carder@manchester.ac.uk	0161 275 5636
GENERAL ENQUIRIES	Annemarie.money@manchester.ac.uk	0161 275 8491