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Professor Walter Holland CBE in interview with Dr Michael Ashley-Miller
Oxford, 8 May 1996, Interview I, Parts One and Two

Part One

MAM Professor Walter Holland, can I just at the start apologise for my voice which is a hangover of a weekend cold. By any standards, you have had a stunning career in epidemiology, not only in output but also in quality and significance, and also in the range of topics that you've covered. And we will be interested to follow these up later. But I wonder if we could go right back to the beginning, and tell… I know you weren't born in the United Kingdom, so I wonder if you could tell me about the family, where you were born and when you came to the UK.

WH Yes. I was born in a small town called Teplice Šanov, which is a spa in the north, the north-west [of] Bohemia – what was then Czechoslovakia. I was an only child, my father came from Heidelberg in Germany, my mother was born in Teplice. My grandfather had a wholesale business concerned with woollen and cotton goods and my father, on marrying my mother, joined him in that. And I was born about 15 months after they were married. We lived in this small town for the next nine years, until 1938, when the Germans took over the Sudetengebild. We, because of that, we moved from, to Prague, where we lived for a further 6 months until the Germans occupied Prague. Part of the reason for the move was obviously that, because we were Jews, we were an unwelcome minority within the Sudetengebild. My father had also been active in helping people escape from Germany before 1938. And he and my grandfather were successful in moving all the goods from their business to Prague, much to the chagrin of the Germans because woollen goods were somewhat scarce and it was the largest wholesaler in that part of Europe. And so, in fact, a very large amount of stuff went to Prague.

MAM Did you, did he lose that when Prague was taken over by the Germans?

WH Yes, all of it was lost.

MAM So, he lost…

WH Well, it was mostly sold by then, so…

MAM Oh, I see.

WH And, in fact, the money in fact supported my grandparents who did not emigrate from Prague.

MAM They stayed on, did they?

WH They stayed and they… My grandfather died in I think it was about 1940, my grandmother went to Theresienstadt to one of the concentration camps and she apparently died there. That's all that I… I have seen the death certificate in Terezin, which I have visited once, twice.

MAM Now, did you, did the family come to the UK from Prague?

WH Yes, my father got out within 36 hours of the occupation of Prague. And the story of his escape is quite interesting because it epitomises some of the problems of the time, in that he got a train from Prague to the UK but he changed trains as soon as he crossed the border in Germany so that when he arrived at the border between Germany and Holland he did not appear to be coming from Prague, but appeared to be coming from within Germany. And so they didn't check those, whereas they checked all the trains from Prague. So he was able to get through quite easily and arrived in England and my mother and I followed him about 5-10 days later.

MAM By the same route?

WH Yes, but we didn't change trains. We had a proper visa and a proper exit… We were not wanted. My father was actually wanted and the Gestapo had actually called at my parents flat within three hours of his departure from Prague.

MAM Cutting it fine!

WH Yes, he did cut it rather fine.

MAM When he arrived in England, and there were quite a lot of immigrants coming over, was he – because this caused great annoyance to these – was he interned in fact?

WH No, he'd had, having… He was a Czech, because he had married my mother and lived in Czechoslovakia. And the internment, they never interned the Czechs, they only interned the Germans. No, the real problem was that he could get no employment. And he did not get employment until about 1941/42, when he was employed as a clerk in what was then called British Thomson Houston, which is now part of GEC in Rugby. And he followed that employment as a clerk for the next two or three years. When the war finished they then, my parents then moved back to London and he went to work in another firm, and that's where he ended up.

MAM Did he work his way up, because he was obviously a very competent businessman in, in Europe? Or…

WH I think he, well, I'm not really, I don't think I… I think he did work his way up, but he obviously never reached the…

MAM Started from a…

WH Yes, started from a very low base.

MAM Presumably, at that stage, you had come from a fairly, well in fact a very well off middle-class family, to having little or no money in this country. Is that right?

WH Yes, that is absolutely correct. I mean, certainly, I think my parents felt it much more than I did. It was, I mean I think that they really felt very much more deprived than I had done.

MAM Is there, just in relation to your later life, is there any family history of science or medicine?

WH As far as I know, the only person who had, who was in medicine was my grandmother's cousin, who was a paediatrician.

MAM That's getting fairly remote!

WH Very remote, yes, but he is the only scientist that I know of.

WH So there's no sort of direct roots?

MAM There's no… No, no, none at all.

MAM Right. You were presumably, having… Your parents and you having joined forces in this country, did you go to a local school? Or…

WH For the period between April and July, I went to a local school called Peterborough Lodge, which is off Finchley Road, which still exists. And then in the…

MAM Is that a state school?

WH It's a small preparatory… No, it was a, it was a private preparatory school. And then, because my parents felt that I should learn more English, I was sent to a summer boarding school, as it were, in a place called Seaford House in Littlehampton. And I was to spend my summer there, and I was obviously there when the war started in September. And my parents and the headmaster decided that I should stay at that school, and that's where I…

MAM That must have been quite a financial burden, if you had...

WH Yes, the school was actually very good in that it gave reduced, I think very greatly reduced, fees to my parents for me. So they were very good about that.

MAM Now, when you arrived in this country, you presumably spoke Czech or German?

WH I spoke… Obviously my, because we lived in the German part of Czechoslovakia, my mother tongue was German. But, I was, my parents wanted me to speak Czech. So I spoke Czech fluently and went, had gone to a Czech school. And in fact, the only other person with whom I could speak Czech was my grandmother and my governess or nurse. But apart from that, none of my family spoke Czech. That was a problem when we came to this country because my parents wanted me to keep on speaking Czech but there was nobody to speak Czech to.

MAM Or teach it!

WH Oh yes. And so I eventually … forgot.

MAM Did you have a terrible struggle. I mean here, here you are, wrenched from home, deposited in a, presumably a – from your point of view, in inverted commas – a 'foreign' country. And you couldn't speak the language.

WH Yes, I don't think it was… Yes, I actually have very little memory of that being a problem. I … I think I can learn to speak foreign languages quite easily and that's why I was able to pick up English quite rapidly. Also being, essentially, in a boarding school, or in a boarding environment, to survive one had to speak English.

MAM That's interesting. It obviously was not a terrible burden.

WH It never really worried me, I don't know why.

MAM Now, you were at the school … and then went on to the, what, public school?

WH Yes, I was at… Seaford House was in Littlehampton; it was evacuated in 1940 to Malvern. And, in the summer – this was at the time of Dunkirk – I went for three weeks or for, I'm sorry, for two months to a small school called Palmer [House] School in Taunton, and then rejoined… We were all scattered and then I rejoined Seaford House in its quarters in Malvern Link. And from, I was there until 1942 and then I went to Rugby School. My parents had, by then, moved from London to Rugby partly because my mother found it impossible to continue to live in London with the bombing. And so they moved to Rugby and my father got a job there. And so I was a day boy in Rugby School, and the… At least I was a dayboy for the first three years. The school, Rugby School had a, the dayboys had a system for free places, or very much reduced places. You had to do reasonably well in common entrance and I got a scholarship so that in fact there were no fees while I was at Rugby.

MAM Did you enjoy Rugby?

WH Yes I did. It was a perfectly reasonable school.

MAM Were you well taught?

WH Yes, I was extremely... Some of the subjects were extremely good. The two subjects that I particularly remember were, I suppose, history and mathematics. Mathematics really, until I took O-Levels, was very good. And I just stopped doing maths because I was doing biology and we didn't go on doing mathematics. But those were the two subjects which were particularly good.

MAM Were you well taught in biology?

WH Biology was a strange subject. I think, at the, towards… In my last two years, we had a superb teacher and I enjoyed it very much indeed. Yes, it was very good. I

ought to say… I'm sorry, I have forgotten chemistry. Chemistry, again for A-Levels, or Higher School Certificates as it was then, was also extremely good.

MAM Now, you moved to take, embrace, at sort of 15, something like that, mathematics, biology and chemistry had now become great interests. Had you already decided then that you wanted to be a doctor, or…

WH I think I had, I think I had decided that I wanted to be a doctor, really by about age 13 or 14. I have no idea why. I think it was probably because I enjoyed, I wanted to do a scientific subject. Even though I much preferred history, I felt that I couldn't do very much with history. And I felt, therefore, science was probably what I wanted to do, and medicine was the obvious choice.

MAM That's interesting. And your parents didn't push you in this way

WH No, not really. No, not at all.

MAM Or the school?

WH No, no. Well, I don't think so. Certainly I had problems… Certainly there were problems getting into medical school at that, in 1947 which was when I was ready to go to...

MAM Because of the ex-servicemen getting a priority?

WH Because of ex-servicemen, yes. And I remember, very distinctly, failing to get entrance to the Royal Free [Medical School].

MAM I didn't even know they took men in 1947.

WH Well, my headmaster told me to apply for the Royal Free because he thought that they might like the odd man!

MAM Oh, I see! But you were turned down?

WH I was turned down because they had a very strange entrance exam where you had to draw something based on instructions. You know, join A to B when B is twice the size of A, or something like that. And I have always been, was always extremely bad at drawing and so, I'm afraid that I failed that!

MAM That's a very curious exam, isn't it? Right, well you applied, what, Royal Free...

WH I applied for Royal Free, for UCH and for St Thomas'.

MAM Those are all London medical schools. Is there a reason for that?

WH I had also applied for Oxford and I did get in to Oxford but I didn't get a scholarship, and I couldn't, there was no way that I could afford to live in Oxford.

MAM So, St Thomas' – you were accepted with a scholarship?

WH There were no fees. I had a Higher... Because of the, because I had sufficiently high grades in the Higher School Certificate, I got one of the state scholarships.

MAM Right.

WH So that, in fact, there were no fees. But it wouldn't have paid for accommodation, all that it paid for was fees and, I think, £50 worth of books.

MAM Which was quite a lot of books in those days.

WH Yes, it was, yes.

MAM Is there any reason for picking St Thomas' over, over the others, or... I mean, you really spent your life in St Thomas'. What attracted you?

WH Well, I think the... Probably one of the reasons was that one of the Rugby had connections to the, to St Thomas', in particular to the then secretary of the medical school who interviewed me. And that enabled me [to] get in.

MAM So you started at St Thomas' and you did the whole of your medical training, pre-clinical and clinical.

WH Yes, yes.

MAM Were they at, all on the hospital site, or was the pre-clinical...

WH No, I was, I had actually... My year, which is 1947, was the first year that, where all the students were back on St Thomas' site and all my pre-clinical and clinical training was done at St Thomas'.

MAM Was that an advantage in having a flavour of clinical medicine whilst pre-clinical?

WH I, I think that in my era there was almost no contact between the clinical side and the pre-clinical side until I did my BSc, because I did a physiology BSc. And there were very close relationships between the medical unit and the department of cardiology and physiology because Henry Barcroft, who was the professor of physiology, was concerned with the physiology of the circulation.

MAM The BSc, if it was like Oxford, was an additional year, was it, from what I call mainstream medicine?

WH Yes, yes.

MAM Yes. Why... What attracted you to doing the BSc?

WH Well, the BSc was… There were two reasons. I think the first reason, probably the more important one, was that it was known that if you got a BSc you would have a house job. And that was of course the aspiration that we all had. The second reason was…

MAM You mean a house job at St Thomas'?

WH At St Thomas', yes. And the second reason, I suppose, was because I really quite enjoyed science and so, and I enjoyed finding out about things, and so I thought that this would offer me the opportunity to find out more. We were, in the, in my time, I remember that only very few of us were allowed to do a BSc. So that it was quite an honour, if you like. There were two who did anatomy and four of us who did a physiology BSc, or, I'm sorry, three of us who did a physiology BSc. And we were joined by one other person from Chelsea.

MAM So this was a bit of an elite group…

WH Yes, it was about the top ten percent of the class.

MAM Did you have a mid-term exam, a sort of anatomy and physiology, before you did your BSc?

WH No, you were chosen to do the BSc on the basis of your Second MB.

MAM Right. And how did you do in that? Or was it a pass or a fail, or…

WH Well, I… No, I got a very high grade, and so that's why I was asked whether I wanted to do the BSc.

MAM Yes, right. So…

WH I think there was a third reason. It also meant that I had a three-month holiday! Which I wouldn't have had this if I had gone straight onto the clinical work.

MAM Oh, I see, before you started the BSc.

WH Yes, yes.

MAM What did you do with that three months?

WH I think I went to earn some money in the north and go farming, which was great fun, and go to France.

MAM The north of England?

WH The north of England and then went, from the money that I earned, I was able to go and have some holiday in the south of France.

MAM I didn't know farmers paid?

WH I ran farming camps, because while I was at Rugby, we were… While I was at Rugby we always went farming in the summer. This was two, between two and four weeks each summer we went on to do some form of farming, like plum picking or, down in Wiltshire, harvesting. This was part of the, helping the war effort. And, as a result of that, I, when I finished school, I applied for a job in a farming camp which were then run in a place called, I think it was Peopleton. And I was accepted in that and I had three months working there. And so that then, thereafter, every summer for the next three years I was able to go and run farming camps and earn, actually, a reasonable sum of money.

MAM Because you were running them?

WH Because I was running them, and…

MAM Now, going back to St Thomas', how did you do in, are you examined in a BSc?

WH Yes.

MAM How did you do?

WH I got an upper-second.

MAM Right, not a first?

WH No, I didn't get a first. Only one, only one of us got a first.

MAM Really?

WH Yes.

MAM Right. Then you went on to clinical work, was that attractive to you? I mean, most medical students are dying to get on to clinical work.

WH Oh yes, I mean, I, I looked forward to that greatly. And the, I had already, because… We were, we'd learnt how to use Van Slyke machines in physiology, and so we were extremely useful to some of the cardiologists and clinicians because, at that time, they were beginning to do cardiac catheterisations. And so we did, as a routine, some of the routine blood gas analyses for them. And so I knew some of the clinicians already, which of course made it very much easier for me during my clinical, during the, certainly the beginning of the clinical period.

MAM Of all the… One is so affected by one's teachers anyway but as a student, of all the clinical firms, which was the one that most attracted you at that age?

WH I think there were really two. The first was medical unit, or medicine, and the second one was paediatrics.

MAM Medical unit being broad-based, general medicine? Or specialised medicine?

WH It was very general. There were essentially… The professor was a man called Sharpey-Schafer[1], who was very much concerned with mechanisms of disease, particularly of the cardiovascular system. The reader was a man called Tony Dornhorst, who was concerned both with the cardiovascular system and the respiratory system. And then there were two senior lecturers: Hugh de Wardener, who was concerned with the kidney, and Basil Miles who was very much more general. So, on the medical unit we got a great deal of, if you like, knowledge about all sorts of conditions. Schafer was interesting in that his first interest had been endocrinology, so that he was a … quite inspiring teacher, once you knew how to deal with him! I remember very distinctly my first ward round, where we went round without a word being spoken by any of us for the hour and a half. And at the end of that we were disgusted and went to talk to the houseman as to how we should… And he said 'Well, what you've got to do is to ask questions.' And so after that, as a firm we always got together beforehand, rehearsed our questions, and we always had a really interesting one and a half hours.

MAM That's interesting for students to plan a campaign.

WH And he always, and he then took us for coffee! So…

MAM Now, you went through your clinical training and you took finals. Presumably you did, yet again, well?

WH Yes, I actually got honours in obstetrics, of all things.

MAM Oh, I see, they gave honours for...

WH They gave you… I'm sorry, it's, I'm sorry, you get… I'm sorry, the term is distinction in one subject and then honours in the lot.

MAM Oh, I see.

WH But I did, apparently, rather well in obstetrics. I am not quite sure why. And I got a reasonable standard in all the other subjects so that I qualified with a distinction.

MAM Did you get a medal for that?

WH No, no I did not. I did not get a medal, no.

MAM Right. So, here you are, you have done your clinical work, you are now qualified. You've presumably got a good base with your BSc for the house jobs fairly high up the list that you want. What did you put in for, and what did you get?

WH Well, I wanted to be a houseman on the medical unit, which is what I got. What we did was six months casualty, as a first job, and then medical unit.

MAM Do you mean everybody did casualty work?

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[1] Sir Edward Sharpey-Schafer.

WH If you got a housejob at St Thomas'... There were, I think it was twelve jobs every six months, and the twelve of us, five, five HPs [house physicians] and five future HSs [house surgeons], we first of all did casualty and then did HP or HS.

MAM That's interesting, isn't it? I don't believe any other medical school did, you know...

WH I'm not sure. We had, I mean, in contrast to current casualty offices, we had a great deal of support, and very clear guidelines as to what we had to do, as well as a very good Sister and nursing staff. So that, I think...

MAM Was there a consultant in charge of casualty?

WH Oh no.

MAM No.

WH No, no, there was... I mean, you had very clear guidance. For example, every case of abdominal pain in a child had to be seen by a more senior person. Essentially, you saw all the mundane things but you also saw all the other, all cases coming in first.

MAM Yes, and then triage them to...

WH Yes.

MAM Right. So, you did casualty, and then you went straight...

WH And then I went to the medical unit.

MAM Now, presumably to be a houseman on the medical unit was a considerable honour?

WH I suppose so, yes. It was the...

MAM I was just going back to the people that you described who were working on it.

WH Well, I think that the... I, I think that at Thomas' there was a very clear distinction between those who wished to become NHS consultants and those who wished to become academics. I think that if you wanted to follow an academic pathway in medicine, you had to get a HP job on the medical unit.

MAM Now when, if you can answer this, when did you decide that academic medicine was the way you wanted to go, rather than NHS?

WH I think it was while I was doing my BSc, because I really enjoyed some of the research that we were doing at that time.

MAM Right. So, you did six months on the medical unit, did you?

WH I did six… Yes, I had, the subject that really interested me was paediatrics at that time and so, in fact, I did six months casualty, six months medical unit and then six months paediatrics.

MAM Right. And then, and then what?

WH And then I went into the Air Force. I'd been very lucky…

MAM Were you one of the people who had deferred while you qualified for medicine?

WH I had been deferred from, because I was doing medicine, yes. But then I was lucky as well in that, theoretically, I should have gone into the Air Force, or into whatever service I chose, immediately after the two house jobs.

MAM Yes.

WH But because I had started to do some work I wanted to do, the children's house job, and so I applied for deferment, and...

MAM Right. So you got an extra six months as well. With your sort of background, one can… The apocryphal story of the services is that you are posted to some remote place with general duties, but in fact did they see your intellectual side, because the RAF did quite a lot of research?

WH Henry Barcroft and Sharpey-Schafer had already spoken to the group captain in charge of the Institute of Aviation Medicine. And it had been envisaged that on entry into the Air Force I would go to the Institute in Farnborough to do some physiology there. In fact, I entered the Air Force during the preparation for Suez, at the time of Suez, and the Air Force said that there was no way that I could go to a, to an Institute when they were too short of people. And so I was posted to a station called Coltishall in Norfolk for three months, at the beginning of my service. While I was there, just before Christmas, I got a phone call to ask if I wanted a job in London other than being a station medical officer. And I said 'What was the job?' And I was told that it was to deal with spirometry, and I didn't know what that meant! And what the Air Force wanted to do with spirometry… So I went to, then I couldn't… They offered me a trip to London for interview, so I went up to London. I discovered that there were three things, three reasons why I had been chosen for this. The first reason was, the most important reason was that I had a car. So that was the most important reason. The second one was that I had a BSc and so I'd done some research and the third reason was that I had done more than two house jobs. So they thought that I knew a little bit more. In fact, when I went, when I went to the Air Ministry for my interview in the morning, they still said it was spirometry but would I please go to see the individual with whom I would be working at the central public health laboratory in Colindale. And I couldn't understand what they were doing about spirometry. And so for lunch I went over to St Thomas' and saw Sharpey-Schafer, because I reckoned that he would know everything. And he shrugged his shoulders and said he hadn't got the faintest clue, but anyway, why don't you go up there and find out? So I went up

there. The person who interviewed me, Corbett McDonald,[2] was absolutely shattered when I said, after my sort of discussion with him I said 'What's it got to do with spirometry?' And then we realised that the wing commander at the, at the Air Ministry didn't know the difference between spirometry and virology! And...

MAM It was virology?

WH It was virology, yes, yes.

MAM And did you take that job at Colindale?

WH Yes, it was... Anything was better than being on a station, really.

MAM Why do you say that?

WH Well, it was a very, I mean it was a non-operational... Well, it was an operational station, but it was very dull. You were stuck out in the middle of nowhere. I did have a day a week at the Norfolk and Norwich hospital, but you really had nobody to talk to at all. The interests of...

MAM Were you single-handed, or...

WH Oh yes. Yes, my commanding officer was out in Suez, or somewhere like that, so...

MAM Did you have nothing of interest happen to you in the wilds of Norfolk?

WH Oh, well yes, I did. I had one thing that I... There was a gale one day, and they had a trawler foundered and they called out a helicopter. And I was asked to be the medical officer to go out with the helicopter because the captain had been washed overboard and had been picked up by another. And so I went out on the helicopter in the middle of a gale and after about an hour's flight, I was dropped at the end of a long piece of rope onto the deck of the trawler with the individual who had been washed overboard. That was a somewhat hair-raising experience because...

MAM Presumably it wasn't as technically adept as it is today with little cranes and cables and things.

WH Well, I believe I was actually, if not the first one of the first, ever, ever to have ever done this. And the, I had not appreciated how difficult it was until afterwards when I looked up because, in fact, the level, the mast was going at 50 or 60 feet because of the waves, but the rope was only 60 or 70 feet. So it was quite a difficult technical feat for the pilot. But it was also somewhat unfortunate for me because I landed astride the rails, so that I was hooked on these rails. And the one thing I knew was that the harness should not be pulled off me downwards because the danger was that I would be, my feet would be hooked into them and I would be yanked up and bash my head. And I had been, well that was one thing that I had been told about. I was trying to push the harness over my head and the crew that were trying to help me

[2] Professor John Corbett McDonald.

were doing it downwards and, of course, we couldn't speak to each other because the noise of the propeller was too great. But eventually it came off. But of course the man I was sent to see was as dead as a doornail. He had actually had a coronary some eight weeks before. This was his first trip and he was obviously very dead, and so… The thing that was interesting was that I was singularly ill-equipped for anything. Nobody had prepared anything of the kit that you would need if you went out to...

MAM Did you take a rudimentary kit?

WH All I… My kit consisted only of my stethoscope, I had nothing else! And so eventually, when I got back, I did in fact prepare a kit so that if ever it happened again there was a medical kit available. Plus, of course the most important thing is warm clothing for the medical officer because one thing was that I was absolutely frozen.

MAM I am beginning to understand why you wanted to go back to London! Now, after that you, you went to Colindale, is that right?

WH Yes, I went to Colindale and was… The, what I was supposed to do was a control, to be in charge of a randomised control trial of an adenovirus vaccine. Adenoviruses had been identified as a cause of disease in recruits in the United States, and a vaccine had just been developed in the States and in the UK by Glaxo. And the vaccine was to be tried on Air Force personnel in this country. The vaccine was in incubators in Glaxo over Christmas. And, unfortunately, the incubator was switched off over Christmas so that, in fact, the safety tests failed, so that in mid-January when we were supposed to start our trial, there was no vaccine available. And, of course, it had to be done in the winter months. So there were no vaccines, there was no vaccine available to do the trial until the following year. And so the question then was what I should do. By then, Suez was over. I had, I was given the choice by the Air Ministry, the first choice was that I could go to Farnborough. But the second choice was at that time, which was about the middle or end of January, I don't know if you remember, Asian flu had been identified in the Far East. And therefore it was likely to come to the UK at some time and Corbett McDonald was very anxious that we should develop a system of surveillance for it. And I thought that it was much more interesting to do that since it was probably a one in a lifetime chance to do that, whereas the physiology I could do whenever I wanted to. And so I decided that I would stay in Colindale, and so as a result of that I stayed in Colindale until the end of my national service.

MAM You did, that was two years, was it not?

WH Yes, I did only two years.

MAM Right, so you now emerge from Colindale. Did you go back to Thomas' or...

WH Yes, I had, one of the… Yes, I went, during my time, since I was essentially stationed in London, the… Both Colindale and the Air Force were anxious that I should maintain my clinical links because they felt that it was quite important to do so. And so even during the 18 or so months, 20 months that I was at Colindale I usually spent one day a week at St Thomas' doing a variety of different things. And so at the end of my national service I went back to St Thomas' and I was very

fortunate in being given a lectureship in the department of medicine, where the professor gave me the opportunity really to explore as to what I wanted to do. My obvious choices were to go on with experimental medicine, and medicine, or to do epidemiology, or to do paediatrics. And that year was, was fashioned that I was able to do all three.

MAM Marvellous.

WH I had clinical responsibilities on the medical unit. I was allowed to work with children. And I, my major project was a study of respiratory disease in patients admitted to hospital so to try and find out something about the causes, so that I was really doing the three, three things together.

MAM Now what decided, because we have reached a point where your career is beginning to crystallise, isn't it? What decided on epidemiology? Correct me if I am wrong, but I think it was not a fashionable discipline – it was hardly developed at that stage.

WH No, it definitely was not a fashionable discipline. I think the major, I think there were a number of reasons. The first was, medicine – I could see I would, I would meet an awful lot of opposition from a variety of different individuals who were probably far better than I was. Paediatrics interested me greatly, but at that time research in paediatrics was very difficult, and the clinicians in charge were not exactly enthusiastic about research on children. Certainly the two senior ones at Thomas' – a man called Forest Smith[3] and a man called Brian Wilson – were very supportive but they were about the only ones. Whereas epidemiology I found intellectually far more interesting, I was far more… It was finding out things that really nobody had found, knew very much about. And there seemed to be a great lacuna in knowledge and therefore I decided that, really, I would prefer to do epidemiology.

MAM You would fill that?

WH Well, I thought that it was at least an opportunity.

MAM Now remind me, the people in epidemiology at that time were Doll, Donald Reid, is that right?

WH Yes.

MAM Jerry Morris…

WH Archie Cochrane.

MAM And Archie Cochrane. They were really the *doyennes* and the… But of all those only one, Donald Reid, was in an academic post. All the others were supported by MRC [Medical Research Council].

WH Yes.

[3] Dr John Forest Smith.

MAM Did anyone suggest to you that this perhaps was not a very wise career move, if you'd like, just from a financial future?

WH Well, certainly Donald Reid was absolutely clear that I was an utter fool to go into epidemiology! He definitely advised me against it because he did not see that I could earn a living on it, and my income would drop considerably. Sharpey-Schafer, the professor of medicine, sent me down to see Archie Cochrane, because he and Archie had been contemporaries at UC. And Archie was far less … dismissive. In fact, he was extremely encouraging about the opportunities that there were in epidemiology. I then went to talk, talk to Bradford Hill. And it was really Bradford Hill who said 'Of course you should do it, if you want to.' And it was he who provided me with the opportunity to do so, of those three.

MAM Now, your, if I am right your experience of epidemiology at this stage was very limited. You knew that you wanted to do it, you had done some work at Colindale on a trial, but in terms of today you were relatively inexperienced. Now how did you plan your career in epidemiology?

WH Well, it, I had done… Remember that I had not done the trial, I had in fact, although I did one later, I had in fact as good a training in infectious disease epidemiology by that time as most CC/DCs(?) have now, because I was actually the epidemiologist to the Air Force. So that, in fact, for eighteen months, I was called to every outbreak of disease in the Air Force and therefore had an opportunity to identify, for example, outbreaks of Q fever. I even went to investigate the possibility of smallpox coming into this country. I also had set up, with Corbett McDonald, a system for the identification of respiratory viruses so that we could identify when influenza first came to this country. Because one of the first questions that we had is 'Why did flu only appear in September, and never before?' There were no known outbreaks of flu in the summer months – they always occurred after the middle of September. And so we actually set up a surveillance system for respiratory infection in the Royal Air Force. And so I had quite a lot of knowledge of infectious disease epidemiology. I actually applied to the MRC for a fellowship to do, for a Rockefeller fellowship to do paediatric research in the United States. And Himsworth, who interviewed me…

MAM He was the secretary of the…

WH He was the secretary of the MRC, interviewed me and told me that, told me I… I'm sorry, I applied for a Rockefeller fellowship to do epidemiology in the United States. And Himsworth told me there was no way I could get one for epidemiology although he would make sure that I got one in paediatrics. I'm sorry, I got it wrong. But I decided to do epidemiology. So he then suggested that I should apply for one of the senior MRC clinical research fellowships, which is what I did, and that enabled me… And I got it, and it enabled me to have two years at the London School of Hygiene where the, I spent one year working with Richard Doll, and then the second year working with Donald Reid, and both years with Bradford Hill as well. And so those, that was really the time that I learnt how to do epidemiology, but I have to emphasise I have never taken a formal course in the subject.

MAM No. Probably why you have done rather well! After those two years at the London School, somewhere I seem to recall you went to the States?

WH Yes. Donald Reid had, by then, negotiated a deal with Johns Hopkins, the School of Hygiene department of epidemiology, whereby he sent one of his people to Johns Hopkins. And Geoffrey Rose, who was similar to, to me in terms of wanting to do epidemiology, had gone the first year. And he had gone for a year to Johns Hopkins and then I went for the second, the following year.

MAM You, it was really about a year over there, wasn't it?

WH Yes, I was just over a year. And it was very, it was far better than a Rockefeller or any of those other fellowships because I was actually paid a salary rather than a fellowship, so that I was extremely well off for the first time in my life!

MAM In your life! Did you have any security to come back to when you went to the States?

WH Yes, yes, certainly I did, because to get the MRC clinical research fellowship, St Thomas' had to guarantee that they would give me a senior lectureship when I'd finished.

MAM That was on return from the States?

WH That was on… No, on finishing the fellowship.

MAM Oh, the two years in the UK.

WH The two years at, in the UK. In fact, they were involved in my, in my going to the States in that they welcomed it and they actually gave me a sum of money for travel. Because they were, they wanted me to…

MAM Delighted to get rid of you!

WH Yes! Well no, they wanted me to see teaching, and so that actually helped me because I was able to travel far more easily…

MAM In the States.

WH …in the States and see other places and learn about their teaching methods. In fact, St Thomas' appointed me as a senior lecturer in epidemiology, or whatever it was called, within three weeks of my arriving in America. I suspect that they wanted, I suspect that they thought that this would give me security, but I also suspect that they realised that I would be offered lots of jobs while I was there, because everybody was. And that was done.

MAM Did they actually call it a senior lectureship in epidemiology? That would have been unusual at the time.

WH It was, it was called a senior lectureship, there was no title to it other than a senior lectureship in the department of medicine. The title of what it was to be was actually not decided until I came back, and that was a meeting between Donald Reid, Sharpey-Schafer, the dean and myself. The dean, Bob Nevin, was married to the daughter of a bishop and had been heavily influenced by John Ryle. And he wanted the term 'social medicine' and he wanted me to be senior lecturer in social medicine. Donald Reid said if I had that title I would never be able to go to the United States again. And Sharpey-Schafer said they were both talking nonsense since after all I was doing epidemiology, I had better be called a clinical epidemiologist. I'm sorry, Donald said 'It should be called epidemiology,' and Sharpey-Schafer said 'That's nonsense, epidemiology is pre-clinical, whatever happens you must have the term clinical in the title.'

MAM Oh, I see.

WH That was because, he said, it wasn't for my sake but for people coming to work with me. I would always have a clinical salary because I was recognised as being a clinician, but anybody else wouldn't. By having the title, clinical epidemiology in the title it was, would be considered a clinical department and therefore offer clinical salaries which at that time were considerably greater.

MAM And the school agreed to that?

WH And the school agreed that it would be called 'clinical epidemiology and social medicine.' And, so it was a compromise.

MAM For America you could just be…

WH Yes. The school actually said that I could have one trip to the States a year in order to keep up my contacts.

MAM That's actually very generous, isn't it.

WH So I certainly had that.

MAM And did you use that?

WH Yes, for the first two or three years I certainly used that.

MAM In, you were a senior lecturer, you came back from the States senior lecturer in the department of medicine, not at the medical unit, but the department of medicine. Did you, apart from being clinical epidemiologist in social medicine, did you have any sort of… I mean were you just floating free or did you have a small section of the department?

WH I had, well I had, the medical… The department of medicine at St Thomas' was essentially two very large labs, open plan laboratories. And I was given one corner on the second floor which was mine. I was given sufficient resources to hire a secretary and a statistical assistant to start off with.

MAM I see, so you did have a bit of infrastructure, which you might not have got today.

WH Yes, yes.

MAM Right. So, that was your starting point, in fact, with a limited amount of support. I assume that the department of medicine didn't make you do clinical teaching or…

WH Yes, I had… Yes, they didn't make me but in fact I had been impressed by some of the ways, I was impressed by the non take-up of teaching of epidemiology as taught normally. And I thought that it was worthwhile trying to link it to clinical medicine, and therefore in fact had a ward round, once a week…

MAM But orientated very much to…

WH …orientated towards epidemiology. But in fact I taught, on the medical unit, patients' epidemiology.

MAM Yes. But you weren't required to be, if you like, a general medicine clinician? That label of epidemiologist was firmly yours.

WH Yes, and I did have a clinic in the chest department, for patients with chronic bronchitis which I was doing research on. And so I looked after a group of about, anything, well eventually it was about 15 individuals with chronic bronchitis as well as the...

MAM So you could genuinely be said to be a card-carrying clinician apart from beginning to introduce epidemiology into Thomas'.

WH Yes, there were three… I think its important, I think that the, I was one of the three senior lecturers. The other ones were – a man called Steve Semple who was concerned with respiratory medicine, and the third one was Paul Naylor who was concerned with dermatology. We were the three senior lecturers on the medical unit who, at that time, did not have consultant status because, if you remember, senior lecturers did not have it at that time. And Sharpey-Schafer used the three of us to change the atmosphere at Thomas' and we were, in fact, the first three senior lecturers who [were] also made consultants in the department of medicine, back in 1963.

MAM So, you got consultant status how soon after you returned from the United States?

WH Within three months, within three or four months.

MAM Oh, very quickly.

WH Yes, very quickly.

MAM And that of course must have been an enormous help.

WH Oh yes, that essentially established me.

MAM I think we'll, sorry, were you going to…?

WH Well, the other strand that's quite important is that while I was in the States, a new clerk of governors was appointed at St Thomas' – Brian McSwiney. And he was very concerned about medical records. And he had gone to a man called Mike Heasman,[4] and Mike Heasman had told Brian that he couldn't help him, he didn't have time, but there was a man on the staff of Thomas' who could probably help him. So when I came back, in fact, I was immediately collared by Brian McSwiney to help in some of the, if you like, medical management.

MAM Could we come to that in the next stage, because that must have been one of the early attempts to bring a bit of sanity and order into medical records, which are traditionally terrible! I think that that is a good point to, to stop at this stage. We have followed your career and got you back in Thomas' with two helpers and consultant status and a renege role in that you were the first epidemiologists on the staff there. And that seems to me to be a good point to stop at this stage and then go on talking about your how your career developed. So can we pick up that at a later stage, and thank you very much indeed.

[4] Mike Heasman was medical officer in the Department of Health and died in March 2000.

Part Two

MAM Walter Holland, we sort of broke at a point that you had come back from the States, you had been given a very unusual senior lectureship, only one of three at St Thomas', with a little support and the title of epidemiology which is unusual in teaching hospitals anyway as your remit. Now, this was minimal support, wasn't it? It was a clerical assistant and someone else. When you went out, you had a huge department and a big, a big unit. Now to get there, you must have decided on a short-term, a medium and a long-term programme if you like, because you were going to presumably need grant support initially and then perhaps unit support later on. So I wonder if you could say, when you came back with this area in an open plan lab and a bit of assistance, what was your game plan, if you like, in the work you wanted to do?

WH Well, I think, I think it's very difficult to know whether what I had planned to do was planned, properly planned or didn't just happen. I think, the first thing I think is to recognise that in the early sixties, our ambition was not to get grants. We didn't know about such things as grants or grantmanship. We expected the university or the medical school to support the work that we were doing, so we never had expectations of any large or small sums of money, apart from buying the odd bit of kit. That was certainly the ethos of St Thomas'. I think that there were, I think that I ... realised that if I was to make any sort of headway at Thomas' that there were really two things that I needed to do. The first was that I needed to remain clinically credible, that I was working on a subject that I could discuss with my colleagues at St Thomas' on, on a reasonably equal footing. And the second was that I should not try to plan for any short-term gains. That I, since I knew that I was there for the next at least seven to ten years, that I should plan a programme of research that would give long-term results rather than just immediate ones. I think that the, if you like, my scientific output in terms of immediate publications was taken care of from the work that I had done with Donald Reid, and Prof Sartwell[5] and others in the United States. And I knew that there would be a number of papers that would come out of that. I also knew...

MAM Would they be joint papers, or...

WH Yes, they were almost all joint, but they were... Also, the most important thing was that I had to do an MD. This was, this was largely at the urging of Donald Reid, who said that I <u>had</u> to have a higher degree, rather than purely my basic qualification. And so a lot of energy was spent in completing an MD, certainly for the first eighteen months or so. I think in terms of the long-term research I wanted to investigate the origins of respiratory disease. The work that I had done in the Air Force originally had demonstrated that a large number of recruits who were discharged from the Air Force with permanent lung damage had had a serious respiratory illness in childhood, and particularly in the first five years of life. This they remembered. This was, if you like, records research and looking through the literature I, there was very little apart from one or two publications that showed that childhood experiences had any importance for the development of chronic respiratory disease. I felt that this was something worth exploring.

[5] Professor Philip Sartwell.

MAM Could I just interrupt, would they not have been screened off on their recruitment medical?

WH No, these were individuals… Remember, by serious respiratory disease I mean events like pneumonia.

MAM Ah, I see.

WH In the first five [years]… They had, they recollected that they had had, that they had been in hospital for pneumonia at age one, two or three…

MAM And then they got another infection in the…

WH And then they got another infection while in the Air Force. People who were invalided – there were, in any one year, somewhere around five hundred individuals at that time in the Air Force who were invalided from the Air Force after their first respiratory illness while in recruit training camp. And although I had no controls, almost all these five hundred had a history of severe respiratory infection in the first five years of life. So I felt that maybe, even though I had no controls, this was a clue. So that was a piece of research that I wanted to do. I felt that if I was going to make epidemiology stick at St Thomas' I needed to do it on a defined population rather than concentrating on case control or other types of in-hospital investigations. And so I sought assistance from outside, for populations which I could study. The second area, the second area that I thought was worthwhile investigating was there had recently been a publication on care of the elderly by Peter Townsend which showed how dreadful the homes were that looked after the elderly. And I thought…

MAM Do you mean residential homes?

WH Residential homes, yes. I thought that it was worthwhile using epidemiological techniques to try to define whether you could show that, objectively by outcome measures rather than merely by process measures. The third area was really the happenstance area, if you like. That was the, when I came back, the clerk of the governors came to me and said that he wanted help with medical records and with computing. And so those were the three areas that I really started off with, doing some work. The first area was I, one of my colleagues on the BSc…

MAM Sorry, BSc…

WH …BSc in physiology was a man called Arthur Cobbold who was not medically qualified. He had done his BSc as a non-medical person, which is quite unusual, and he was a reader in physiology at St Thomas' at the time – this was in the early sixties. And he really, he thought that, in view of his non-medical background, he would never make the top in medicine or in physiology and therefore he went into politics. And he was the son of a clerk and he felt that with his scientific and social background, the party that he would make most headway in was the Conservative Party since he didn't think that he would be exceptional in the Labour Party! So he became a Conservative and he was a very intelligent man, very rapidly rose and became leader of Kent County Council. He, I was very… He and I were partners during our physiology and we always remained friends. He became eventually…

Anyway, he became dean of the medical school in Hobart in Tasmania. But anyway, he reached the top, against his… Anyway, he was leader of the Conservative Party in Bexleyheath, which was… And he chose Heath to be the local MP. But he also had influence at the county headquarters in Maidstone and he introduced me to the county medical officer. The county medical officer was a man called Elliott[6] who was a very, very nice man and very, very good. I believe his colleagues thought he was rather strange but he was very good. And he immediately said that I could use any population that I wanted within Kent. And he then, we agreed that we would do a study of respiratory disease in schoolchildren, using the routine medical examinations which at that time were carried on at five, at nine, at eleven and at fourteen as a measure for collecting research data. He, the medical officers and nurses were responsible for the collection and fieldwork for all the data, for all the measurements, all we had to provide was the, if you like, intellectual input and the analysis. So that was no cost – it didn't cost us anything. The second study that we wanted to…

MAM That study, sorry to interrupt, the, of the Kent schoolchildren [was] of all those four age groups, is that right? The five, the nine, the eleven and fourteen?

WH The design was that we would follow the five year-olds to age fourteen, the seven, or nine year-olds to fourteen, the eleven year-olds to fourteen, and the fourteen year olds.

MAM I see. And follow their respiratory history?

WH And we followed their respiratory history and measured their ventilatory function.

MAM Right.

WH And we used four areas of Kent, two of which were polluted, two of which were unpolluted. One of the polluted areas was well off; one of the polluted areas was poor. One of the unpolluted areas was rich; one of the unpolluted areas was poor. So that we were able, I hoped that one might be able to disentangle the relative contributions of poverty, social class, as well as air-pollution on the development of respiratory disease.

MAM Right. Pollution in those days was atmospheric? Chimneys, or…

WH It was chimneys, SO_2, coal. One of the areas was industrial – Rochester. So it was partly industrial – it was light industry rather than heavy industry. Another area that we chose was Harrow, and the reason that we chose Harrow was it was the, that it was one of the… At that time, as now, there were continual reorganisations of local government, but Harrow was going to continue as a stable local authority, certainly from 1962 till… Certainly not, it would not be reorganised in 1964. Again, the medical officer of health of Harrow was interested in doing a study. And we decided to look at, we again chose six electoral wards. Three of them were polluted, three of them were unpolluted, two of the three unpolluted areas were wealthy, one of the

[6] A Elliott.

unpolluted areas was poor. And similarly amongst the polluted areas, two were well off...

MAM Why did you choose Rochester and Harrow, was this a population base, or...

WH It was mainly because the MOH's [medical officers of health] of those areas were willing to work with us.

MAM What I was thinking was you'd got your groupings that you wanted in Rochester...

WH Oh yes. Yes, yes.

MAM You were just 'belt and braces'?

WH Well no. The Rochester was age five, we... No, Rochester, the Kent study was ages five, eleven and fourteen – school age. In Harrow, it was from birth. And the reason that we chose Harrow for the birth studies was it was in reasonable striking distance of St Thomas', whereas Kent really was not feasible.

MAM So, one schoolchildren or during school life, the other one started at birth.

WH Yes.

MAM Right, and what time-scale were you putting on this study?

WH Each of them was a minimum of five years. Harrow, we did have field workers, four of us did all of the visits. There were two nurses and John Colley and I were the two, if you like, physicians. And the objective was to, to obtain information about the antenatal period, about birth and the first few weeks of life. Within four weeks of the birth of a new born baby, one in six of those babies were also visited by one of the four of us and their ventilatory function was measured at that time. And then we visited them at annual intervals. That was the original plan. The studies didn't exactly work out as we had envisaged! For example, in Harrow, the dirty area actually became the cleanest because against the, in spite of the knowledge of the MOH and myself one of the areas that introduced the Clean Air Act[7] first was the dirtiest area in Harrow. So that, actually, there was some confusion in the result. But in fact there was sufficient evidence to show what we had, what we had suspected, what we had hypothesised.

MAM What was your hypothesis? That early chest infections in children led to later chest infections?

WH Our hypothesis was that children who had respiratory illness in the first year of life were most likely to develop respiratory illness in later years of life. Also the children who had respiratory illness in the first year of life would have lower levels of lung function in each, in each subsequent period of life.

[7] 1956 Clean Air Act.

MAM Right.

WH That we were able to show.

MAM So there is no recovery?

WH No recovery. That is what we actually showed and we were able to show it for the first five years in Harrow and from five to fourteen in Kent. We deliberately chose two separate areas, we deliberately chose four different age groups because I did not envisage that one could follow any group in a normal population for more than five years without horrendous follow-up costs or, or losses. That's why we chose this sort of, if you like, overlapping cohort approach, which worked very well.

MAM And that was all published at the end?

WH That's all been published.

MAM Was that in fact a definitive study in... Apart from your Harrow going and cleaning up their air, was that really taken as a definitive study of the dangers of chest infection in young children?

WH I think yes. The answer is yes. I think that we were the, if not the first, one of the first to show the importance of chest infection in the first few years of life. We were also the first to show the influence of passive smoking. There were two papers published on the effects...

MAM From that study?

WH From Harrow. There were, in fact, two papers published within three weeks of each other, one from Israel and our own, in large quite independently, showing that children, where the parent smoked cigarettes, had more respiratory illnesses than those where the parents did not.

MAM And that was 19...

WH '72.

MAM It took a long time to get through.

WH I'm afraid so!

MAM Right, that was a really quite major study. You were going out to do a major study in the community, now tell me about the others.

WH Well, those were two studies that were essentially to show that one could do community studies that were relevant to clinical problems. The, through my contacts with the Kent county medical officer, we also did a study of old people's homes in Kent. And we, since Kent had some beautiful new, purpose-built homes and some terrible Poor Law institutions, we were able to... And since we were given an assurance that people were not allocated to any one of these by any other criterion

other than place of residence, we thought it was worthwhile studying them. We used…

MAM Oh, place of residence being environmental pollution, yes.

WH We used… Oh, we used three outcome measures – frequency of fracture [of] neck [of] femur, death, and admission to a hospital. We said that if people were in a bad home, they would be more likely to be, to have a fractured neck [of the] femur, or to be admitted to hospital, or to die. We actually showed the opposite of what we had expected – namely that the people in the bad Poor Law homes did better than the people who were in the purpose-built homes. We unfortunately, there were some elderly who, at that time, were already being looked after in their own homes. They did best of all, but there were too few of them so we couldn't really draw any conclusions. Therefore we looked a little more closely as to why we got that result. The answer was actually not surprising. The people, the… At that time, the county council had a higher staffing ratio and more staff, more staff per patient in the old Poor Law homes because they needed more people, rather than in the purpose-built homes. Furthermore, the old Poor Law homes had more bathrooms, and that contributed to the wellbeing of the old people. So we did not show that the old Poor Law homes were worse than the purpose-built ones.

MAM But you were able, through supplementary information at least, to sift out a likely explanation for that unlikely result?

WH Yes, we did that and we also showed the county council how perhaps they might use some outcome measures for looking at the problems, rather than purely looking at process measures.

MAM Was that … the start of an interest in the elderly or…

WH It was certainly a… Yes, it was more, I think it was more, I was more interested in the methodology and the concept that one should be concerned with outcome rather than with process, I'm afraid, which has been with me throughout.

MAM I think a few other people have learnt that in the last, sort of, two years haven't they?

WH Yes, yes.

MAM Yes. Right, now there was a third strain.

WH The third, the third strain was, yes, the hospital itself. The, in my large open plan laboratory, one of the people there was…

MAM Your small bit of the laboratory…

WH Yes, in another corner was a man called Edward DeBono. And I was able to inveigle him…

MAM The cardiologist?

WH No, no, the lateral thinker. And I was able to inveigle him to work with me on the study of medical records, and on computing. And again what... Our hypothesis was that if a computer... One of the problems about medical records was how can you summarise them and how can you get them out to the GP at the end. And we thought that the only way that was really feasible was to use the summary at the end. And so we set up a structure of the data that we felt needed to be recorded in a medical record of the events that had occurred during an in-patient procedure. And we then checked all the individual records of patients who had been discharged over a defined period of time, to see whether the summary contained that information accurately, such things as, for example, cross-infection, complications during hospital stay and so on. And we were able to show that, in fact, the records were pretty bum about showing either what had happened during the patient's stay or what needed to be done afterwards.

MAM Were the records, to use your phrase, bum, or was the summary not a reflection of, of the records? Or both?

WH Almost certain it was, well it was both. What we did was to check things like the temperature charts, things like pathology investigations, things like prescriptions that had been prescribed for patients as well as the nurses' records. And the nurses' records were an extremely good source of, for example, knowing whether the patient had had a urinary tract infection during his stay in hospital. The hospital, the temperature charts told us whether there had been a spike of temperature and things like that. Whether a patient had fallen out of bed or not was hardly ever recorded in medical records, but was recorded in one of the other. At the same time we worked with a computing company to see if the summary could be translated into a computer readable record, and then could be retrieved both in terms of individual items as well as in terms of patients. We showed that, theoretically, that if you wished to use the summary you needed to have a structured summary. And I suppose we were about the same time as the various other people around that time who developed structured medical records, and we developed a structured medical record.

MAM Or a structured medical summary?

WH A structured medical summary, for the record.

MAM Which is probably a more productive approach than the medical record itself?

WH Yes, yes.

MAM Did you get, design a structured summary which was computable, sorry, compatible with computing or not?

WH We didn't, we, we did not think that there was any... We certainly did not find any one summary would have done all patients. We had worked with a variety of different summaries for different types of patients, but we did not get as far as actually trying them out. Part of the reason for that was the failure of the computing systems. We, at that time we thought that we needed to have machine-readable forms. We did not think that you could possibly afford to have people enter them in by keyboard, nor

did we have screens. The computer companies, in spite of their promises, were unable to produce a workable scheme of retrieving forms which were, which had been filled in by writing on…

MAM By hand.

WH By hand. So in spite of their promises, we were unable to do it. So that was, really, abandoned. The other thing that we failed in was really to get proper methods of retrieval of the information. This was, remember, in the early sixties. And although we had systems like x-tab, and bi-med and so on, those were not really suitable for medical records. And I didn't think that merely the regurgitation of what was, what had been written was a useful way of collecting information by computing – it was, obviously it would be more expensive. So we never really got as far as trying out, formally, our structured summaries.

MAM I would have thought the structured summary, say if you produced one for… Say, one for, better than having an all-singing all-dancing, you'd better have one for obstetrics, and one for surgery, and medicine etc. I would have thought that would be very useful. Forget the machine-readable, the, a structured summary would be very useful to the firm and for transmitting to the GP. Could you not persuade the departments to use them?

WH We could get, persuade them to use certain pieces of information – simple things like name, age, date of birth, diagnoses, investigations, and so on. We were unsuccessful in really developing a proper structured summary, I'm afraid. We couldn't get…

MAM What was the view of your… Because after all, to a certain extent, this was a commission from your chairman of the governors, wasn't it? Presumably he asked for a report. What was his reaction to…?

WH … He was actually quite supportive and quite enthusiastic about, about what we had done and shown how, perhaps, certain epidemiological principles might help managers.

MAM But he was prepared to put this on the back burner for a few…

WH Yes, he, he felt that there was insufficient… He felt that the real problem was that there was, since there were no computing systems available for actually putting anything into practice, that it was not worthwhile spending too much money on it. That was really his view. I, I mean I think it's worth saying that that was, that was the first time that I got a research grant, and that was from the Nuffield Provincial Hospitals Trust.

MAM To, for that work?

WH For that work, yes.

MAM Well, they were very keen on hospital systems, you know. If, did you stay interested, or did you come back to the problem of medical records?

WH … I, I think that…

MAM Often you used them epidemiologically, but…

WH Yes. I mean I, I suppose I, I continued to maintain an interest in medical records, but not in terms of research. I mean I became involved in things like the Körner steering group about medical information and things like that, but I never again did any specific research on medical records.

MAM Yes, that's really what I meant, is whether you really came back to that interest.

WH I think that, I was grossly disillusioned by the information that we could obtain from medical records and I have retained my…

MAM Cynicism.

WH …cynicism of that. I think that the next study that we did from, at St Thomas' illustrates that. St Thomas' was then in the business of planning for the future, and they wanted to know how many intensive nursing care beds they would have. And so, I thought that rather than you get it from medical records, which I thought were so bad, we actually used nurses to collect data about patients, and we actually visited wards as a result because of my disillusionment with using medical records.

MAM How did that go down with your medical colleagues?

WH Oh, they were perfectly happy. I mean it was… They, they accepted, they themselves didn't think much of the medical record. And they, they were very supportive of that.

MAM Now, we're back in, still, in the late sixties, are we?

WH Yes.

MAM You must have been one of the first medical research workers – I use that in the broad sense of the term – to have in fact got into rather more than flirting with computing. Did your… And in many ways I would have thought you had a lead advantage in the use of computers in this way. Did you stay with that interest as well?

WH The, certainly we were one of the first medical school departments to <u>have</u> access to large computing, to have access to package programs. We were extremely, I was extremely fortunate…

MAM Were they under your control?

WH Yes. I was extremely fortunate to have a friend, Frank Massey,[8] in California at UCLA, who had developed x-tab and bi-med. He and Dixon[9] had developed those

[8] FR Massey Jnr.
[9] Will Dixon.

programs, and Frank Massey came over and spent some time in my department, so that we had the, we had those programs available to us for the school. Yes, I certainly retained an interest in the, in the use of computing, particularly for research purposes. However, I became utterly disillusioned by the use of computing for clinical purposes. After our, after the work that we'd done on structured medical records and shown it was useless, another group within the hospital decided to try to computerise the medical record. The hospital decided that this was something they would invest in, and so they developed a computer department which was, however, not under my control within the hospital. At least it was at the beginning, but very rapidly I saw that it would take up far too much time, and so I didn't continue with that.

MAM You kept your own facility though?

WH I kept my own facilities for my own research, but did not consider the routine clinical work. I became rapidly disillusioned by the attempts to enter all the garbage that is collected into the computer, which is the way that they were going. And they were quite uninterested in the development of proper methods of retrieval of, of meaningful information. And so I decided that it was not worth my while fighting.

MAM That would have taken a great deal of your time.

WH It would have taken far too much of my time. So I continued to be concerned with academic computing, and I remained in charge of academic computing at St Thomas' until I left.

MAM Now you have got these three strands of work, you must have had more... I am not talking about fieldwork and stuff, but you must have had more staff at this stage. You must have needed, I should have thought, a statistician?

WH Yes, that, the... Certainly the, certainly the... When I became independent in 1964 the...

MAM Let's go back to that then, because that sounds important. Because you were in the medical department and presumably accountable to the professor, is that right?

WH Yes, the professor... I was a unit within the department of medicine. The professor of medicine died, prematurely, and therefore he had to be replaced. St Thomas' decided that they had made a commitment to start a department of clinical epidemiology and social medicine, since certainly one of the candidates for the professorship of medicine was inimical to that development that, in fact, that should be taken out of consideration. Therefore, my unit was made an independent department with me as head of department – as a senior lecturer for the first year and then I was made a reader very shortly after. The creation of the department... They provided me with the ability to have five staff, I think it was. One was a ... a lecturer, a medically qualified person, a clinical lecturer. The second one was a medical social worker, and the third one was a statistician. And then there was a field worker and a secretary.

MAM So we are starting to see the build up of a critical mass, if I could say that.

WH Yes, yes.

MAM Just to get the timing right – when you were made an independent head of department, or head of an independent, how many years after your return from the States was that?

WH Approximately eighteen months.

MAM Oh, as quick as that?

WH Yes, yes.

MAM Now you've got those three strands going. The medical records has run its course, if I can put it that way, computing you're going to keep developing but really as a tool. Your children study presumably is ticking over because that's a five to eight years' affair. What else at this stage, now you, you are independent, did you decide to embark on?

WH Well, I think at that stage, it was suggested that I needed to, to become a little larger and to undertake more, if you like, health service and epidemiological work.

MAM Who suggested that?

WH I think it was a variety of individuals. I mean I think Jerry Morris was one, Bradford Hill was another, Dick Cohen was a third. I think there were a number of people who suggested that I needed to enlarge the, if you like, the direction of work that I was doing. At the same time, the, St Thomas' was very much concerned about rebuilding itself. And they very wisely thought that if they were to rebuild, they, it should be in relationship to the needs of the population. And so…

MAM The local population?

WH The local population. And so they in fact came…

MAM That's unusual for a major teaching hospital.

WH Not unusual for St Thomas', because it had always actually been a local hospital.

MAM That is traditional, is it?

WH Traditional, yes, yes. Going right back, Thomas' has always prided itself on looking after its local population. And they came to, several of the senior people in the hospital talked to me about how this could be done. I am afraid that I chose an entirely epidemiological model in how to do this, in that I thought that if we could measure the prevalence and incidence of a number of indicator conditions within the local community, we could see where there were gaps and where there were deficiencies, which would then need to be filled by St Thomas'. And we chose four conditions to illustrate four different aspects. We chose chronic cardiorespiratory

disease as being a heavy user of in-patient facilities. We chose disability as an indicator of community facilities...

MAM You're talking about physical disability?

WH Yes, physical disability. We chose peptic ulceration as a heavy user of out-patient and radiological facilities and we chose skin disease as a major user of GP and out-patient facilities.

MAM Now those conditions were the ones that were hitting the hospital?

WH No.

MAM Oh, sorry.

WH No, they were conditions where we reckoned that we had tools to measure the prevalence of disease.

MAM Yes, but your, if you like, *prima facie* case for tackling them was based on...

WH Oh yes, we were, they were...

MAM ...what was hitting the hospital.

WH Yes, I mean... Well not only – I mean skin disease, very few of them go to the hospital, but...

MAM So you made inquiries at GPs'?

WH Yes, we looked at what figures there were available and so on, yes. That was when we really decided, when it was, became apparent that we would need more funds and more people. We, well St Thomas' has always been very generous and, and lucky because it has endowment funds and so, in fact, the endowment funds underwrote all the studies. That is, they said if you can't get outside grants to do the studies, we will pay for them. But they expected you to go to somebody outside to try and get the money, and that is what I then did. I first of all approached the MRC, who said this was far too large a study, but was OK, and it needed a unit and they were not going to be in the business of creating a unit in London, that I could go to, that I could do the same work in Cambridge and they would pay for it.

MAM Which clearly... At this stage you didn't want to go to Cambridge. That remark would be in relation to the fact that they already had Jerry Morris in London, didn't they?

WH Yes, yes, and they had Richard Doll.

MAM And Richard Doll. So it might not be unreasonable to say, you know, we'd like, if we are going to have another unit, that's the...

WH Yes, yes.

MAM Right, so the MRC says no.

WH The deputy chief medical officer was a man called Dick Cohen, and he in fact said that I should apply to the Department of Health that was, at that stage, beginning to consider a programme of Health Services research. I had already had some money from what was known as the Operational Research Fund, administered by John Cornish and Max Wilson,[10] for supporting the studies in Kent and in Harrow.

MAM Oh I see, they'd already tipped out some money.

WH They'd already given me enough money to pay for one or two field workers for those studies, so that there was a precedent. And I was encouraged to apply to the department – Bradford Hill served as the external assessor.

MAM That's lucky, since he's a friend of yours.

WH Yes, very lucky indeed! And I got a unit, which was supported by the Department of Health, back in 1967/68.

MAM Now that unit provided what in terms of support?

WH That unit provided me with support for a number of medically qualified people, a number of statisticians, a number of social scientists, as well as the support, secretarial, field work and statistical help.

MAM So this grant, in fact, was bigger than your department.

WH Oh, <u>far</u> bigger. I mean my, the medical school can pay, paid for I think it was five individuals, the unit grant paid for about … twenty or thirty individuals.

MAM Right from the word go?

WH Right from the word go. But I think that the important… The real problem was that at that time there were very few people in the country who were either trained … or willing to work within the medical environment who were not medically qualified, so that we actually had to train all our social scientists and all our medical statisticians ourselves. We were very lucky in that, certainly for statistics, Peter Armitage provided us with the necessary support.

MAM I should add he was a professor at the London School of Hygiene.

WH Yes, I'm sorry, he was, and then Oxford. And he provided, if you like, the moral as well as practical support in that in social science we had the support of Brian Abel-Smith – from the London School of Economics – who certainly was influential in getting, in enabling us to recruit suitable social scientists, economists, to work with us.

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[10] Dr James Maxwell Glover Wilson.

MAM You could see that they want reassurance not to cut themselves off from their discipline, didn't you?

WH Yes, yes.

MAM So you need a broker to say 'It's all right' or make some, some arrangements that they've got a department to go to. Now, here is an enormous dollop of money in, you know... From the start, you obviously couldn't fill all your posts... That unit cannot be given, surely, solely for the community study around St Thomas.' You presumably made other proposals to the department in seeking funding?

WH Yes and no! The, certainly that was the major, that was our major... However, the department asked me to put forward, to consider how I would look at the changes that had then been proposed in health care. There were beginning to be discussions on the building of district general hospitals, and the transfer of in-patient facilities to out-patient general practice facilities. And the department was also concerned about a number of client groups – that is the mentally ill and the elderly. And they said that 'These are our problems, would you be willing to put forward ideas of how to do this?' The practical places where this was to be done were identified in consultation between a number of individuals. And there was a new district general hospital to be built at Frimley. And we were encouraged to discuss with them of how we might investigate whether the new hospital could serve equivalent needs to those of the current pattern of care. There was a neighbouring area of Basingstoke where we also, where there was a very large mental hospital, Park Prewett, and some elderly care facilities where we sort of looked to see whether we could do other studies on these client groups. So our proposed...

MAM But that was before the days of wanting to close down mental institutions, was it? Or was it the start?

WH No, it was the start, and the real question was there were about a... For example, Park Prewett had over a thousand patients in it, and the question was...

MAM What do you do...

WH What do you do with them? What we, I then put forward a series of proposals of both, of studies to be done. I met with the... My answer to your first question was a little too ambiguous, was because, in fact, I put forward proposals for what should be done. However, there was a gap of somewhere around six to nine months between my putting forward the proposals and their agreement, because one senior official from the Department of Health, who had taken part in the discussions, raised the question during the first meeting and said 'But what happens if the findings are that what we're doing is nonsense?' And I said 'Well that is the whole point of science!' And that, actually, that stopped all movement for six months while the Department of Health resolved...

MAM (?)

WH ...resolved the issue as to whether, in fact, their policy could be investigated through scientific means. They accepted – this was before the days of a chief

scientist, but certainly in the days of George Godber and Dick Cohen – and they were able to persuade the lay members of the department that this was perfectly proper.

MAM Now, quite suddenly, from what you have said, not only do you get a large dollop of money, not only do you now get sufficient resources to do the surrounding area and their health needs for planning St Thomas', but a whole raft of what we now call health services research is on the cards. Is that right?

WH Yes. I think that's...

MAM And you've widened enormously.

WH Yes, I think that's perfectly fair. Yes.

MAM So you've got into the game of actually services?

WH Yes, I think there is the, a further area that is important that happened at that time. And that was the appreciation both by the department, as well as the medical school, as well as myself, of the gross deficiency in general practice – in academic general practice. And both the dean and I went to see Sir George Godber at that time to try to see whether we could get support for the inclusion of a general practice research element in the research that we were doing. Sir George agreed to that and we actually, as part of the component of the Health Services Research Unit at that time, we also got a general practice component which was, I think, the first such research component.

MAM Was that extra resources?

WH Yes, it was.

MAM Over and above the unit?

WH Over and above the unit, yes.

MAM Was your interest in looking, sorry, my phrases get... Your interest in general practice, presumably, was that you couldn't look at the totality of care, particularly in the community, unless you had a look at general practice. Would that be fair, or was there another reason?

WH It was, it was a two-fold reason. The first was, I had in my, my letters of appointment, I was responsible for the teaching of general practice. I found that impossible because I couldn't, I had never done general practice apart from a three-week locum, and so I couldn't do that. However, the second reason was more practical. The studies in Lambeth, in particular, were predicated on the supposition that we would be able to follow up and rely on the records of general practitioners in the district.

MAM Wow!

WH I am afraid we were very naïve, but we thought that at least we would know when they died, or when they visited, and things like this. We very rapidly demonstrated that the standards of general practice in Lambeth were so low that there wasn't a hope in hell of finding out anything about any of the individuals that we had examined in our field surveys.

MAM When you say the standards in general practice, you mean of record keeping or of practice itself?

WH Both.

MAM Or both. Yes.

WH They were so appallingly low. This was in the mid-sixties.

MAM Right. So, to get anywhere in Lambeth…

WH To get anywhere we had to…

MAM …you really felt you had to enter...

WH ... we had to enter into general practice.

MAM Did you even at that stage see, although it developed very slowly, the crucial importance of general practice within the NHS?

WH Probably not, probably not. Although it is only fair to say that the dean and a man called Lord Taylor[11] did, because they, even before I had been…

MAM Was he [Lord Taylor] a trustee or something?

WH He was a contemporary of Bob Nevin, the dean, as medical students of Thomas', and he was on the school council. And he and Bob Nevin had persuaded Lambeth Council in the fifties to set aside a part of their building programme for a teaching group practice. That practice was planned in the late fifties and actually came into being in the early seventies!

MAM That's interesting. When you say a teaching general practice, I assume it was going to be used by Thomas'?

WH Yes, yes. It was, it was planned so that it had sufficient space for students.

MAM Yes.

WH It was planned, I mean, oh no, the…

MAM There was foresight, even though it took twenty years.

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[11] Stephen Taylor.

WH Oh yes. Oh yes. They had… I have to be quite clear. It wasn't me, it was they who'd had that idea.

MAM Students presumably went out into practice, did they, in a small amount?

WH The majority of students at Thomas' at that time went out to old Thomas' men scattered all over the country…

MAM Did they do time in general practice?

WH Yes, yes.

MAM Right. So, we have moved in the last half-hour, something like that, from a fairly small caucus, quite certainly into very big resources looking at a large number of problems. Now, how did you juggle these resources? Because you have now got, by my reckoning, approximately thirty people at least. You know, I made it two or three more, but we, we're talking about… No, with the general practice it must be about thirty. Did you get a manager in, in the shape of a reader or senior lecturer or something, or… What are you doing at this stage? Because it's almost an embarrassment of riches, it happened very quickly, and to pull it off… Sorry, I keep going on about achievement, but to pull it off needs very careful control and direction of this team, and it's grown quite suddenly. How did you view 1) how to look after them and 2) how to make sure that each bit of that developed something? I mean you must have kept your finger on the pulse very closely at this stage. How did you make sure that each one contributed to the overall programme?

WH Yes. You are absolutely correct, the, I developed a system of management, which I think worked extremely well. I had a deputy, who was medically… First Ted Bennett,[12] and then he was succeeded by Charles Florey. Secondly, what I did was to have three sections – a medical section, a statistical section and a social science section. By the early seventies, I had a sufficiently well trained social scientist who could act as a head of a social science section and a sufficiently good statistician to act as head of the statistical section. The three heads of section, the three – the doctor, the statistician, the social scientist – were essentially responsible for the quality of the work in each of these disciplines. However, every project that we did was multidisciplinary and also had a project leader. The project leader was not necessarily the head of section, in fact usually wasn't. The project leaders were responsible, in the first instance, always to me but then, as time went on, they became responsible to other individuals. So there were essentially two lines of control. One was concerned with the, if you like, the scientific input and one was the project management.

MAM The early years must have been very hard on you because you haven't got your section heads developed.

WH Yes, yes.

MAM As you get senior people taking over then it's easier to delegate.

[12] Albert Edward Bennett.

WH I think, yes, I mean they were quite, quite difficult, yes. I would not...

MAM One other point before we conclude this bit. You've mentioned the three sections, but there was also another one, which was general practice...

WH Yes, I'm sorry. The general practice section was almost semi-autonomous, under David [Morrell].

MAM Did you have a senior lecturer or some...

WH David was, David Morrell was appointed as a senior lecturer and very rapidly became reader and then professor.

MAM And that was a university practice, was it, in the usual sense?

WH St Thomas' was very wise. We took over a running practice. That had been negotiated originally by Stephen Taylor and Bob Nevin, a man called George Gage and a man called Bill Marson – they were the two straightforward NHS practitioners – and a man called McPherson. McPherson didn't even have an academic degree; all he had was conjoint. We appointed a second senior lecturer, academic as senior lecturer to David, with David [Morrell] so that there were five principals in general practice. St Thomas' gave <u>all</u> of them senior lecturer status, even though one of them didn't even have a degree.

MAM That's a very courageous decision.

WH And they, all three, all their earnings went into the medical school, and the medical school paid them as senior lecturers, so that we had an academic practice from around 19...

MAM With two NHS...

WH With two NHS principals, yes. One of them retired very soon and the other two stayed. One of them is still with the practice now – Bill Marson.

MAM I think we must stop there and next time pick up the development of this force. We have seen it now, we know some of the work that it's doing but it's clearly going to develop in other, other lines, particularly in Health Service research. And perhaps we can pick that up in another session. I think you deserve a rest, thank you very much.