

AUDIO INTERVIEW TRANSCRIPT

## Derrett, Christopher: transcript of an audio interview (22-Mar-2016)

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**Date of publication:** 25-Oct-2016

**Date and place of interview:** 22-Mar-2016; Queen Mary University of London

**Publisher:** Queen Mary University of London

**Collection:** History of Modern Biomedicine Interviews (Digital Collection)

**Reference:** e2016110

**Number of pages:** 22

**DOI:** 10.17636/01016054

**Acknowledgments:** The technical support of Mr Alan Yabsley is gratefully acknowledged. The History of Modern Biomedicine Research Group is funded by the Wellcome Trust, which is a registered charity (no. 210183). The current interview has been funded by the Wellcome Trust Strategic Award entitled “Makers of modern biomedicine: testimonies and legacy” (2012-2017; awarded to Professor Tilli Tansey).

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**Citation:** Tansey E M (intvr); Tansey E M, Wilkinson A (eds) (2016) *Derrett, Christopher: transcript of an audio interview (22-Mar-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2016110. London: Queen Mary University of London.

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**Note:** Audio interviews are conducted following standard oral history methodology, and have received ethical approval (reference QMREC 0642). Related material has been deposited in the Wellcome Library.

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## Derrett, Christopher: transcript of an audio interview (22-Mar-2016)\*

**Biography:** Dr Christopher Derrett MBBS MPhil (b. 1947) is a former general practitioner (GP). He graduated in applied physics from Durham University in 1968, and his first permanent job was as a member of the non-clinical scientific staff at the Medical Research Council (MRC) Air Pollution Research Unit. During his time at the Unit he helped develop instrumentation for the measurement and processing of respiratory signals and for the measurement of sulphur dioxide. After his MPhil, for a Thesis entitled '*Respiratory function: some aspects of its measurement, analysis and interpretation*' in 1977, he enrolled as an undergraduate medical student at the Royal Free School of Medicine. He qualified in medicine (MBBS) in 1982, and went on to GP vocational training in East London. In 1986, he became a GP partner in Newham, and later in Hackney. During his GP career, he has been a GP Trainer, an Appraisal Lead, a Senior Clinical Lecturer at Bart's and the London School of Medicine, and also Head of GP Development for City and Hackney Primary Care Trust. Since retiring from clinical practice, he continues to teach medical students and practice support staff. He also conducts educational work with refugee doctors and GPs in Romania, and is a student of medical history.

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**TT:** Tilli Tansey

CD: Christopher Derrett

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**TT:** Chris could you just start by saying a little bit about your background, when and where you were born, where you grew up.

CD: Yes, I was born in Newcastle upon Tyne, and my father was a Church of England school chaplain at the time, so I lived in Durham City when I was a small baby. My mum was a doctor, worked part-time. And the job that father had caused him to move around quite a bit so we moved from Durham to Cumbria, Whitehaven in Cumbria, and then we moved to a colliery village in County Durham called Boldon Colliery near Jarrow, we were there for four years. And then we moved down to London to East Ham, which was a big job for my father, and I went to school, secondary school, at East Ham Grammar School, which was one of the old style county borough grammar schools. East Ham was one of the few county boroughs in London and it had its own education committee and it was quite a good grammar school for the area. And then when I was in the Sixth Form I dropped out and became a bit of a delinquent and didn't do very well in what was then Advanced Level GCE, and only just managed to get into university. And I went into Durham to read for a general degree because in those days you could just go up and read for a general degree. And then after the first year I converted to honours in applied physics, and qualified in 1968 in applied physics from Durham University.

**TT:** Can we go back and ask a little bit about your schooling and when you became interested in science. You mother was a doctor, you said.

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\* Interview conducted by Professor Tilli Tansey, for the History of Modern Biomedicine Research Group, 22 March 2016, in the School of History, Queen Mary University of London. Transcribed by Mrs Debra Gee, and edited by Professor Tilli Tansey and Mr Adam Wilkinson.

CD: My mother was a doctor, but a rather reluctant doctor. She'd been pushed into it by her mother, and so I wasn't exactly encouraged to consider that as a career although she was interested in getting us thinking about biological things. I remember she had a microscope, she kept her microscope from her medical student days, and she had a whole box of slides which she made herself. In those days medical students made their own histology slides and we had a lot of fun looking at those, and she was quite interested in botany. So there was quite a lot of interest in those subjects, but not in a way that it might be a way of earning a living really. And then at school I don't think I had terribly good teaching but I had a very keen, rather nerdy, physics master. Thinking about it now he probably had Asperger's, I suspect, but I thought he was great and he was very, very obsessional about organising the course and I became interested in the way education was organised then because it was the only bit of my education at school which looked like it had been properly thought through from beginning to end as a proper course. Most of the teachers were terribly *ad hoc*, and I got the feeling that they thought what they were going to do as they walked in the door of the classroom. And there was very little homework actually, it was remarkable how little work we had to do and how we got away with blue murder.

Anyhow this physics master got me involved in the school play and I did the sound effects for the school play and he had all this gear, electronic gear, which got me very interested in electronics. And from that moment I was doomed really, because I just got interested in making radios and taking things apart, mainly taking things apart rather than making things. And my schoolwork just went downhill from that point on and I became involved with a group of, what my parents would regard as, very undesirable friends. So it was all a bit disastrous at that time and I was really lucky to get into university, I think. With the benefit of hindsight it was remarkable and wouldn't happen now, I wouldn't have got it, and I would have probably not have been in the position I am now if that hadn't happened. I think it's also important to say that, at that time, universities were really being funded in a big way. I think it was just after the Robbin's Report and there was money sloshing around all over the place for universities. Everybody was building like crazy and when I went to university I remember thinking, 'Crikey, these labs, there's just 15 of us in this wonderful electronics lab with microwave equipment, stuff for making transistors.' It was really cutting edge stuff and it just did seem as though there was no expense spared.

Very, very different from what one sees now.

**TT: Just for the record were you an only child?**

CD: I had a brother, who was considerably brighter than me and he was younger. So I was probably a bit of a disappointment, I think, to my parents.

**TT: Did you ever get any sense of that at the time, that they were disappointed with you? Is this just a retrospective thing that you think?**

CD: No, no, I think Nigel was definitely the 'young master' and he was extremely bright, went to Oxford and did maths there and did very well. But he didn't, really drop off the academic ladder in the way that I think I did.

**TT: But you found your way back onto the ladder, and so you went to Durham to do a general degree and you translated that into...**

CD: I translated that into applied physics and I got a 2:1 at the end of it all.

**TT: You redeemed yourself.**

CD: I felt I'd redeemed myself and I was very pleased at that point. I was quite confident I think when I went looking for work. And I remember there was loads of work around, there was never any question I wouldn't get a job.

**TT: This was when?**

CD: This was 1968 and I remember being offered a job as a physics master at a Grammar School in Sussex. Good school, and again without any teaching qualification whatsoever. And then I went along to the Air Pollution Unit and was interviewed there and I'd been interested when I was at university; I was very interested in the application of physics. I've never been terribly interested in the theories, it's the application of things that interests me. And there were two things I could have done really. Most of the people, most of the working in the Department, was defence-related, and in my vacations I did a couple of jobs. I did one at Plessey Components. They had some research labs up in Ilford and I had a lovely, lovely six weeks there playing around with things on the roof for detecting aircraft coming in. And I remember having some whirling microphone on a turntable. It whirled around and by looking at the phase of the incoming sound you could work out which angle it was coming in from. And that was interesting, but, again, I didn't think I really wanted to go into the defence industry. And then the other job I had was with a potentiometer manufacturer, Colvern, who made huge potentiometers for controlling guns on ships, these gigantic things. And that was again very interesting, because they had all sorts of machinery for setting up these things so that every degree of turn on the knob on the top was reflected in an equal amount of change in the resistance of the potentiometer underneath. And that was where I got interested in measuring equipment and that thing.

So the lab in Durham, most of the research money, although I don't think I knew it really at the time, was stuff around research in semiconductors and they were working on some interesting stuff, microwave stuff, and radios for the military and also I think they were involved in developing some of the early things for seeing people in the dark, image enhancing, using cadmium sulphide. They were very much into cadmium sulphide detectors. So it was really a case of going into that burgeoning defence industry or doing something different. I thought I would like to do something in medicine.

**TT: So you were thinking of particularly medicine or something in medicine? You were actively looking for job adverts, you saw a job advert for the Air Pollution Unit?**

CD: Yes, I looked at medical physics generally, and I think I went and looked at something at Bart's as well, in the hospital in Bart's Medical Physics Department. So I was kind of showing an interest in things medical although not very well thought out, I don't think, because I remember my viva. In those days you used to have a viva at the end of your degree and usually the viva was rather symbolic, it wasn't actually any use unless you were on the borderline between two grades. And I got the strong impression that I wasn't on the borderline because he was asking rather unstructured questions and [laughs] I remember something happened and he saw an ashtray on the desk of the Professor. This ashtray was shaped like a skull and he said, 'If you were examining that electronically or in fact as a physicist how would you examine that?' And I think he wanted me to talk about all the possible ways you could actually apply sensors to the head, but when I think about it my answers were pathetic really. I was fumbling really and it was the thing that really I should have been prepared for. And it's amazing I got a job in that field really [laughs].

**TT: So you saw the advert for the Air Pollution Unit and you applied, you went to interview?**

CD: Yes. In those days the MRC had lots and lots of Units all based around individual directors. And this was a Unit which at that time was based in Charterhouse Square in Bart's Medical College, in St. Bartholomew's Hospital Medical College, on the top floor, and it had recently moved there from other buildings and it was called, at that time it was called the "MRC Air Pollution Research Unit". And it was very well-funded, extremely well-funded. There was a chap called Sir Harold Himsworth, who was the Secretary of the MRC at that time and he seemed to have good influence and be able to get quite a lot of money from Government. And it was also the time of, I think it was just after the Wilson Government, I'm not exactly sure whether Harold Wilson was in then, but it was a time of the 'white heat of technology', Jennie Lee, the Open University, all that stuff was going on. And people felt very positive about research generally, particularly medical research. And Himsworth I think thought that the structure of DNA was going to yield all sorts of spin off and he, I think, was instrumental in setting up the Unit for Molecular Biology in Cambridge as a

result of the Crick and Watson work. So there was very much a feeling that any minute now there's going to be a breakthrough. And I think he managed to convince Government to give him a lot of dosh.

Anyhow, I was employed as what was called a member of the scientific staff of the MRC, which sounded very grand and it was quite grand really because there was definitely a throwback to the old officer and other ranks class in the MRC. It was almost a model of the military, so there were people who were scientific staff, who were graduates and generally had I think 2:1 or above, you could go in without a PhD in those days. And then there were the other people who were mainly not graduates and were often people who previously had service in the Forces and learned a lot of their skills from the military. So people who could make all sorts of amazing things, people with incredible manual skills. And we had a couple of those people in the Unit. We also had a couple of people who had been spat out by the military, who were a little bit too difficult for the military to handle, but were very brilliant and had been working in military kind of microbiological type of things, in Porton Down and that sort of thing.

**TT:** I'd like to come back to talk about the Air Pollution Unit in more detail, so can I jump ahead now to, and you've been there for nine years?

CD: I was there for nine years, yes.

**TT:** So you've seen a lot of changes and we'll come back and talk about the changes. What happened towards the end of your time there, had you by that time decided you really wanted to develop your career in medicine? Were you looking at a lot of different options?

CD: I think I realised I was a failure in research really. I wasn't going to knock any coconuts off the tree. I wasn't actually sure there were any coconuts to knock off the tree and a lot of other people thought that and indeed it was probably as a result of that that the unit was closed pretty soon after I left. So I was very lucky to get out at that time, because Pat Lawther retired very soon after. And I don't think I could see where I was going. I couldn't see that I was going to be a career scientist in the way that I would have wanted to be. It was partly my fault. I don't think I was good enough. But partly I think it was not managed. I think people had not really looked at the whole issue of research management in those days. It was a very much 'You come in in the morning with an idea and you do an experiment in the afternoon'. It was really extremely *ad hoc*. And amazing really now to think about it but that's how it worked. And so I don't think that I was very well managed. Nobody said to me, 'Right, each week, let's sit down and let's look at what you've done this week.'

So I think I went for weeks on end not really achieving anything and nobody being particularly bothered because there were other people doing it. It wasn't like I was the only person doing it.

**TT:** So you decided towards medicine?

CD: So then I was in the middle of a PhD and that again wasn't going very well because it wasn't properly supervised, and I was persuaded to write it up quickly as an MPhil and get it out of the way. I was very, very lucky, I did a paper at a conference, I think it might even have been an international conference, but it was certainly a fairly major conference on medical electronics, I think it was on. And by sheer coincidence a chap called Bruce McGillivray, who was dean of the Royal Free Medical School, was in the audience. He was interested in EEGs [electroencephalograms] and he was in the audience and then when I applied, as you remember in those days, you had to apply through this clearing house called "UCCA" for the university. And I applied for six Medical Schools and I got straight rejections from five of them, and McGillivray said, 'I remember you. Come and have an interview.' And I went to the Royal Free and it was a very kind of old fashioned interview and Denis Thatcher was one of my interviewers. And that was really interesting because Denis, this was at the time when they were trying to promote Margaret Thatcher into a position where she might be able to become Premier. I think at that time she was Health Secretary or something like that. Anyhow, Denis had a bit of a slightly suspect career and they wanted to launder him so they got him on to all kinds of Committees of the good and the great. And he had some connections with another guy who

was the physics tutor at the Royal Free, who subsequently became Minister for Northern Ireland, and his name was...

**TT: Brian Mawhinney?**

CD: Brian Mawhinney, that's right, yes. He was not a very good physicist but he was very high up in the Conservative party and he got a place for Denis on the Committee at the Royal Free (Free). So Denis asked me the usual questions, 'Why do you want to become a doctor?' And I gave the usual Pat answers about how I wanted to help people and all that stuff. And I managed to blag my way in [laughs]. So, it was rather a strange coincidence really that that happened. And then I went to the Free and you asked me about teachers. I said I had a very good physics master. I also met a guy at the Free called Steve Jones, who is now an Emeritus Professor of Genetics at University College Hospital (UCH). And he was a young callow youth in those days, a rather laid back guy. But an amazing teacher. Even in those days he had this amazing ability to communicate. And he ran this course for two weeks and he taught us all the biology we needed to know, all the biology and all the biochemistry we needed to know to do medicine in two weeks. It was amazing. And I've never forgotten that and I've always followed his career with great interest because I thought, 'Well he is a great communicator.'

**TT: Can I just ask, when you went to the Royal Free had you got the right science A levels? You went in to do second Batchelor of Medicine (MB)?**

CD: I went into do second MB, they didn't have a first MB. They'd got rid of it all by then. I'd got physics and chemistry A levels but not, I can't remember my grades, but I think I had a C or something. I think I had a C in physics and a C or D in chemistry or something. It was appalling really. And I think I only got into university because they got mixed up. In those days they used to give you a different grade for your practical and your written paper and somehow they got mixed up and I got an A in the practical so they somehow thought, I don't know but I suspect that they got it mixed up. I had applied and pure maths. But I didn't have any biology and I hadn't really done any biology at all. In fact the first time I dissected anything was with Steve Jones when he got us to dissect a rabbit, which was kind of interesting. And it just shows you, you don't actually need all that biology to do medicine really. Although I have to say, I did struggle with biochemistry and that was really very hard for me, the biochemistry.

**TT: In that era it was very prominent as well because of the Krebs cycle.**

CD: It was. Absolutely, yes, and it was taught in a very boring way that I couldn't understand. The only bit I remember, and it's the bit I remember right up until now, I used to tell my patients, about good and bad cholesterol. And the guy who taught it, he said, 'You've got to think of cholesterol, it's like a kebab. You have your pitta bread which is the good cholesterol and the meat inside which is the bad cholesterol and you have to think of it like that.' And I've always thought of it like that, but that's the level of biochemistry I have. When it gets down to Krebs cycle, I couldn't see where it fitted in and nobody bothered to explain.

**TT: When you went into medicine did you have any plans as to where you were going to be?**

CD: Oh yes. I wanted to get involved in electronic implants. And at the time it looked like there was going to be quite a lot of activity in that direction. People at Bart's were developing radio-pills and miniaturisation of that sort was really coming in. And cochlear implants were being talked about and all that stuff. Now I thought there was going to be a real opportunity there. It didn't take off in the way I thought it would. It didn't really burgeon. And I then slightly reoriented and headed for a career in surgery, which with the benefit of hindsight was probably not a good plan because I'm really cack-handed. And it was very obvious as soon as I started doing surgical jobs, I just hadn't got it. I just had six left thumbs. So fortunately, somebody didn't have to tell me, 'Don't go into surgery...'. I knew immediately, myself and I didn't have to be told. And then I fortunately did some very good GP training stuff and realised this was what I really wanted to do, to be a general doctor. So it was very fortuitous that I was again, had some good experiences

of teaching in general practice. I remember I went down to Guilford and was at a practice down there, and liked the life and what was going on.

**TT: Were you married by this stage?**

CD: I was married when I was a medical student. Yes, I was married while at the Air Pollution Unit. So I couldn't mess around too much, faffing around choosing a career, but I didn't feel under pressure because once you go into GP training, at that time again the world was one's oyster, there were lots of opportunities and you could try things out. I did a bit of Accident and Emergency (A&E), I did some surgery, some medicine, care of the elderly, and I did some obstetrics and gynaecology and some paediatrics, so I did a whole range of things, which were appropriate for general practice. And I could have, if I had alighted on something different as I went through, I could have done a side move, but I didn't particularly want to.

**TT: How did you want to develop your career in general practice? What kind of practice would you want to work in? Did you seriously think about that, city or rural, or all of those things?**

CD: Yes, I remember I was turned down for my first training post because I said I wanted to go and work in the Shires, or words to that effect, which is not what they wanted to hear. In fact I hadn't really thought it through, I just thought it might be nice to live in Winchester, rather than in Newham which is where I'd lived for a large portion of my life. But anyhow actually the outcome was I've stayed in East London and have thoroughly enjoyed it and would not want to be in, I don't think I'd want to be a GP in the Shires although I did do a swap about two years out from starting, I did a practice swap with somebody for three weeks where we swapped jobs, with a country practice, and that was interesting.

**TT: And when was that?**

CD: That was probably in the 1970s, no in the 1980s, late 1980s, I think. That was when I was at East Ham, I was a GP in East Ham and we swapped. I swapped with a guy from Seascale.

**TT: And you weren't tempted to make...**

CD: No. After having done a night visit that involved driving 50 miles I thought, 'Blow this for a...'

**TT: And you also spent some time in Australia, didn't you?**

CD: Yes, I've had two sabbaticals, both very, very enjoyable, three months each, one in the Northern Territories, one in Western Australia, both connecting with rural clinical work, and they were both connected with teaching really. So the first one I did was helping them to set up a mechanism where the students from Sydney and from down south could go to a rural community and be housed in the community, and work in the community with the Aboriginal people to understand what was going on, and actually to provide a service for them.

**TT: How was that organised? Was that organised from Australia, that they wanted somebody to come out?**

CD: Well, the first one was through a guy called Sam Heard, who had been a GP in Hackney. And he was Australian, went back to Australia to Darwin, so I kind of knew him from old. And I wanted to do a sabbatical, I needed to do a sabbatical, because I was really burnt out actually at East Ham.

**TT: What year are we talking about?**

CD: We're talking about 1994. Yes. And so I needed a sabbatical. So I wrote to him saying, 'Is there anything that I could do?' And he said, 'Yes, we've got some Commonwealth funding money to do this. Come and you could do some...' And I did a bit of clinical work there as well, got registered, so I had registration.

And then did some stuff where I flew to remote places. It was quite exciting. And that didn't achieve very much but I did set up this programme which carried on and the students did start coming from the south. And the whole idea was to get people to go and work in country places, because they have terrible trouble getting doctors to go to rural parts of Australia. And then in the second sabbatical, which was 2010, in Western Australia, I did a slightly more formal thing. I wrote to a rural clinical school. And at that time I was Senior Lecturer at Bart's and the London.

**TT: So you wrote to...?**

CD: To the Rural Clinical School for Western Australia, which is an organisation that covers two universities and they place students in rural settings for a whole year. So a student goes for the whole of their penultimate year, to a small country town, and is taught by the people in the town. And that was interesting because I did some teaching there and I also did some clinical work there as well.

**TT: Fascinating. And quite a contrast to your inner city, East London background?**

CD: Yes, well I don't know many Australians, but they have a different way; they're much more get up and go and everything is possible in Australia. And I think with the benefit of hindsight, had we been much younger, because Noelle went on both these trips, we both said had we been younger and had we not got elderly parents to look after, we would probably go and live there. In fact I was offered a job there.

**TT: So can we just come back to your career in East London as a GP. Can you just describe a little bit how your career developed, Chris, because you were training as a GP trainee, then you became a principal partner in Newham and then in Stoke Newington.**

CD: Yes, I had two practices really. I was partner in both, they were both fairly large practices, and both quite involved in education. And I was the main lead in the educational side certainly for the first one and in the first one, my main contribution to that was to build a new surgery. And we built a really nice health centre which I think I was probably the main driver for. When I first went there the practice was housed in a council flat. And it was horrendous. The patients used to sit outside the room on a chair which was preloaded by the receptionists. So they sat outside. You'd be having a consultation with somebody inside, and then as soon as they went out the next person came in, and everything that was said could be heard outside. It was an appalling situation. They were doing five minute consultations. You had to be finished in time because the room was being 'boxed and coxed' for the next person, and it was the sort of medicine that I didn't want to practice. So we built a really nice health centre at a time when, again, there was money around for building new premises.

**TT: Can you say a little bit more about that? You say money was around, but money just doesn't appear and a centre get build. So there must have been quite a campaign?**

CD: What happened in those days was, there was money, for practices to borrow. As GPs are in a sense independent contractors, they're self-employed. So if you want to have a new surgery and own it, you have to get a mortgage and build it. But there were all sorts of schemes at that time which no longer exist, which were supported by the Government, so that you could get a loan at very, very attractive rates and I think we got, we borrowed about a million pounds for this. This was in 1990 or thereabouts.

**TT: And how many of you were there doing this?**

CD: Six, I think I had, when I was there I had a quarter million pound mortgage on the surgery, which I passed over to the person coming in. But there were all sorts of mechanisms, and I worked with the architects who were quite a young group of progressive architects who put more into it than they probably should have done in terms of time. And we did produce a nice building, which interestingly you wouldn't get now again, because the quality of building in health buildings has gone down. Everybody wants to build things very cheaply.

**TT: What constraints were there from say the local health authority? Did you have any?**

CD: The main problem was getting the space, the brown field site, and we had a plot. We identified a plot of land, which was a bombsite, and there was a prefab on it, I don't know if you remember the old prefabs? There was a prefab on it, it was still on that site in about, it would be about 1990 or 1989, and it was obviously near the end of its life. But there was an L-shaped plot around it, and we wanted to buy the L and then we really wanted the bit with the prefab so we could have a rectangular plot. And there was a chap called Stephen Timms who has subsequently become quite prominent in Government, in the Labour Government, I don't know if you remember him? He was a Minister. But he was Head of Newham Council at that time, and he helped us basically to get that land, and have land for a surgery and have a sufficiently large plot of land to be able to build it. But there was a lot of faffing around with getting permission and it took, I think, about four years.

**TT: And this was your first practice in Newham?**

CD: Yes.

**TT: And then you left that in 1994 to go to Stoke Newington?**

CD: Yes. I was burnt out after that experience, building the surgery, and it was at a time when the politics of medicine were really changing quite a bit. It was at a time when fundholding came in, I don't know if you recall that? And the people in the practice were very different politically to me. I was towards the left and they were very much towards the right. And they wanted to go fundholding and they wanted to go down a different path and I didn't feel it was me really. So I did something which I think now was fairly - what some people would say - brave, other people would say a very foolhardy thing to do: I just left and went on a sabbatical. I said, 'I'll go on a sabbatical and come back and get a job,' which was, I don't know whether it was foolhardy. I had a few connections, so I kind of thought I might be able to get a job, and I did, I went to Stoke Newington straight after coming back.

**TT: What kind of practice did you join then?**

CD: This was actually a practice with some of my previous partners, or one of my previous partners, and that was much more left wing practice, much more dynamic, younger people, committed to a different kind of healthcare, and a bit more committed to education which is, again, the thing that I found difficult, being an educational person in the practice where people are not that interested. If you want to develop your practice as an educational practice, it has implications for the income of the practice and you don't tend to be high earners, so that has a lot of spin off.

**TT: Where did your interest in medical education come from? Where did that really develop? Are you aware of that?**

CD: I think at school I kind of knew I liked telling people about things. And I remember doing a lecture to the physics society in the Sixth Form on the computer. And I didn't know anything about computers but I remember trying to demonstrate binary with a piece of hardboard with holes in it and sticking a rod through for the various bits of the binary code. So pathetic really thinking about it, but I just kind of knew that I liked telling people about stuff, how things worked.

**TT: When you were a practicing GP, Chris, did your colleagues, both in Newham and then Stoke Newington practice, you indicated in Stoke Newington they were more of your mind-set. Were they also thinking about medical education, getting young medical students in?**

CD: Yes, I think so. I mean both practices, I became a trainer in the first practice, I got the practice to become a training practice. It had been a training practice but they made us jump through a few hoops to get it

reaccredited. And yes, I suppose it was having been influenced by people in my own career, I wanted to pass that on. It's almost that bit of the Hippocratic oath about passing on your trade to the next generation.

**TT: And is that when you became associated with what was then Bart's and London?**

CD: Yes, there was a chap called Mal Salkind, who was a GP in Hackney, and he was the first Professor of General Practice, I think, at Bart's. I'm not even sure that the merger had taken place, the merger was in the offing, or it may have just taken place, but I don't think there was a General Practice Professor at the London [Hospital]. So Mal was nominally the Professor, but there were much more dynamic people, people like Sam Heard and Paul Julian who were Senior Lecturers who were doing the teaching in practice. So I got interested in doing that kind of teaching, having students to come to the practice, sitting in with us and running objective structured clinical examinations (OSCEs). I got quite interested in designing OSCEs and that sort of thing. And so that was the background. And Mal I think took sympathy on me and said, 'Oh, why don't you come and do something?' I think I did bits of very minor research there, can't even remember what it was, but I remember I did some guidelines. I remember I did a guideline for, gastro oesophageal reflux and I did the East London Guideline for that. So it was around those applied research things, it wasn't pure research.

And there was also an organisation called the MAAG, which was the Medical Audit Advisory Group, and I was involved in that in some way. I don't quite understand how I managed to get on that.

**TT: Was that just to do with general practice?**

CD: Yes. It was when audit was becoming the thing in general practice and the government thought it would be a good idea if general practitioners audited what they did. So there was money again sloshed around for these Medical Audit Advisory Groups.

**TT: During this whole period of your career in general practice, you must have seen quite a lot of changes actually in what you could do as a doctor. Could I just ask you reflect on some of the changes you've seen in general practice?**

CD: If I could just go back, I have to go back to before I was a doctor, because I was born nine months before the National Health Service came in, so I kind of saw what general practice was like in the early days. And I remember going to a GP when I was a kid with my mum and the telly was on and the test match was on, and he had a pipe in his mouth, and there was an enormous pile of drugs on the table that had been given to him by reps, and the whole thing was really pretty chaotic. And I don't know if you remember at that time there was a guy called Collins who came over, I think from New Zealand, wrote a report on general practice in Britain and said it's pretty crap basically. And then of course the College of Physicians and people all jumped up and down and said, 'Yes, yes, we've been saying that for ages! These GPs, they're just people who have fallen off the hospital career ladder.' And that period when I was a kid growing up was certainly not a period when you'd want to be a GP. I think that's what put my mum off medicine actually because she was doing general practice at that time and saw some of this terrible stuff. And, so that was terrible. And then in 1966 there was a thing called the "Charter," the "GP Charter".

And that was where people began to think it would be a good idea if people didn't work in isolation, but worked in groups, so there was a financial incentive, to work in groups. And there was also an incentive to employ staff. And very generous incentives for staff and for premises, and so that in 1966 was the time when it began to become quite a good thing to be a GP. So I was very lucky in the sense that things had already begun to develop by the time I did medicine in, well I qualified in 1982. General practice was already then a proper profession, there were Professors of General Practice, although not many at that time. And there was compulsory GP training came in around that time. So that training of GPs was a really important thing, making it a proper profession rather than just something you dropped into, because you couldn't do proper medicine. I suppose the thing that I would say is of the things that have happened, the organisational

things have been the biggest contribution, not the medical technology things. There have been a few kind of important medical technology things though.

I think computers, or record keeping generally, thinking about records has happened over my lifetime. When I started there weren't computers, we wrote all the notes on those little Lloyd George cards, and I was interested in that even then I remember I had four pens. It was those days when you could get these packets of biros with different colours and I used to write my notes in four different colours. So I'd write the problem, I'd write the history in one colour, then the examination in another colour, and the prescription in another colour so that you could see from the notes how it was all laid out. And that was again something that was taught me by my trainer so it was again, I was very influenced by modelling what other people were doing. And then we kind of started to do that in an electronic way by having proper medical records and we had one of the first computers I suppose in practice, proper practice computers, and that would be, at East Ham it would have been in about, I would think 1987 or 1988. They were beginning to bring computers in in general practice.

**TT: When you say East Ham, you mean Newham?**

CD: Newham, yes. East Ham, it was actually East Ham. Newham is between West Ham and East Ham.

**TT: You mention that changes in administration, organisation, computing.**

CD: I know what you're going to say, you're going to say, what about drugs and all that stuff?

**TT: What about the patient coming to you?**

CD: I think there has been a lot, I think when I started, they were doing five minute consultations. Even when you were managing a chronic disease it was a bit like, oh well, the way you manage chronic disease is you just manage the acute exacerbations, you don't fuff around worrying about keeping things stable, you just manage it on an *ad hoc* basis. So in a way when I started it was very much acute medicine applied to chronic diseases. And then it started to become more, you kind of bring people back even though they didn't plan to come back, because there's nothing wrong with them, to check things are going along alright. Check the blood pressure, check the cholesterol, check in a bit more detail whether they're using their asthma inhalers correctly, all that kind of stuff came in I suppose during the course of my career. And I'd never really thought about this until quite recently but chronic disease management did come along in a rather surreptitious way and crept in. But it was very much geared, and made possible by electronic record systems.

And so it was like many things, they become possible and then we did them. I started managing diabetics in a kind of organised way at East Ham in conjunction with a chap called Peter Kopelman who was actually dean here at Queen Mary eventually. But he was a diabetologist then, and he was quite far thinking, and he used to come out to the practice and sit with us. So I would sit with him and we'd see the diabetics together and then we entered the data onto a computer database, which was our own concoction then.

**TT: Didn't he go to St. George's? Wasn't he Dean?**

CD: Yes, he just retired from St. George's. And that was very good and that made me again realise how important is working together. Actually that's the other thing that happened, which is again a kind of organisational thing, not a technical thing, but made a huge difference to the quality of medicine we were delivering, is working in a multidisciplinary way. It's something that I rather regret that we used to actually have good relationships with hospital doctors and we were on phoning up terms with them and we could ask them for advice. And it was like the old days when you could, they were proper Consultants, you could consult them. Now, as you probably know, when you refer somebody you can't refer to a particular doctor, you have to refer to the Department of Orthopaedics or something, and it's a bit like the barrister thing, it's the next cab off the rank kind of thing. And that's all gone. But we, but nevertheless, I think people do work more in teams and particularly, the professions allied to medicine like physiotherapists and district nurses and

those kind of people. I think that developed. And then again it's slightly declined as the management of these teams has been moved to and fro.

**TT: And when did your interest in history of medicine arise?**

CD: Ah. I think I've always had an interest in the history of what I've been doing. I remember when I was doing physics, I was as interested in a way with what people had thought before a particular theory came along, how had that theory moved from one way of thinking to another. So I think it's been a very gradual thing but I can remember sitting looking at this graph of, I can't remember what it was, it was energy against wavelength or something, and how the graph had changed when Maxwell-Boltzmann came along. I've come across in my life a number of people who at the time when I met them were not very eminent, but have suddenly become eminent. And that was taught by a man who subsequently became Astronomer Royal, Arnold Wolfendale. And he did this basic physics course in the first year at Durham, and it was brilliant. So I think history of medicine itself, possibly when I was doing the guidelines for helicobacter and I thought, 'Blimey, that's kind of pretty good. These guys drinking the germs and then curing their peptic ulcers.'

**TT: This was Barry Marshall.**

CD: Yes, Marshall - typical kind of Australian stuff. And I suppose thinking about what we'd done at the Air Pollution Unit and how potentially dangerous it was, but how exciting it was really.

If you want me to say something about the treatments that have changed in my career, I think SSRIs [selective serotonin reuptake inhibitors] were quite important. I think the overuse of antibiotics has been quite important and I guess we might come on to talking about the future. And that has been something that I'd thought quite a bit about. How much people like GPs over use antibiotics.

**TT: What about patient expectations and changes in patients?**

CD: Now, that's changed enormously. And when I started with the five minute consultations a patient used to come in, one patient, one problem, five minutes, out. There still are a few doctors who say, one appointment, one consultation, one problem. They won't discuss another problem. But of course life's not like that, and problems aren't like that. So gradually the number of problems increased and when I retired three years ago, I was typically getting four problems, people wanting to talk about four problems. And that is really difficult. I remember first coming across it when I did a locum in the 1990s just across the road here actually, in Biscay House in the Mile End Road, part of the Ocean Estate. And that was another horrendous premises. It was in a ground floor council flat and it was just completely blew me away because every consultation, six people came in and they had one appointment, but they wanted to get all six people seen. And they were all Bengali speaking so it often had to be all translated. And that began to make me realise how difficult it is when you've got multiple problems all jiggling for attention really. So I think that's, that's been expectations, number of problems. I don't think the expectation in terms of the nature of the expectations. I mean I remember even early on, people wanting me to arrange for a sweep to come and sweep their chimney, because they had a smoky fire and it was bad for their chest.

And we were certainly taking on the pastoral role of the rabbi and the priest and all the other people that had previously provided pastoral role but had disappeared. So that I don't think changed, but it's the number of things and also the other thing was the requirements to do things which were not on the patient's agenda. The requirements to do chronic disease management. And I remember standing at a fruit stall in East Ham High Street once and there was a woman in front who didn't notice I was there and she said, 'I went to my doctor today and I'd gone along with stomach ache and all he wanted to talk about was my blood pressure,' [laughs]. 'And my contraception. And it wasn't any of his business. I didn't go along there for contraception.' So it was kind of, we had to ask these questions and tick the boxes from, I suppose, when did that all come in? I suppose about the 1990s, that was suddenly becoming a bit of a chore and it has become almost impossible now.

**TT: So coming towards the end of your GP career and the start of your next career.**

CD: I retired in about, yes, 2012.

**TT: Was that an easy decision to make?**

CD: No. No, it was kind of really interesting. I mean I was chugging along. I'd done the second sabbatical in 2010 with realising that I was coming up to retirement and wanting to have time to just think about it really. So it was with that in mind I did that sabbatical. And then I went back and I was rejuvenated for a while and then, you've only got to have two or three hard consultations, and suddenly you feel, 'Do I want to be doing this now?' I was 65 or thereabouts. And it's kind of interesting because I've seen it in other people as well, they suddenly decide. And the thing to do then is just to say, 'I'm going now. Tatty bye.' Not hang around because, you're not part of the team anymore, you can't get your head into it. And I thought, 'I think I should go now.'

**TT: Where does history of medicine fit into this, because you became much more involved in history of medicine activities.**

CD: Yes, yes, well I did the lectures in the history of medicine, I don't know when it was, but quite a bit before I did the exam.

**TT: This is at the Society of Apothecaries?**

CD: This was at the Society of Apothecaries. And there was a chap called Robin Price who was the convenor at that time and there were a few people did the exam but there were a lot of people who just went to the lectures. And Noelle and I went and did the lectures and we enjoyed them and, then I thought afterwards, 'Oh, I think I'd quite like to do the exam.' But I was quite busy. So I suppose I left it about five years and then I went back and did the lectures again and did the exam. So it evolved over that length of time really. Yes.

**TT: But since then you've got much more involved at the Society of Apothecaries?**

CD: Yes, well when you retire it's a liberating thing, it's a wondrous thing to retire really, and it's such an important thing to do while you've still got energy and a few, just a few neurons left in your brain, I think.

**TT: Can we go back, Chris, to the Air Pollution Unit? I would like to talk in much more detail if we can now go back, unless you think there is anything in particular you want to say about your time in general practice?**

CD: No, I think, other than obviously a lot of what has happened in general practice has been influenced by political machinations and I think the provider / customer split was a very big transition which probably was necessary but when it didn't exist it didn't seem to be a problem, and everything seemed so much simpler. So that's one thing, and now the Government is completely messing it up. I was reading recently about this Crick Institute which really interested me because I walked past it yesterday and just thought, 'Blimey, it's a big bit of building, absolutely massive.' And then I was looking, what's going to be in there and I was thinking, actually they've got all these different groups and it's a fantastic idea of having multidisciplinary teams there but actually there'll be all sorts of service groups like, if you want your DNA sequenced, you don't do it yourself you go to some sequencing department and presumably there'll be all sorts of documentation you have to go through to get it all approved, electron microscopy or optical, so I think it will all be kind of, it's the same thing, every bit of the slice of the pie has to be justified, whereas in the old days we just had this big pie and we just took chunks out of it and people didn't worry about if it was meat or gravy or potato.

**TT:** Can we go back to those old days? You've got your degree in physics, applied physics, you're already veering towards medicine, you go to the Air Pollution Unit, what do you think you're going to be doing there?

CD: I hadn't really a clue, to be honest, I just thought it looked rather interesting. And it was reasonably well paid and that was what I think drove people then. I worked with a guy called John Ellison who, wasn't mentioned very much in the symposium, Witness Seminar, that we had, and he was the senior physicist there, and he was an extremely interesting guy. I really liked him very much although he was incredibly lazy really. Maybe lazy is the wrong word, he spent most of his time reading *Nature* and he would read *Nature* from cover to cover every week. And it was in the days when we actually had a library in the Unit. It was fantastic we had a library and a librarian. And a lot of journals they subscribed to, so he used to plough through all these journals. He used to know everything about what was in the current literature but he didn't do very much research and he certainly didn't keep me on my toes. And he was, I think he could rightly be described as a 'gentleman scientist' really of that ilk. So he was my kind of mentor and the thing that he taught me, and he taught me a lot, he taught me to write reasonable, not good, but reasonable English from a time when I could barely string two words together. So I went there with pretty poor English actually, really poor English.

And so there was him and we sat in the same room together. And then next door there was Brian Biles, with the electron microscope and a really good photography lab. And whenever we wanted any publications he used to do all the photography of the graphs and things. And then the next lab there was a girl who did microbiology, she plated out *Haemophilus influenzae* (*H. influenzae*) and that was because Pat Lawther thought *H. influenzae* was a really important bug. I'm not sure whether it was any more important than any other bug, but he thought it was and it was obviously being isolated from people with chronic bronchitis.

**TT:** So this was just from biological samples from people, pathological samples?

CD: Yes, yes. It was kind of interesting that all these labs, Health and Safety would go berserk if they saw it now, but we had like this room she was in and we used to be going through there all the time, and with plates, and she had plates out and all that stuff. And then in the next room there was a chemistry lab, which looked kind of like a proper lab, because there was gear around. In our lab we hardly had anything because John had an optical bench, but he never ever played with it. It was just there as a fashion accessory really. But in the other chemistry lab they had really proper stuff, all kinds of analysers and bubbling things. And there were people with pipettes walking around and all that kind of stuff. And Brian Commins used to preside in there with a team of I think three technicians who used to sample the air not only from on the roof at the Medical School, they had a sampling chamber in the room above which had been specially built for them. But they also had a public convenience in Fleet Street that had one of the cubicles there, they had sampling equipment in it. And they had various other places including somewhere in Hampstead High Street and somebody's flat in Hampstead High Street. They had some gear in there. And then we also used to take stuff out for ad hoc stuff, so they went to Blackwall Tunnel, they went to London Airport.

**TT:** So, so far you've described, there were a couple of physicists, there was a microbiologist, there were these chemists. There were obviously some clinicians there to be taking these samples?

CD: No, Pat Lawther was the only clinician. He'd had various clinicians pass through the lab but very fleetingly and there was quite clearly, he had a problem with other clinicians and they didn't stay very long. So he was most of the time when I was there, there was not any other clinician. The only other person that was there was a guy called Will Whimpster who was a pathologist, a histopathologist, and he was there for a little while and did lung sections and stuff. But he, again, didn't stay very long.

**TT:** How were all of these people coordinated? This goes back to really my question, what did you think you were going to be doing?

CD: Well, not very well is I think the answer. The answer is we weren't coordinated and that was part of the trouble, I think, with the benefit of hindsight. Nobody thought of it at the time, and it probably wasn't unusual for MRC labs. But there was no proper management. Pat Lawther was one of these people who flitted in and flitted out, so I don't remember him being there that much. He was probably only in the lab for a quarter of the time. Most of the time he was out so just were left to our own devices really. Down the bottom of the corridor was a physiology lab, a big physiology lab, with all kinds of gear. Most of it had been made by one of the technicians in the lab, spirometers of all kinds, the whole body plethysmograph, which was at that time pretty unique in its sensitivity, an exposure chamber, big exposure chamber, ludicrously large like the size of this room the exposure chamber was.

**TT: About four metres by eight meters or something?**

CD: Yes. And it had a coal fire in it, and there were all sorts of taps and things that made it look like you could put the effluent from the coal fire into the exposure chamber, but of course one never would do because it would have just been too hazardous.

**TT: Who was in charge of the physiology lab?**

CD: Well, I suppose Pat Lawther kind of. There was a guy called Alan Brookes who was a Senior Technician who used to do all the physiology lung function and we provided a service for Bart's, there was no lung function lab in Bart's, so patients used to come over. That was what I suppose got me interested in medicine in a clinical sense, when the patients came over from St. Bartholomew's Hospital for their lung function tests. And Alan used to do the lung function tests for them. And we had a rather wonderful machine which calculated, because one of the things was calculating the residual volume, the bit in the lung when you've blown everything out, there's that volume. And in order to do that you have to have a dilution test with helium. So we had people breathing helium mixtures and there were various calculations, relatively complex calculations which involved the temperature and Boyle's law and all that stuff, to work out what the residual volume was. That was all done on a wonderful machine called "an Olivetti", I'm not even sure what it was called. It was an Olivetti computer really but it was a programmable calculator on a little trolley, and the programme was on a little magnetic card. It was a wonderful piece of design and I still marvel at it, and if I could buy one now, I think I probably would. I think they're probably all in a skip somewhere. I don't know if you remember them?

**TT: I remember a similar thing which was a Wang. We had a similar thing with bits of card you printed and you wound the handle round.**

CD: This was all electronic. This was a wondrous thing and anyhow he typed in these numbers from the spirometers and he got out a print out of these things. So he did that, there was at one time, a junior doctor came, I think because they thought, they were taking blood for carbon monoxide (CO) and I think they thought, I don't know why, that they ought to have a doctor around if they were pricking people's fingers. They were only little tiny capillary tubes full of blood, so it was only a thumb prick, so I don't know entirely what that was all about but I remember she took blood from me in a most vicious way and I thought afterwards if ever I have to do that I think I might learn how to do it a bit less harshly. So yes, there were a couple of junior people down there who manned the physiology lab, did the service for Bart's. I don't know how official it was that lung function service. I think it was all done on a 'you scratch my back and I'll scratch your back' type basis.

**TT: But did you have volunteers as well? You were running a service, and there's all these labs all seemingly doing their own thing. What were you actually doing?**

CD: Mostly human stuff, I think we talked about that at the Witness Seminar. There were no animal experiments really being done there. There was no appetite for animal experiments from anybody really so nobody was rushing to get a sheep in or something. Although there were animals on site because I remember coming up in the lift with sheep once.

**TT: That may have been Cardiovascular.**

CD: It was the Physiology Department. There was a Physiology Department.

**TT: That would have been somebody like Michael de Burgh Daly.**

CD: It was. Yes, yes. And so there was animal work going on but we didn't do any. And volunteers, as far as I can remember, they were pretty much all us. We were the volunteers apart from, I remember one experiment we did where there were four of us. There was me who just breathed normal air, there was a medical student, again the ethics of this I've never quite worked out, but there was a medical student who'd had to smoke 20 cigarettes in quick succession. She was a smoking medical student. She'd smoked 20 cigarettes so she's got CO way up in the sky. There was somebody who had breathed CO from a bag and got their CO levels, and then there was somebody else who I think, had been walking around in Fleet Street or something. And we all drove round, I remember, in this car, in this open topped, it was a wonderful, one of those Morris Minors. An open topped Morris Minor owned by the technician, he used to drive in from Gerard's Cross every day in it, and he'd taken out the headlight, you'd probably get stopped by the police if you did this today. He had the headlight out and in the headlight bay there was the sampling equipment for when we were driving around and around Fleet Street and the City and we measured the levels of CO in our blood, and of course the smoking, people with the carbon dioxide (CO<sub>2</sub>) they dropped right down and we came up a bit.

That was kind of interesting. This medical student, how was she recruited? What was the mechanism? Did she sign any bits of paper? Was she paid? All those kinds of stuff I've never got to the bottom of at all, and I should have asked really but one didn't in those days. At the end of the day it was most hazardous for the person who had been breathing the CO from the bag. When you think about it, was a pretty hazardous thing to be doing. But I never ever remember anybody thinking about informed consent or it being discussed.

**TT: You probably just all assumed it was part of your job and didn't question it.**

CD: We did. And we didn't kind of think of it as being particularly dangerous, it was part of life really.

**TT: What about the personalities of the people who worked there?**

CD: They were all very bright, I remember them all being very bright, all having certain quirks, everybody had it. It was almost like you had to have a bit of eccentricity to work there. And slightly gung ho, everybody was a bit gung ho I think. And very amusing. I remember Brian Biles. He used to come out with these amazingly funny descriptions of things in a kind of surreal way, which I've never come across anybody since who has been like that.

**TT: Can you give us an example?**

CD: Well, there was one of the members of staff who was very refined and he had a very refined wife, but they lived in absolute squalor somewhere in a very posh part of London. And they had a party at their house and Brian described the place as 'a well-appointed gypsy encampment [laughs], which was absolutely spot on really. But there were all sorts of people, they all had nicknames. There was a kind of a very, it was almost schoolboy kind of atmosphere, and I imagine it was a bit like post-military kind of stuff.

**TT: Saying schoolboy, were there any women around?**

CD: Yes, lots of women. But not any, well actually no, Terri Bloch, she was a microbiologist, she was on scientific staff, but most of the women were young technicians and secretaries and a tea lady. And I think we forget that, there was a tea lady employed, and you think a tea lady for a group of what was probably 12 people was extraordinary really and she used to solemnly come round with her trolley and, you know, what was that all about? [Laughs]. We all had white coats. That was the other thing, I mean I didn't do anything that

merited a white coat and certainly John Ellison didn't, but he always used to come in and the tea lady, she also had this sort of office, I think she did a bit of cleaning as well, she used to have these pristine laundered white coats. Every week we got these with our names in. And I don't know whether that was a thing, I think it was probably an MRC thing, the white coat thing. I mean I remember abandoning the white coat after a while and then we used to put the white coats on when anybody came from head office when it was said, 'Oh you must put your white coat on.'

But the tea lady thing is, I think, interesting because I wasn't quite sure whether, there's the thing about the water cooler, the meeting around the water cooler that people talk about now, how it's important in multidisciplinary teams to chill out together. And I don't know whether that was all about that kind of thing, because I do remember we kind of took a long time drinking our coffee.

**TT: And where did you drink your tea and coffee?**

CD: Well, I think we probably, it was a combination of at our desks but not at our desks, turned around and chatting to each other, or I think the library was used quite a bit I think. We used to repair to the library quite a bit and again, the library was a room bigger than this. I would guess they subscribed to 20 journals, which was not an insignificant amount of money, and also space for storage.

**TT: It's quite extraordinary to think about it and think of all the other MRC Units at the same time doing exactly the same thing.**

CD: Absolutely, yes.

**TT: Quite incredible.**

CD: I mean I don't know if that was the case in other units if they had libraries.

**TT: It was in the Unit I worked in.**

CD: Some of the journals we wouldn't have been able to get them, I mean, *Atmospheric Pollution* and things like that, those kinds of journals would not have been available very easily elsewhere.

**TT: You've all these different kinds of people, but I'm getting this strange sense of chaos. So how did you collaborate with, say, Brian Biles or Brian Commins, or the physiologists? Were you brought in to other people's experiments?**

CD: Well, things popped up. For example, sometimes things popped up like for example there was a concern about the Blackwall Tunnel. I think this was in the days when there was only one Blackwall Tunnel, I can't remember. But anyhow there was a business where they went and sampled in the Blackwall Tunnel and everybody chipped in and somebody got stuck down there, and actually Robert Waller, he went down into the tunnel with the sampling machine and got so much CO<sub>2</sub>, he couldn't get up the ladder to get out. And the only way he could get out was to walk out the long way because he just couldn't get himself up the ladder. And so everybody chipped in on those kinds of things. They did some work on silos, there was a concern again about when they started making silage, there used to be, I think it was CO<sub>2</sub> used to form on the top of the grass, and there had been one or two accidents that people going to poke the grass down and then dropping into this. And somebody went up with samplers and poked tubes into the top of the silo to sample the carbon monoxide. So we were equipped to do things like that on a kind of *ad hoc* basis.

But most of the stuff was in fact the really good people there were the epidemiologists. Robert Waller was excellent and he had a number of long-term things that went on over years, so there was an established, I suppose, a *raison d'être* in keeping these long-term cohort studies going, like the London Bridge walk where they walked in each day and there were diary studies with I think they would volunteer, people kept diaries.

**TT: Can you say more about both of those? Both the London Bridge walk and the diaries?**

CD: Yes, the London Bridge walk was three people, I think it was three, used to walk in. Certainly it was Robert Waller and Pat Lawther. They used to come from South London, they used to come into London Bridge station and then they would walk from London Bridge station each morning and then they would immediately they came into the lab, walk into the body box and have their airways resistance measured. And that went on for several years. And so we were all geared up waiting for them to arrive and they always used to arrive within five minutes and so it was all kind of synchronised to that. The diary study was some bronchitis, now I don't know how they were recruited but they kept diaries of their symptoms, a symptom score, and then that was correlated with the levels of pollution in the air at the time for the day. And that was, and then they tried to do some fancy bits of statistical stuff to see whether they could show any correlation.

**TT: And that correlation would be with the air pollution as measured on the roof?**

CD: Yes. I think it was the roof. I mean it was a rather artificial system, because Bankside power station was still generating at the time. In fact I remember going and seeing where the current turbine hall is now, there were two turbines in there, blooming great things, and they were generating like crazy and there was massive amounts of sulphur dioxide coming off the top and drifting across the river to us. So it was a kind of slightly artificial situation and the CEGB [Central Electricity Generating Board] at that time didn't quite know what to do about it. St. Paul's Cathedral had got up in arms because the acid was corroding the stonework and so they thought 'the thing we'll do is we'll wash the plume before it comes out.' So they had sprays, scrubbers in the chimney, which meant that the plume had less sulphur dioxide in it. Incidentally it's important to remember that that that was an oil fired station and they used high sulphur fuel from Africa, I think. So it was a high sulphur station. But, anyhow, there was less sulphur dioxide, but it came out at such a low velocity that it didn't shoot up into the higher levels. So when there was a temperature inversion it just drifted across. And you could see it, it just came out and dribbled over the top of the chimney.

And we got quite high levels of sulphur dioxide, but we never - while I was there - there was quite high levels in 1970, December there was a high, there was a smog but that was the only, what we could call a smog, and everybody got very excited about it and thought, 'It hasn't gone away,' but it had really. But, so what I think I'm saying is, the levels they were using to correlate were probably a little bit artificial and I'm not sure whether they, they may well have used some of the other sampling sites as well, as well as the one in the City. I don't think they just used one.

**TT: I'm going to just ask about when you did the projects like the Blackwall Tunnel, for example, or the Tate, I shouldn't say the Tate Gallery, I mean Bankside. But when you were doing those, how were those projects generated? Were you doing this on a commission?**

CD: I don't know. When the first 747s, the wide-bodied jet came in at Heathrow, there was concern about pollution levels and they went down to Heathrow. I don't know whether anybody, commissioned them but they went down and stood behind a 747, set up all their gear, and said, 'Mr Pilot, would you mind just revving up the engines?' And they stood there in a Force 15 gale sampling behind this Jumbo Jet. So they did that sort of thing, and I think it was just probably that Lawther thought, 'Well, for a one-off we'll just see what, because if this is a problem we need to alert somebody to it.' I'm not sure how much it was, I don't think any documents, I suspect there was no documentation but I don't know, which makes you think, what would have happened if anything had happened, an accident, all hell would have broken loose. But I suspect it was all done on the basis of, 'Yes, would you like us to come down and we'll check it out for you?' type of business.

**TT: And of all the experiments and work you were involved in, is there anything that sticks in your mind in particular or that you're particularly proud of?**

CD: Experiments that we did there? Well, we were involved in some of the early work on laboratory computers and I was involved in making a case. The funding of the lab, as far as I remember how it worked, I'm not sure of the details but I think the lab used to get a certain sum of money each year for its funding, and then if you wanted any fancy stuff like a computer you had to make an application separately. I think that's how it worked. And we put in an application for a very considerable amount of money in those days. I can't remember how much it was but it was something like fifty thousand or something like that. It was a heck of a lot of money in those days, for a laboratory computer to analyse, to do various bits of analysis, mainly physiological signal analysis. And we managed to persuade the MRC to fund that and it was a brilliant piece of kit and most of the time I spent was developing bits and pieces to hang onto it, to hang onto the computer.

So I learnt quite a bit about, I suppose about putting together grant applications, not that it's subsequently done me any good, but it was a kind of an application to make a case for buying something that, at the time, was extremely expensive. And I know that they looked at it very, very carefully and they hummed and hah'ed quite a bit before they eventually said yes. And I think, on balance, I feel proud that we did it but at the same time I think it was subsequently wasn't very good value for money.

**TT: Can you just put a date on that for the computer?**

CD: Yes, I can indeed. It would have been about... it was the early 1970s, I can't say exactly, perhaps 1972, 1973? And there were very few laboratory computers around, there were only two or three people making them. And it was very small capability. It was considerably less powerful than what I've got on my mobile phone, in my pocket now. And it occupied a whole room, which had to have an air conditioner.

**TT: Can you remember who made it?**

CD: Hewlett-Packard. I remember it had a magnetic core memory with wires that used to go through and it had a huge disk which was a minute amount of memory but it was the size of a plate, a very large dinner plate size. And it had a little trap door, so it was in a plastic case, you slid it in and the readers came in from inside the box. So it was a replaceable cassette really, but it was huge and not very much memory, and it was all programmed in Assembly code, so I learnt how to programme in Assembly code. So we could have got something. We did some interesting things, I mean we did link up but that was where some good management and some good, 'Now boys, we've got the things, we now need to do some science, we need to move this on,' would have made a great difference. Somebody should have said that. I couldn't see where we were going at that point, lost my way I think.

**TT: What do you think were the greatest achievements of the Air Pollution Unit, if anything?**

CD: Well, I think they were, a lot of it was political really and we were reassuring to government that things were, that there wasn't a disaster on the way. And you have to remember it was the Cold War, people were very paranoid about what might happen and there was this feeling that if you got a few good scientists in there, 'They'll keep an eye on things for us, guv,' kind of thing? So that I think, as far as our paymasters were concerned, that was quite an important thing. And Pat Lawther was a very convincing person. He told a good tale and was quite charismatic, and so I think that was part of it. I'm not sure, I mean, he certainly kind of dampened down a lot of hysteria. There was a lot of hysteria about lead in petrol, but I never... I've never really got to the bottom of whether Lawther was right to kind of really dampen that down, or whether in fact there was a real problem. There was a chap at Reading University at the time who was creating a lot of waves for people about the lead in petrol.

**TT: Can you remember his name?**

CD: His name was Bryce Smith. Yes. And there was much on the media and there were lots of things on the media about it and he was claiming that babies were being harmed, and there was a lot of shroud waving going on. And Lawther kind of dampened that down.

**TT: You mentioned the epidemiologists. Can you say a little bit more?**

CD: Yes, well Robert Waller was there. He was a physicist initially and then he moved into epidemiology when John Ellison came, really. And then he was joined by Phil Lord and Alison McFarlane and they did some fairly interesting statistics. It was the days again when computing was really hard work, hard graft. I remember going down to the London University computer centre with a box of punch cards, that big.

**TT: A metre sized box?**

CD: That's right. The London University computer centre was just opposite where the Foundling Museum is now, in the building that's now owned by the Institute of Child Health. It was in there and they had this massive central computer for the whole of London University. And it was a thing, you presented your cards, you then went off and then hopefully half an hour later you might get a result, or you might not, or you went back home and then you came back. But it was a really tedious thing. But Alison and Phillip, we did do some plotting. There was a microfilm plotter and that was quite fun. So some of the graphs and things could actually be plotted out. Now you'd think, 'Gosh, that's not very clever' but at the time we thought that was pretty marvellous really, that you could put in a bunch of cards and get a graph out. And some of those plots are in some of the papers. So they were doing stuff which probably wasn't that sophisticated statistically, but at the time, there were a lot of data.

**TT: Did you have any sense of pride in what you were doing? You wanted to do physics that was applied and then you got interested in medical physics. Did you feel satisfied?**

CD: I was there nine years. I suppose the writing was a bit on the wall because at those times I think it was obligatory that Directors of MRC Units retired at 60. I'm not sure if that's correct but I think that was the rule. They had to retire at 60 and so everybody knew that when Pat Lawther's birthday was.

**TT: So you knew that the Unit was probably going to close on a particular date?**

CD: Well, we kind of, there was no obvious successor to him so I think we knew that the writing was on the wall really. And then when Walter Holland basically said, 'Well, look, the problem's solved,' or words to that effect, or whether he said it in exactly that way, that was how it was interpreted by the powers that be.

**TT: And Walter Holland was then Professor of Epidemiology, was he, at the London School?**

CD: I'm not quite sure where he was, to be honest. I have to say, I was peculiarly naïve about knowing who all these people were. They pitched up, these luminaries, but I didn't kind of quite know who they were really. I think he was at the School of Hygiene, but I'm not quite sure.

**TT: And was he involved, was he involved in a quinquennial review of the Unit?**

CD: Probably, yes. I think he was. I think that's what, yes, was a bit the nail in the coffin, really. I'm not sure whether it was quinquennial or every three years. I've got a feeling we were reviewed quite frequently, yes. And they were quite big dos those.

**TT: So what happened when you did have a review?**

CD: Well, first of all we had to write the report and Pat got us to each write a bit. We all had to write a chapter for the report and then he used to leave everything right until the last minute and then he would write the whole thing in an evening, 3,000 words he'd write in an evening. So he was pretty good, he was quite a journalist really, and there was a lot of effort went into getting it looking good. But I don't recall, there was obviously interest in getting publications and there was a sense that, yes, if you were going to be a proper scientist you needed to have some publications, but I don't think there was the emphasis on publication

that there is now. And if it was in the pipeline you could put it in the report and write about it. That was all you needed to do.

**TT: And did you have a site visit from the MRC?**

CD: Yes. Oh yes, yes, they came along and they sat and we all had to present to them, yes. So that was, the site visit involved us all getting on our hind legs and speaking for five minutes, yes. There was a guy called Bruce Sayers from Imperial College who came along. He was professor of engineering in medicine, I think. A very dour, Australian guy who actually I really liked and got to know quite well after I left, after I became a medical student because he took pity on me really. And he came along and they were all quite dour, I remember. But in a rather gentlemanly way, it was all rather gentlemanly. And I seem to remember a conspicuous lack of women. I remember it being very much a male affair. I don't know whether that would be right.

**TT: I wouldn't be at all surprised.**

CD: I don't recall any women being involved. And I don't know whether people like, there were often other MRC Directors. I think John Gilson may have come from Cardiff. Yes. And I'm not sure if Harold Himsworth himself came but I think there was an echelon of people at a slightly lower level, medically qualified people who looked after different units, I think, and I think they used to come.

**TT: You wouldn't recall who that person might be at Head Office?**

CD: No, I can't. And that's the naiveté of it because when I think about it now, those are the people who I should have known who they were and what they were. But I wasn't very good at networking then and I didn't kind of know.

**TT: Is there anything else in particular you'd like to say about the Air Pollution Unit?**

CD: I think it is interesting. I would like to be able to give you a kind of conclusion about the Air Pollution Unit and I have to say I don't think I'm really well-placed, and I'm not even sure anybody is, but my sense is that it rather petered out and I probably got out at the right time. I mean it was interesting I was, I had some correspondence with Brian Biles who wasn't at the Witness Seminar, I asked him what he did, and he'd left with two of the others and because they were all long-established MRC people, the MRC found them a job at the Toxicology Unit and they were there for five or six years before he retired. So, and I think John Ellison and Robert Waller went to the Elephant and Castle, to the Department of Health. So people were looked after, I think, and I think Robert probably actually did more useful stuff when he went. That's why I'm not sure how much of it was due to the environment and how much it was due to the personalities involved, but Robert certainly prospered and flourished when he went to Department of Health, whereas John went down because they were different personalities. And Robert, when he was liberated from Lawther, was able to do his own thing, whereas John wasn't really.

**TT: And I'm just wondering whether now you think, 'Did I waste my time at the Air Pollution Unit?' or 'Should I have spent less time there?'**

CD: No, I don't think I wasted my time. I think I should have probably, I don't think the right phrase is 'pull stumps', but I think I should have seen a bit more clearly where things were not going right. And I think people, other people, I mean Bruce Sayers was a very perceptive man and he kind of could see that, the research could have been better if it had been more channelled and people like myself, junior people, had been more directed. And he was from an Australian background and he had much more of a directorial side. So I think he could see, interestingly, when I became a medical student I wrote to him and said, 'Any chances for me, because I'd like to keep in touch with applied physics,' and he said, 'Come along in your vacation and you can come and push some transistors around in our lab.' And that's what I did for a couple of years when I was in preclinical. I couldn't do it after I became a clinical student, I've met some really kind

people who have not initially appeared very kind. Rather personalities who were a bit austere but actually underneath when you, they've been really kind to me. So I've been really lucky in that I've never met anybody who has been really nasty to me. Well, I think I've been badly served by some people but not deliberately, not 'out to get you' sort of thing.

I think if you were asking me what's going to be the next 20-30 years, I think we might see some of Harold Himsworth's vision coming about that DNA might actually produce the goods. I think that the idea of you'll get therapies coming out of a discovery like that in the first few years was a bit naïve but nevertheless I think it will happen, hopefully in my lifetime. I don't think it will have any effect on what might happen to me, but I think it might happen.

**TT: When you say therapies, do you mean personalised genomic medicine?**

CD: Well, I think yes, personalised bespoke genomic stuff may come in and I think there'll probably be some therapies that come as a result of it as well. But I don't know, and I could see that in the next 20 years.

[END OF TRANSCRIPT]

**Further related resources:**

1. Jones E M, Overy C, Tansey E M (eds) (2016) *Air Pollution Research in Britain c.1955-c.2000*. Wellcome Witnesses to Contemporary Medicine, vol. 58. London: Queen Mary, University of London.
2. Tansey E M (intvr); Tansey E M, Wilkinson A (eds) (2016) *Derrett, Christopher: transcript of a video interview (22-Mar-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2016111. London: Queen Mary University of London.