WORKER ADVOCATES IN THE HEALTH SCIENCES: WHERE ARE YOU NOW THAT WE NEED YOU? 1

NEIL WHITE MEMORIAL LECTURE – 8 NOVEMBER 2005 – CAPE TOWN

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It is indeed an honour to be asked to deliver the Neil White Memorial Lecture, and I thank you. It would be much easier to deliver this lecture ten years on than it is to deliver it today. In the shadow of a tragedy objectivity is notoriously elusive. If you find that this address reveals some degree of thought block, or uncertainty, I ask your indulgence. My primary objective is to send you away with a song in your heart. If at the end of my address you have not heard a word, I shall not mind. You will have been thinking your own thoughts – much more important than mine. I will play the continuo on a rickety old harpsichord, while you listen to the violin in your head.

Introduction

Once before I used a lengthy quotation, from the encyclical of Pope Leo XIII, Rerum Novarum, to define a problem which needs to be addressed as a matter of urgency. To do so again is not mere repetition but to make the point that it describes the situation in South Africa today as graphically, and as accurately, as it identified the situation in Europe in 1891, or for that matter in 1981 in South Africa. In a situation like this Neil White began his professional career. It is unlikely that the situation will change very quickly, and occupational health practitioners who aspire to be worker advocates may learn a lot by getting to know Neil through his writings.

‘That the spirit of revolutionary change, which has long been disturbing the nations of the world, should have passed beyond the sphere of politics and made its influence felt in the cognate [related] sphere of practical economics is not surprising. The elements of the conflict now raging are unmistakable, in the vast expansion of industrial pursuits and the marvellous discoveries of science; in the changed relations between masters and workmen; in the enormous fortunes of some few individuals, and the utter poverty of the masses; in the increased self-reliance and closer mutual combination of the working classes; as also, finally in the prevailing moral degeneracy.’ 2

The Pontiff speaks to the city and the world, and we should try to describe the work of the man we remember in terms of his role in this great university (the city) and in the world (South Africa – or perhaps more accurately Southern Africa). Apart from attempting to put his work into context, we should try to make up our minds what the man, as distinct from his work, has meant to us. Speaking personally, I have been pre-occupied for several weeks with teasing out what Neil White taught me through his life and his writings. His achievements will continue to be an example for new generations of occupational health practitioners to follow. I already have enough material for a sequel to this essay, entitled Neil White and the Magic Bridge. The bridge leads from the School of Public Health to the Division of Occupational Medicine.
**Lived to the full?**

Neil was born in Edinburgh on 15th May 1954. He was very much his parents' son. Mr. J.A.M. (Alan) White was the senior surgeon at Mpilo Hospital when I was a new boy in Bulawayo in 1959 – a bold and competent surgeon, learned and interested in many things, from gardening to geography. He used to recite the list of tributaries of the [Shashi] River, with emphasis added by way of a broadened Scottish burr, and insisted that the best way to produce a green lawn was to go out during a storm and scatter fertilizer in the rain. New boys and their wives remember Giena, Neil’s mother, as a kind and considerate lady – a teacher who didn’t behave like one. The reason we knew the family was that senior officers in the medical service were welcoming and protective of their younger colleagues.

Neil was schooled at Coghlan in Bulawayo and St. George's College in Harare, and qualified in medicine at the University of Cape Town in 1978. His *curriculum vitae* is a record of tremendous achievement. You may read it for yourself – perhaps a useful exercise for aspiring doctors. It certainly shows that Neil lived life to the full.

**Occupational lung disease in cotton mills**

The foundation of Neil’s academic career is his MD thesis. I first read it about 20 years ago. I have referred to it several times since, and in preparation for this occasion I have read it again. It is an absorbing work – there was a distinct possibility that I would speak here today with it tucked under my arm. Folded inside the cover are notes by Anna Trapido, the author of another important thesis, with my scribbles to her: ‘This is an important thesis – it’s a first like yours’. What did this thesis teach me?

The dedication defines the support group which enables an individual to devote her/himself wholeheartedly to a cause. This group is usually parents, spouse and children – and so it is here. The acknowledgements list a cohort of shop-stewards and officials of the National Union of Textile Workers who worked with Neil, academics in the Faculty of Medicine and medical colleagues who helped him and the lawyers and other activists who gave advice and support. The thread which ties this cohort together originated at the conference on the Economics of Health Care at Cape Town in 1978, and therefore directly from the South African Labour and Development Unit at the University of Cape Town which organized the conference. Many of the names included among the acknowledgements must have been at that conference, and gained a great deal of confidence from the galaxy of bright young – and politically liberal - talent on display. The paper read by Michael Savage captures the spirit of that conference well. It was entitled *The Political Economy of Health in South Africa*. The first lesson implicit in this thesis is that things which are impossible for an individual are possible for a group. Social unity is as important in science as it is in society. Worker advocates in whatever field should see themselves as a mutual support group. This study could not have been done by the union without Neil, nor by Neil without the union.

When the work began (about 1982) approximately 40 000 workers were employed in spinning and weaving mills, and at risk of developing byssinosis. The textile industry as a whole employed 120 000 workers – there are now less than 15 000 and 130 000 respectively. A literature search identified more than 200 papers on byssinosis. Only one of these was from South Africa – which made only passing mention of the disease. The Erasmus Commission (1979) had conceded that ‘Byssinosis, which is caused by cotton fibres, does sometimes
occur here’. No previous investigations had been carried out, and no dust measurements had ever been made. This study was truly a first, surveying more than 2,000 workers in six mills – a huge undertaking, expertly performed and producing a quite definite result, despite the fact that only 6.2% of the workers had more than twenty years service. It remains (I think) the only comprehensive South African study of cotton mills.

Among men the prevalence of byssinosis symptoms and symptoms of bronchitis were significantly correlated with dust levels in the various departments. Specific tasks showed prevalences of byssinosis symptoms ranging from 4.2% among supervisors to 43.7% among workers in bale opening and in the blow room. Interestingly a highly significant association was demonstrated between byssinosis and bronchitis symptoms.

Byssinosis is not a straightforward condition – the variation between individuals in the disease itself, in their atopic status, a history of asthma, the influence of smoking and previous tuberculosis leads to a complex analysis. This is carried out with relentless thoroughness and in this there is another lesson. It is no service to the workers to do a less than exhaustive study.

A major weakness of the majority of occupational epidemiology studies is the absence of environmental measurements. Did Neil measure the dust levels in South African textile mills? Yes, he did – thereby adding enormously to the power of the conclusions and recommendations. Dust levels were up to 20 times the permitted exposure level (P.E.L. set by W.H.O.) in the blow rooms of three mills, and nearly nine times the P.E.L. in the waste press area of one mill. The levels were not very different from those found in cotton mills in the U.S.A. where byssinosis had been well described.

It is important to note that a major part of the thesis is devoted to testing the validity of the reference values used in lung function testing and the assessment of byssinotics for purposes of workmens’ compensation. In this connection I am sure Neil would have repeated his acknowledgement of a very special group. ‘The Industrial Health Research Group, Department of Sociology, U.C.T., gave me advice, encouragement and the loan of a spirometer from the early stages of the investigation. Ms J. Cornell personally assisted with the pilot investigation and Dr J. Myers debated the question of predicted values for lung function with me’.

Testing the Authorities

In occupational health practice professional expertise is frequently tested in court. It was to be expected that the results of the study would be used to assist disabled workers. So before long (in the late 1980s) a tribunal was set up by the Workmens’ Compensation Commissioner to hear appeals on behalf of a number of workers with byssinosis who had been denied compensation. Led by Halton Cheadle – legal advisor for Neil’s original study – the court was addressed on the distinction between the lung substance and the airways (by me) and then on the effects of cotton dust exposure and the inconsistency of the Commissioner’s decisions (by Neil). The court then proceeded to consider the condition of the workers who were appealing against the decision of the Commissioner. During the afternoon of the first day one of the stony-faced assessors commented that the appealing workers would be much fitter if they played squash or trained (like Bruce Fordyce) after work! Sometime later another (who obviously thought that byssinosis was of no consequence) suggested that the court should
watch a worker doing the lung function tests. This was duly arranged and a very stern medically qualified assessor ordered the gentleman to perform the forced expiratory manoeuvre. He did and this started a paroxysm of coughing which almost led to syncope. Margot Becklake, a close colleague of Neil’s, taught us at the National Centre for Occupational Health that the most disabled subjects were often those who could not perform repeatable lung function tests. The court adjourned and next morning decided that that particular appeal should be allowed, and that the others should undergo administrative review in the light of the evidence submitted.

When challenged, co-operate to the full, select a worker with undoubted disease and serendipity will do the rest. Neil and Halton Cheadle later wrote: ‘Medical surveillance of cotton textile workers is a futile exercise if its effect is only to document a progressive decline in function’ 9.

I had already learnt during my time in the City Health Department in Harare that very often big industry or statutory authorities, despite their bluster, have no real defence. This was shown again in the Thor Chemicals and the Cape plc cases – in the case of Thor Chemicals in both the South African and the British courts. Health practitioners representing the interests of workers should be much more assertive and confident.

The Leon Commission

In a prepared submission by the Chamber of Mines to the (Leon) Commission of Inquiry into Health and Safety in the Mining Industry 10, ‘comment on health in the mining industry is restricted to two and a half pages. It is difficult to understand why no meaningful attempt was made to provide the Commission with comprehensive information about the trends in the incidence of diseases of importance’. The National Union of Mineworkers (NUM), in contrast, provided detailed submissions describing the historical and current health (and safety) situation. The evidence was gathered and presented by a series of experts. Neil White was one of these experts. The others who appeared in person were Francis Wilson, Jean Leger and May Hermanus. Real life experience was described effectively by Senzeni Zokwana, at the time the Deputy President of the NUM. They were examined and cross-examined at length after they had delivered their prepared evidence. Oral evidence or written statements were submitted by many other organizations and individuals, hardly any of which matched the impact of the experts gathered by the NUM. A few paragraphs from the report of the Commission illustrate the effectiveness of the evidence:

‘The detailed evidence submitted to the Commission, in writing and orally, approaches the problem in a systematic manner. No evidence was submitted to suggest that occupational diseases had been adequately controlled by the industry as a result of the existing regulatory system. The written submissions of Drs. White and Leger, supplemented by those of the Work Place Information Group and the Industrial Health Research Group, enabled the Commission to appreciate the nature and scope of the health problems in the industry.

‘Dr White, a specialist in the field of lung disease, in a submission running to more than 120 pages, citing 134 references to mainly South African scientific studies, demonstrated that dose-response relationships have been established in South Africa and elsewhere for exposure to quartz and subsequent silicosis, for exposure to asbestos fibre and subsequent non-malignant and malignant asbestos-related diseases, for length of mining experience or
quartz exposure and pulmonary tuberculosis, and for exposure to mine air and chronic obstructive pulmonary disease.

‘In determining the trends in incidence there are, it is agreed by White, Leger and others, formidable difficulties in establishing reliable numerators and denominators, ... and in piecing together fragments of information held by the various agencies involved ....’.

Solutions to the problem (Neil concluded – eloquently and comprehensively) depend on ‘the replacement of the pre-1993 system of medical intervention with one that is equitable and not racially discriminatory, effective in both the prevention and early detection of work-related diseases, accessible and affordable, participatory and non-coercive, and in addition to adequate compensation, also offers retraining or alternative placement options to miners with work-related diseases’. We are still trying to solve this problem.

‘Evidence put before the Commission by Dr. White and Dr. Leger [shows] that although the time between first exposure and the diagnosis of pneumoconiosis has increased for white miners, this is not true for black miners. This is consistent with the hypothesis that white miners in a largely supervisory position are less exposed to dust whereas black miners in the stopes are as heavily exposed as they were several decades ago. Elsewhere evidence will be cited to suggest that dust levels have not changed for decades’.

‘Evidence cited by Dr. White from work done by him in the early 1980s indicates that the death rates among South African miners from all causes or from disease had not changed substantially between 1940 and 1980, despite the dramatic fall in both rates between 1920 and 1940’.

Worker advocates must be expert, hardworking and courageous. The impact of the systematic evidence presented to the Leon Commission was enhanced by the ability of the presenters to avoid rhetoric, present the facts, make complex issues understandable and meet critical questions head on in a situation which might have been dominated by the management of a big industry. Judges are experts in assessing the quality of the evidence presented to them, and the frequent references in the Leon Commission report to the quality and relevance of that evidence is praise indeed.

*The Safety in Mines Research Advisory Committee and the Technical Committee on Occupational Disease*

The Leon Commission had stated that ‘It appears that insufficient funds are made available to sustain credible research into occupational health problems associated with mining’. Neil addressed the challenge of SIMRAC with his customary energy and skill – though the work entailed was considerable and the travel to and fro to the meetings in Johannesburg must have been very tiring – and he continued to press for the reform of the compensation systems through his participation in the technical committee. The comments here are those of three individuals who worked closely with Neil when the serious business of incorporating occupational diseases into the research programme of the mining industry began or who worked with him in the committee. They afford a few of those living a thousand miles north of Cape Town to talk through their grief.
David Rees says: I was reminded how much I miss Neil, professionally and socially, when I attended the 2005 Combined Congress of the Critical Care Society of Southern Africa and the South African Thoracic Society. We usually spent quite a bit of time together at these conferences and it was often the most enjoyable and stimulating part of the meeting. This year the conference organizers introduced the Neil White Symposium. While Umesh Laloo was talking about the reason for the symposium an image of Neil in the Technical Committee for Occupational Diseases came into my mind. During a particularly aimless discussion Neil said he wanted to say something. With a great deal of passion he reminded us of the inherent unfairness of the current compensation system and how seriously workers were disadvantaged by it. I was taken aback at Neil’s intensity – his voice shook – and reminded that he really did care a lot, and for a very long time. It’s an image that reminds me of why we are in occupational health.

Mary Ross says: I really miss having Neil’s infectious laugh and wisdom at the end of the phone or e-mail. He was a true advocate for occupational health and a stalwart in the fight for justice for the workers. I probably knew him much longer than most of our colleagues, although not as well. I share a birth date with his older sister, Lindy, and she and I were fellow ‘party animals’ in our junior school days in Bulawayo. One of the highlights of my youth was going to parties at the Whites’ house. Of course Neil, being half our age at the time, was an almost inconsequential little brother. Although Neil and I had often crossed paths in his long and influential campaign for justice in occupational health, it was only when I started working for SIMRAC six years ago that I really got to know him well. I remember a heated discussion at one of my first SIMHEALTH meetings when I realized again how knowledgeable yet artful he was – getting far more from being an informed advocate than as an adversary. He was always enthusiastic and receptive to constructive suggestions and we shared the development of the SIMRAC x-ray reading training programme right to the time of his death. Even when he was terminally ill, it was a priority for him to establish a succession plan for this offspring – a training course which may make a contribution to workers’ health, here and elsewhere. And with all this success he was so modes – The last time I saw him was to deliver the Mine Medical Officers’ Association certificate of service. The delighted surprise at this small recognition of his life’s work is my lasting image of an exceptional colleague.

Jill Murray says: I remember Neil for his scientific integrity, his social advocacy and his wicked sense of humour. In the academic field his ability to grasp the essence of a problem, and to construct a clear and concise approach to its solution came to my rescue more than once.

There I sat, attempting an analysis of some 400 cases of tuberculosis, from around a dozen medical centres which had generated about a million bits of data – or so it seemed. ‘Neil – I am desperate, despairing, despondent and drowning in a sea of paper – please help’.
‘Well let us see – what is the question? No, no – what is the big question? Yes, yes – well let us put this pile of data there, cross-tabulate there, look at this association (leave that one until last)’. Within what seemed like minutes the mess of information was sorted into manageable piles, the approach to analysis had been structured, and the relevance of my study to the larger body of scientific knowledge clarified. It was time to go and enjoy a beer together!

A village in Botswana

The South African mining industry has drawn migrant labour from all the countries south of a line along the northern and/or western borders of Angola, Zambia and Tanzania, and even, in
the first decade of the 20th century, from China. Given the dominant role of migration in the
supply of labour to the mines for nearly a hundred years, it was surprising to find that in the
early 1980s nothing was known about the prevalence of occupational lung disease in the
labour-sending areas, or about the quality of life of those permanently disabled by industrial
accidents. Studies by Arkles 11, describing the quality of life of permanently disabled miners in
Lesotho, and by Felix 12, on the health effects of exposure to asbestos dust on a community
living close to asbestos mines in Sekhukhuneland, began to define the situation. In the 1990s
two community-based studies provided concordant evidence that pneumoconiosis and
tuberculosis, or both together, were prevalent among migrant miners who had returned to
their rural homes in Botswana or in the Eastern Cape. The Botswana group 13, working in
Thamaga, concluded the introduction by saying:
‘In view of the limited information available on a subject with substantial economic, political,
and social implications, the present study was conducted to evaluate the health experiences
of former miners and to estimate the magnitude of the problem of previously unidentified
occupational disease in a semi-rural community with many former miners’.

The results showed that at an average age of 56.7 years 26.6% - 31.0% had radiological
changes consistent with pneumoconiosis (ILO profusion <1/0); 6.8% had progressive massive
fibrosis; 26.6% had a history of tuberculosis; and 23.3% had experienced a disabling
occupational injury.

The comparable figures from the Libode study 14 (in the Eastern Cape) were: mean age 52.8
years; radiological evidence of pneumoconiosis 22% - 36%; radiological evidence of
tuberculosis 33% - 47%; history of previous tuberculosis 51%.

These two studies are arguably the most significant in terms of their ‘economic, political and
social implications’ since Sleggs, Marchand and Wagner 15 described the association
between malignant mesothelioma and crocidolite (blue asbestos). They teach explicitly that
the migrant labour system is much more damaging than we ever thought. Similar situations
exist in the Northern Cape and Limpopo Provinces as a result of asbestos dust exposure. Neil
himself said of the Thamaga study (in his curriculum vitae) that ‘[T]his paper is remarkable for
three reasons, the first that the study was done at all – it was based on a network established
at an [International Union Against Tuberculosis and Lung Disease] conference in Maputo and
had a very low budget; second that it does not seem to have been done before – there had
been no follow up studies of occupational lung disease in black former miners in South
Africa’s mines for at least 50 years; and third the study is remarkable for the high prevalence
of radiological pneumoconiosis encountered. The interest that the study aroused has led to a
number of further studies which I have been party to, has involved me in published
 correspondence and was part of my decision to make a submission on a related topic to the
health sector of the Truth and Reconciliation Commission in 1997’. The published
correspondence to which he referred is an object lesson for would-be worker advocates. It is
typical - the establishment which has not done studies of the fate of former miners is
criticizing epidemiological studies reported by those who have done the work. It demonstrates
only too clearly the folly of reiterating the conventional (received) wisdom, instead of
presenting an argument based on one’s own work.

Unfinished business
One of the hazards of worker advocacy is that, when they produce results of research studies which contradict the conventional wisdom, or show that a problem exists, worker advocates are jumped on. We can assume that Neil’s success as a clinical pulmonologist, an academic, an epidemiologist, an advisor to the trade union movement, a presenter at many local and international conferences and as a worker advocate were due to his fine head and strong heart, and to his two broad shoulders. There are two passages in his curriculum vitae which I will quote in full in order to suggest that as part of the memorial to Neil both should be brought to completion and widely discussed.

1. A prospective cohort study of South Africa former underground gold miners. In association with Dr G Churchyard of Aurum Health Research, other members of the UCT OEHRU and a number of international collaborators notably from the University of West Virginia. The objective of the study is to evaluate the burden of occupational lung disease in a cohort of about 700 Lesotho men retiring from the gold mining industry. Funded by Aurum Health Research through a grant from Anglogold Plc. Data collection completed. Analysis of data had to be sub-contracted to University of Pretoria Public Health Department, resulting in some delays. Output: internal report and research publications.

2. In conjunction with the Legal Resources Centre a process has been initiated to test the constitutionality of the Occupational Diseases in Mines and Works Act.

What do we mean when we talk of worker advocates?

By now I am sure you feel I am labouring the point. Would it not have been better to begin by saying that Neil White was the worker advocate par excellence – skilled, tough and energetic – and leave it at that? I think not. Advocacy tends to be interpreted in various ways, and is often taken as akin to political lobbying or special pleading. Worker advocacy in occupational health is a specific process which follows the recognition of a risk to the health of men and women in the workplace, or the identification of health effects consequent on the failure to identify damaging exposures at work. The information which sets in train the definition of adverse health effects commonly originates from the workers themselves, and is based on their tacit knowledge or pit sense. It may not be couched in scientific terms, and when articulated in a second language, may lead the unwary to jump to the conclusion that the workers are drunk, drugged, work-shy or malingering. Those who have listened, eyeball to eyeball, to workers’ and shop stewards’ descriptions of Thor Chemicals, dusty conditions in mines and foundries, the difficulties encountered in dealing with the compensation systems and the attitude gap between management and the workers are not in doubt that what is being said is, in the main, valid. Careful attention and a little thought work wonders. The next step is to design a study to identify and quantify the exposure and the health effect as quickly as possible and to carry through the process to remedying the workplace conditions, obtaining statutory entitlements for the affected workers and imposing appropriate penalties on negligent employers.

Worker advocates in the health sciences, and in many other fields, have an important service to offer management, believe it or not. They are likely to respond to disquiet on the shop-floor or in the stopes by saying: Let’s arrange to examine some workers; measure the dust levels; read the regulations; etc. This sets in train a movement away from protest marches and the trashing of city streets – both of which are becoming part of our everyday life in 2005.
Do we really need worker advocates?

South Africa’s macro-economic policy has shown that, in practice, we cannot compete in the global market, with developing countries our own size, for example South Korea with better wages and a far higher literacy rate, or with much larger countries, for example China, which, ostensibly, pay far lower wages than we do. The outcome for South Africa has been job losses on an unacceptable scale, paralleled by widespread ‘casualisation’. The major new problems will be the damage to health due to unemployment, and the immense difficulty in characterizing and proving occupational exposure in casual workers exposed to who knows what in the course of who knows how many brief periods of employment. Though the role of health professionals as worker advocates may change radically, there will be an urgent need for worker advocates in many fields in which worker advocacy may be a neglected role. Apart from the legal profession and the social sciences where worker advocacy is well established, we now need worker advocates in politics, public administration, economics and business management. Ari Sitas recently reviewed a book published by the Sociology of Work Unit at Wits entitled Beyond the Apartheid Workplace\textsuperscript{16}. It is not encouraging reading and Ari Sitas asked tellingly ‘Is this the sort of country we want to create?’ Having shelved the Reconstruction and Development Plan we are now taking it off the shelf a page at a time – and this is not fast enough. We continue to deliberate inconclusively about the reform of the compensation systems.

Where are the worker advocates?

They are where they always were – in our universities as bright young undergraduate or postgraduate students – and not only in the health sciences. Wherever they are – and no matter what they are studying – we should cherish them. Many of the medical academics at London University, and perhaps some at this university today, will remember the argument about what to do with those able graduates who want to go to a medical mission – in Africa? where else? - for a few years and then come back and specialize. It was a divisive and inconclusive discussion, and I think (by default) the conclusion was ‘Stick close to your desks and never go to sea ….’.

Neil White went to sea in a cockle shell in the rough waters of a dusty industry, accompanied by the cadres of the adolescent National Union of Textile Workers, overcame initial management hostility, and did a first class study. He came back to UCT and did his time as a registrar. Ten years after qualifying he was a specialist physician, and in the next 16 years gained, and deserved, an international reputation.

There are two famous Scotsmen who chose to live and work in South Wales. The first was Kier Hardie, effectively the pioneer of working-class socialism in Britain. The second was A.L. (Archie) Cochrane. When I met him he greeted me thus: ‘Man is a political animal and you are a Rhodesian – talk’. Archie Cochrane would have loved Neil and carried him off to lunch at Rhoose Farm without a moment’s hesitation. The reason why will be obvious when you read Archie’s autobiography One Man’s Medicine\textsuperscript{17}.

End
Addressing a graduation ceremony at Berkley, John Kenneth Galbraith entered what he called *Two Pleas for Our Time* \(^\text{18}\). The pleas were for disarmament and an end to the war on the poor. ‘Capitalism [Galbraith said] did not survive in the United States or in the other industrialized countries because of a rigid adherence to individualist precept ..... It survived because of a continuing and generally successful effort to soften its harsh edges – to minimize the suffering and discontent of those who fail in the face of competition, economic power, ethnic disadvantage or moral, mental or physical incapacity’.

This captures the role of worker advocates and social reformers neatly.

Speaking at this university forty years ago Archbishop Denis Hurley said: ‘Only crusaders succeed in the field of social reform. It takes drive and dynamism to alter a social pattern’ \(^\text{19}\). Surely Neil was exactly the man envisaged.

And so to the song: Four beats in a bar – Hi ho, hi ho, it’s off to work we go - There is a job to be done out there.

REFERENCES:

1. The title is chosen to suggest a relationship between worker advocacy and a much broader view of the health sciences than is usual. Leon Eisenberg captures the wider view admirably in two essays:
   Rudolf Ludwig Karl Virchow, where are you now that we need you? Am J Med. 1984; 77:524-32.