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NIHR CLAHRC West Midlands News Blog

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The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health



Welcome to the latest issue of your NIHR CLAHRC West Midlands News Blog.



In this issue we look at the <u>future of medicine</u> and what it holds for young doctors. We also look at recent papers on <u>fatigue in surgeons</u>; the <u>cost threshold</u> for a year of life; the use of <u>statistics/epidemiology in history</u>; molecular <u>diagnostic testing</u> in children with ASD; the effect of <u>physical activity on cognitive decline</u>; and the effect of <u>trans-fats in our diet</u>.

We also bring <u>PPI information</u>; the <u>latest</u> <u>news</u>; profile <u>Wendy Robertson</u>; highlight <u>upcoming</u> <u>events</u>; and have our <u>CLAHRC WM Quiz</u>. Finally, we list some of our <u>latest publications</u>, and feature some recent Tweets.

We hope that you find these posts of interest, and we welcome any comments. You can find previous issues of our News Blog <u>here</u>.

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Director & Co-Directors' Blog

The Future of Medicine

The CLAHRC WM Director participated in a panel discussion recently on "The Future Doctor". So what does the future hold for young doctors?

We live in an exciting time of scientific discovery in the life sciences. A number of technical/scientific changes are in train. Many of these are not disruptive in that they can be easily incorporated in existing working patterns. For example, there is much justified interest in molecular diagnosis, but stratification of treatment by genetic testing is just another type of sub-group. Even a method to slow down cellular ageing, thereby extending lifespan, would be socially and individually important, but would not change medical practice in any fundamental way.

However, there are other technological changes afoot that will prove 'disruptive'. Discoveries in the realm of brain and mind that could revolutionise the nature, not just the content, of medical work. Thus, working out the basic mechanisms behind schizophrenia or finding a treatment for Alzheimer's would be 'game changers'. Much testing may be done at the bedside using chip-based molecular sequencing and bed-side ultrasound, replacing much of what currently happens in labs and radiology departments. Information technology is perhaps the prime candidate for a development that would truly disrupt medical practice. The idea that the doctors diagnostic skill might be supplanted, or at least assisted, by machine has been around since Tim de Dombal's famous studies in the 1970s.[1] The fact that it has been slow in coming, does not mean it will never come; just as Babbage's computing machine presaged Turing's computer by over half a century.

Such massive technological breakthroughs aside, it is social, not just technological, factors that will change what it is like to be a doctor. Of course doctors in all countries are living within a kaleidoscope of changing policies that often pre-occupy them – new regulations for Medicare in the US, and weekend working in the English NHS, for example. Here we are concerned with the more fundamental drivers for change – those that lie behind the policies.

1. Balance between regulation and inspiration.

Taylorism has come to medicine. Frederick Taylor came up with a theory of scientific management before the Second World War – processes should be broken down into their component tasks, and performance of each task should be measured and rewarded accordingly. Sub-specialisation, of course, opened the door to Taylorism, and empirical demonstration of differences in performance across services then drove a kind of medical 'scientific management'. It has gone too far. Too many targets can 'crowd out' commitment and innovation.[2] Flair in making a difficult diagnosis, showing compassion, and balancing competing objectives in looking after patients with multi-morbidity cannot be regulated by targets and incentives – professionalism needs to re-assert itself and medical schools must grow beyond their obsession with scientific achievement and lead the way. Alternatively, they will quite properly lose their control of medical education. Regulators will never go away, but they must learn to take a back seat – they are the safety net, not the trapeze.

2. Skill substitution

Medical hegemony has gradually been chipped away from all sides. Nurses, the new profession of physician assistant, and pharmacists, have been given a role in both diagnosis and therapy. Doctors are expensive, so it makes sense to steward the resource, and encourage skill substitution. The medical profession should not oppose these developments, but take a lead in defining a cognitively elite role for doctors as systems thinkers, managers, and communicators. Yet many seem to be heading as fast as they can go in the opposite direction, becoming gifted technicians or super specialists. For example, there are specialists for diseases of the pituitary gland. Such a clinician assumes responsibility after the diagnosis (the difficult bit) has been made. It is possible to imagine medicine squeezed out of existence between computers replacing the cognitively-demanding aspects of medicine and other professions taking over the routine and narrow work currently done by sup-specialists. The CLAHRC WM Director does not believe such a dystopian world will come to exist, but argues strongly for the return of the generalist. It is true that there is a relationship between volume of cases treated and quality, but only on a narrow definition of quality. What is the point of treating every individual condition perfectly if the resulting polypharmacy proves lethal?

3. Psychological care

But the biggest medical abrogation of responsibility lies not in the in arena of holistic physical care, but in total care of patients – something we have blogged about previously.[3] Too often the CLAHRC WM Director has heard doctors, particularly surgeons, say something akin to "I ask the nurse to do that, they are so much better at it." Is this not an admission of rank incompetence? When the CLAHRC WM Director was in practice, the surgery – which had been difficult during training – become quotidian. The fascination, reward and challenge lay in looking after the patient, body and soul.

In conclusion, regulation and monitoring are here to stay, but they are woefully inadequate as a means to ensure high quality practice. Such practice requires holistic care for the body and mind. The target culture should be tamed. The doctors of the future need to be carefully nurtured. Their education should be an inspiration, building resilience and a sense of dedication. Ideally, one would select applicants for medical school based on likelihood of exhibiting these traits. In reality, the science of selection is in its infancy. [4] Perhaps it is a holy grail. But the doctors of the future are going to have to escape from the solipsistic sub-specialist net that has been made for them. This is particularly problematic in the UK where we have a narrow science-based A-level system. Two ideas – require the International Baccalaureate examination as an entry criterion and/or insist on previous broad base under-graduate degrees, as in North America.

-- Richard Lilford, CLAHRC WM Director

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CLAHRC WM Quiz

Think you know your anatomy? What is Jacobson's organ?

Email CLAHRC WM your answer.

Answer to our previous quiz: Homo naledi was recently discovered within the Dinaledi Chamber of the Rising Star cave system in South Africa. It appears that the bodies were placed deliberately within the caves, a trait previously only attributed to Homo sapiens and Neanderthals.

Congratulations to Melita Shirley who was first to answer correctly.

Director's Choice - From the Journals

Fatigue in Surgeons

Do patients who are operated on by a surgeon who has been awake at night have worse outcomes than those patients whose operation was carried out by a rested surgeon?

--Stop and guess the answer before reading on--

A recent paper [1] in the New England Journal of Medicine says no. The rate of some type of 'complication' was almost identical when the surgeon was tired or fresh – 22.2% versus 22.4% (P=0.66). The paper is a nice example of anonymous data-linkage. The study was based on all patients in the Canadian state of Ontario who underwent one of 12 major operations over a five year period. A specific fee code showed whether a given physician had attended patients between midnight and 07:00. In order to get rid of possible specific effects of physician/institution, type of procedure, or patient age, patients were matched on these factors. The statistical analysis then allowed for the clustering so created. Since, in general, fatigue is associated with diminished cognitive and manual performance, the results suggest that surgeons can compensate under the exigencies of the operating theatre. In his young days the CLAHRC WM Director often had to operate while fatigued, but did so with heightened arousal and vigilance.

-- Richard Lilford, CLAHRC WM Director

Leave a comment

Reference

How Much for a Year of Human Life?

£20,000 is England's answer to the above question – this is the threshold price for a year of healthy life according to NICE. This threshold willingness-to-pay (WTP) is based on the concept of the opportunity cost – the value of the treatment that the index intervention should supplant because it is the next best use of money in terms of health benefit per unit cost. The WTP threshold has been the subject of much investigation in England and remains controversial.

The threshold for low- and middle-income countries (LMICs) is also the subject of much discussion and is usually based on mean *per capita* GDP – for instance the World Bank states that a healthy life year should be valued at the *per capita* GDP to be *highly* cost-effective, or three times the *per capita* GDP to be cost-effective.[1]

A recent article considers methods to determine thresholds for cost-effective interventions [2]; the WTP threshold described above, benchmarking against an intervention already adopted and league tables. Benchmarks invert the logic – they say *if* it is used, *then* it is cost-effective. However, health economics is supposed to be normative, and say that *if* it is cost-effective, *then* it should be used.

So we can eliminate benchmarks as a credible method, leaving the WTP threshold and league tables in contention. The problem with the latter is that the relative payback of an intervention varies materially across countries. However, it is based on the realism that budgets are limited and ephemeral, and league tables have been constructed for reference purposes, notably the WHO-Choice list [3] and the Tufts cost-effectiveness registry.[4]

The CLAHRC WM Director's view is that both the WTP threshold and the league table approach have advantages and disadvantages. So, if you have been to all the trouble to calculate an ICER (Incremental Cost-Effectiveness Ratio), then why not use both methods; compare your results with a threshold and also see how the result compares with alternative interventions in a league table?

-- Richard Lilford, CLAHRC WM Director

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References

Long Social Memories

Until reading this paper [1] the CLAHRC WM Director was not aware that history has become such a statistical/epidemiological subject.

Now it is known (for example from Paul Collier's popular books) that conflict in Africa is correlated with: 1) mineral resources to be extracted; 2) weak political institutions; 3) ethnic fragmentation; and 4) endemic poverty. In the latter example, the direction of causality is far from clear. Colonial map drawers must bear plenty of responsibility for 3), and more arguably 2). But the colonial period was really rather brief; what about a legacy from the more distant past? Well, Besley and Reynal-Querol obtained data on all historical conflicts in Sub-Saharan Africa documented to have occurred between 1400 and 1700. They found that areas with high rates of conflict in this epoch have statistically increased rates of post-colonial conflict compared to areas with lower rates of pre-colonial conflict. The high conflict areas are associated with lower levels of trust, stronger senses of ethnic identity, and lower economic development. Quite *how* memory is propagated back to the period before Queen Anne sat on the British throne is a mystery to the CLAHRC WM Director. The article is full of statistical tables and algebra, and this was as fascinating as the subject matter.

-- Richard Lilford, CLAHRC WM Director

Leave a comment

<u>Reference</u>

Molecular Diagnostic Testing, including Whole-Exome Sequencing, in Children with Autism Spectrum Disorder

CLAHRC WM News Blog features articles of generic, rather than specific, interest. The general interest here lies in the use of molecular techniques to unravel the mechanisms of diseases, especially neurological diseases, that are inaccessible to study in other ways.

A study of 258 consecutively ascertained children with ASD was recently reported in JAMA.[1] The incidence of genetic abnormalities was low (about 6%) in ASD children with no morphological abnormalities, but unsurprisingly reached much higher levels (38%) when complex morphological abnormalities were present. To the CLAHRC WM Director this finding suggests that ASD, when not associated with atypical physical features, is seldom caused by embryonic *de novo* or inherited genetic disorder. But could it be caused by propagation of a clone of neurons with a new mutation derived during the first wave of brain remodelling *in utero?*[2] [3]

-- Richard Lilford, CLAHRC WM Director

Leave a comment

References

RCT Does Not Confirm That Moderate Intensity Physical Activity is More Effective than Health Education in Reducing Cognitive Decline in Elderly People – Pity

The attractive theory that exercise, perhaps by inducing body-wide intra-cellular autophagy, promotes the health of all tissues – including the brain – does not gain support from this RCT (total n=1,635).[1] There was almost no difference at all in cognitive decline or incidence in dementia in this 24 month study. Maybe the exercise intensity was insufficient to yield a measurable improvement, in which case the CLAHRC WM Director's regular Spinning classes may produce some benefit after all. But he is starting to doubt it.

-- Richard Lilford, CLAHRC WM Director

<u>Leave a comment</u>

<u>Reference</u>

On Diet Again

Food is fuel for the body and so we have to get our energy from somewhere. Leaving protein aside we can consume sugar (bad, especially in 'free' form [1]),

polyunsaturated fats in vegetable oils (good), or saturated fats (okay – well not nearly as harmful as previously thought [2]). Then there are trans-fats. Rarely found in nature, these manufactured fats are pure bad. Fats contain long hydrocarbon chains. Changes to these chains completely change the physical characteristics of the fat and its health effects. Carbon atoms in the chain can be joined to each other by a double or a single bond. In the latter case, linkage to a hydrogen atom replaces the second linkage to a carbon atom. If just once carbon atom is linked to a hydrogen atom, the fat is referred to as unsaturated and its physical properties change. However, a very subtle change in the *orientation* of the hydrogen atom in three-dimensional space yields non-subtle changes in the health effects of the unsaturated fat. In the natural fat, the hydrogen occupies one orientation (cis), and it is healthy. But in manufactured fat it occupies the alternative (trans) orientation, and it is bad – pure bad!

The question is not whether trans-fats are bad, but what to do about it. In individual terms – eschew them! But in policy terms, should we nudge, advise, exhort, shame, or should we coerce by phasing in a ban? A recent BMJ paper [3] models the effects of each policy. The ban saves more lives than less coercive policies. The CLAHRC WM Director is a libertarian, and does not like coercion. On the other hand, trans-fats are devoid of merit – there is no real trade-off, unlike say carbon fuels, alcohol, areca nut, hang-gliding, gambling, and lots of other things that at least some people like. To put this another way, people who consume trans-fats can't really be said to be choosing them – so let's ban the bloody things!

-- Richard Lilford, CLAHRC WM Director

Leave a comment

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Patient and Public Involvement

'Pay-it-Forward with Public Engagement' Team Building Workshop Programme

The Public Engagement with Research Committee (PERC) is pleased to announce an exciting pilot opportunity for five University of Birmingham researchers enthusiastic about public engagement to take part in a pay-it-forward programme that will boost their own public engagement, mentorship and team building skills. Researchers will travel as a group alongside Dr Caroline Gillett (Public Engagement with Research Officer) and Jon Wood (Science Communicator) to participate in an all-day practical workshop focused on public engagement organized by British Interactive Group (BIG) on Tuesday 24 November in Newcastle-Upon-Tyne. They

will then bring back the activities and training to together develop a practical public engagement workshop for staff and students next year. Find out more <u>here</u>.

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News

Do Robots Feature in the Future of Medicine?

CLAHRC WM Director Richard Lilford was recently interviewed by The Telegraph on the future of medicine and the role of artificial intelligence in relation to the panel mentioned <u>above</u>. It can be viewed <u>online here</u>.

Editorial on TRaCKED Study

Work by CLAHRC WM researchers on test result communication in primary care has been the focus of a <u>recent editorial</u> in the BMJ Quality and Safety. This is the second editorial on their work – the previous one can also be found <u>online</u>.

Congratulations

Congratulations to CLAHRC WM member Lucy Hope (née Ingram) who has recently started a new job as Senior Lecturer at Worcester University - we wish her well in her new role.

New Poster Topics for Quality and Safety in Healthcare

Two new poster topics have been announced for the 2016 International Forum on Quality and Safety in Healthcare – Work in Progress; and Long-term Impact of Previously Presented Projects. The deadline for abstract submission is **2**November 2015 and the event is being held in Gothenburg, Sweden between 12-15 April 2016. Please click here for more information on submitting an abstract.

World Research Making a Difference

In case any readers have yet to see this, we urge you to read the recent NIHR CLAHRC document "World Research Making a Difference", which demonstrates the impact of the applied health research activity undertaken by the national CLAHRC initiatives. Feedback from the NIHR/DH has been extremely positive, and it has been well received globally, with encouraging feedback from academics as far afield as Australia.

Areca Nut Addiction

CLAHRC WM Director Richard Lilford, along with Dr Chet Trivedy, recently visited Nagpur, India to met with colleagues at the Government Dental College and Hospital to discuss work around areca nut addiction (see previous blog). For more information, please see this article from the Times of India.

2015 Nobel Prizes

The winners of the 2015 Nobel Prizes in Economics and Physiology/Medicine have recently been announced. Angus Deaton has been awarded the 2015 *Sveriges Riksbank Prize in Economic Sciences* "for his analysis of consumption, poverty, and welfare." His work has enhanced the understanding of individual consumption choices, which could help design economic policies to promote welfare and reduce poverty. For example, it has already helped reshape the measurement of poverty by the Indian government.

The 2015 *Nobel Prize in Physiology or Medicine* was awarded to three scientists working in the field of parasitic diseases whose treatments have improved the lives of 3.4 billion people. One half was awarded to Youyou Tu who, using traditional Chinese medicines, discovered artemisinin, "a novel therapy against Malaria"; while the other half was awarded jointly to William C Campbell and Satoshi Ōmura for the discovery of ivermectin, "a novel therapy against infections caused by roundworm parasites," including river blindness and lymphatic filariasis.

Changes to NIHR Programme Grants

The NIHR have recently announced that they will be launching three competitions per year for NIHR Programme Grants for Applied Research. Stage 1 applications will be open in February, June and October, with the first beginning 10 February 2016. This move will reduce the time between calls and the time taken for research to moves along the research pathway and deliver meaningful results to patients. More information is available online.

Job Opportunities at Keele University

A number of exciting new job opportunities are available at Keele University:

Research Fellow (fixed-term, four years). http://tinyurl.com/plddclx. Application deadline, 1 November 2015.

NIHR Academic Clinical Lecturer in Physiotherapy (fixed-term, three years). http://tinyurl.com/OR15-35. Application deadline, 4 November 2015.

To discuss these positions further, please contact Prof C Mallen, c.d.mallen@keele.ac.uk

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Personality of the Issue

Wendy Robertson



Dr Wendy Robertson is an Associate Professor in Public Health at Warwick Medical School, and works on CLAHRC WM Theme 3, Prevention and Detection of Disease. Her research interests are broadly in the areas of health promotion and health protection. She has just completed an RCT of a parenting intervention for the treatment of childhood obesity, "Families for Health", comparing this with usual care in three sites across the West Midlands. She also helped to organise the conference on the 2nd July 2015 on childhood obesity for CLAHRC, in collaboration with Public Health England West Midlands. Other areas of interest include obesity in pregnancy and the methods for monitoring physical activity. In the area of health protection, she was involved with the investigation of a large outbreak of occupational respiratory disease at a factory that worked with metal working fluid within the West Midlands, and has maintained a research interest in this area.

Wendy graduated in Sports Science & Physical Education from the University of Loughborough (1983), has a Masters in Public Health from the University of Birmingham (2002), and a PhD from the University of Warwick (2010). Her NHS career started in 1985 as a Clinical Scientist at Birmingham Heartlands Hospital. In 1992 she was appointed as a Health Promotion Specialist (No Smoking Coordinator) with Solihull Healthcare NHS Trust. In 2000 she became a Specialist Trainee in Public Health within the West Midlands Deanery, completing public health training in 2006. She is on the UK Public Health Register and was elected a Fellow of the Faculty of Public Health in 2006.

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Selected Replies

Re: Where is the Philosophy of Science in Research Methodology?

I enjoyed your editorial (as always) in the latest CLAHRC newsletter. In response to your rhetorical question "when have you heard a health economist, epidemiologist or psychologist argue from an explicit epistemological or ontological premise," I <u>link an article</u> published during the 10 year period (1995- 2005) I worked at CHE, York which critiques the ontology and epistemology of conventional health economics (Mannion R & Small N. Postmodern Health Economics. 1999; *Health Care Anal.* 1999;**7**:255-72).

Although at face value the argument is postmodernist (constructivist if you like!) this is really a 'stalking horse' used to critique the very limited ontological/epistemological horizon (myopia) of mainstream economists. On closer reading it becomes clear that it is really a call for the incorporation of more heterodox economic thinking within mainstream health economics, and written almost 20 years ago argues for a broader range of theories and methods, including behavioural approaches and better engagement with ontological and epistemological issues and the adoption of dialogic methods.

Of course I was influenced by the 'old' 'behavioural' /Post-Keynesian economics (see Earl PE. The Economic Imagination: Towards a Behavioural Analysis of Choice. 1983) and not the more reductionist approach of the 'new' behavioural economics which has become popular over recent years. Alan Williams loved it!

-- Russell Mannion

I couldn't agree more with you, Richard, philosophy of science is hugely important to scientists. It helps them to uncover assumptions that inevitably underlie their work and provides them with a language and concepts to critically discuss them. In my view, Helen Longino's 'Science as Social Knowledge, Values and Objectivity in Scientific Inquiry' (1990) addresses these issues in an accessible and balanced way. However, this does not seem to be the received view, as observed by Susan Haack (another good read!), stating that 'philosophy of science is generally regarded to be as relevant to scientists as ornithology to birds' (original source unknown to me).

On the positive side, it might interest you to know that one of the great physicists of our time, Mikhail Katsnelson, IS interested in philosophy of science AND has actualy written about it. He does all of these things along with writing poetry.

-- Gert Jan van der Wilt

Dear Richard

Thank you for this stimulating piece. Applied health research often appears to lack any underlying philosophical basis and I believe this is one reason why it is a) rather unattractive to some of the most able early career researchers and b) often appears as little more than an aggregration of 'interesting facts'. I welcome your voice but would dispute your characterisation as a 'lonely' voice; there is at least one other.

-- Isabel Clare

I cannot resist starting this with a quote form Bertrand Russell that I recently had the pleasure of discussing with Richard. "The British are distinguished among the nations of modern Europe, on the one hand by the excellence of their philosophers, and on the other by their contempt for philosophy. In both respects they show their wisdom." [In: 'Philosophy and Politics'; Unpopular Essays (Unwin Paperbacks, London 1984) p. 13.]

When I was young and gauche and studying physics in Cambridge (in about 1970) I had a friend called David Papineau who organized a debate between (I think) Sir Martin Rees and a philosopher, whose name I forget, on the topic of "Schrodingers Cat". Believing that understanding the philosophy of science would make me a better physicist I went along with enthusiasm. What has remained with me is this. The philosopher spoke first and handed each of us a printed copy of his talk which he then proceeded to read out. Rees then stood up, without notes but with a piece of chalk, waved his hands around a lot, scribbled bits and pieces on the blackboard and then sat down. Later that week I happened to sit next to Rees at lunch in Kings and I asked him about this, to me, rather strange encounter. His answer was that there is so much that is completely agreed on in physics that we can argue and discuss it all in a very loose and unstructured way. On the other hand there is so little that is agreed on in philosophy that every word has to be chosen with care and defended to the death.

So the first problem might just be that we have drifted so far apart in our language and rules of engagement that it is hard to to talk to each other any more. The second problem is that while I still love the idea of teaching young people the philosophical underpinnings of their science I fear that they spend so much time looking after their Twitter, Facebook and e-mail accounts that they no longer have time to reflect on anything. But perhaps the best answer I ever had was one evening, having a somewhat drunken and totally uninformed argument with a friend who was studying philosophy, I asked him: What possible point can there be to studying philosophy? To which he immediately replied: So that we can have argument like this.

-- Brian Williams

Readers may want to look at the following paper published in Social Science and Medicine by Currie et al 2014 to understand why clinician scientists and those of a more sociological origin face challenges in mediating the epistemological divide in the CLAHRC initiative -- Currie G, El Enany N, Lockett A. Intra-professional dynamics in translational health research: The perspective of social scientists. Soc Sci Med. 2014:**114**(1): 81-8.

-- Graeme Currie

It was interestingly commented by a philosophy expert that her role was rather similar to that of an expert on drains. No-one bothers to think about them except in the rare time where things go radically wrong

-- Rupert Fawdry

Re: Ranking Hospitals on Preventable Deaths

I was moved by the final sentence of this article to leave a reply. In an era where National Government, DoH and the NHS advocate transparency and patient safety, I would agree with this statement. One must always consider the effect when a new outcome measure is introduced. However good the intentions might be to measure measurable deaths, is it really going to change practice? Or will something else change? Having a learning tool built within the process acts as a feedback, which closes the loop and will inevitably increase patient safety.

-- Max Feltham

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Events

29 Oct 2015, 12:00-16:00

Challenges of Evaluation in Health Practice

126 Mount Pleasant, University of Liverpool

The UK Evaluation Society is sponsoring a series of events to mark the International Year of Evaluation and the University of Liverpool is hosting a series of four seminars. This seminar will address the current state of evaluation in health practice and the challenges facing evaluators. More information and booking (£35) is <u>available online</u>.

24-25 Feb 2016

2nd Behaviour Change Conference: Digital Health and Wellbeing

Senate House, London

Registration is now open for the UCL Centre for Behaviour Change's second behaviour change conference on 'digital health and wellbeing'. World-renowned academic experts will join key members of the public health and technology sectors in a wide variety of activities. Conference themes will include:

- using behaviour change theory to create high-quality interventions and products;
- multi-disciplinary approaches to digital health and wellbeing;
- developments in wearable and sensor technology;
- creating developer/industry partnerships.

Deadline for submitting abstracts has been extended to Friday 30 October, 2015.

For more information, please <u>click here</u>.

22-23 Mar 2016

Applied Epidemiology Scientific Conference

Ramphal Building, University of Warwick

Public Health England have recently opened registration for their annual conference, which will be a mix of plenary sessions, posters and parallel sessions. The purpose of the conference is to support high quality and innovative science through sharing good practice.

Abstract submissions for oral or poster presentations can now be made <u>online</u> until the deadline on Friday 11 December. More details are available on the <u>conference</u> <u>website</u>.

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Publications

Burton C, Cottrell E, Edwards J. <u>Addison's disease: identification and management in primary care</u>. *Br J Gen Pract*. 2015; **65**: 488-90.

Daley AJ, Jolly K, Jebb SA, et al. <u>Feasibility and acceptability of regular weighing</u>, setting weight gain limits, and providing feedback by community midwives to prevent excess weight gain during pregnancy: randomised controlled trial and qualitative study. *BMC Obes.* 2015; **2**: 35.

Morden A, Jinks C, Ong BN. Temporally divergent significant meanings.

biographical disruption and self-management for chronic joint pain. *Health*. 2015. [ePub].

Penn ML, Kennedy AP, Vassilev II, et al. <u>Modelling self-management pathways for</u> people with diabetes in primary care. *BMC Fam Pract*. 2015; **16**: 112.

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Recent Tweets

<u>#NIHR</u> researchers blog about their experiences, challenges and successes within <u>#mentalhealth</u>: <u>http://ow.ly/TCUzi_#NIHRchat</u>
-- NIHR Research, 21 Oct 2015

Keele collaboration with <u>@NIHRCRN</u> shortlisted for clinical research impact award <u>[online]</u> #HSJAwards

-- Keele University, 6 Oct 2015

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