My life changing moment started with the announcement of the successful guys and gals of our batch on 10 July 1965. Being a bit older, I was towards the end of the numbers being announced. A couple of Church of North India sponsored numbers had already been announced as successful candidates and I was beginning to give up hope. But to my surprise, I was one of the fortunate ones, who got a chance to learn what life is all about. It was an ecstatic moment. From that day onwards there was no looking back. Some of the early revelations were that I had to learn and learn fast, including English, as many of my classmates would vouch for. Having come from Hindi speaking school in North India and starting to learn English only in sixth grade, I had a long way to go. No wonder I was given an honor of "the murderer of Queen's language". I guess I don't have the knack of learning languages; to this day I find it difficult to master Queen's English! Ironically, all my Public Health professional life, I had to write reports, papers, and develop health plans. Moreover, I had to master public speaking as part of my profession.

College life was great. Although I did not make the best use of regular classes, I learnt a lot outside. Personal freedom, entrusted to students in CMC, was quite a new experience for me and I found it quite hard to balance my time between studies and extracurricular activities. But the experience of organizing class picnics, working back stage for college plays and running a successful mess in men's hostel, all prepared me for the career I love today, public health. Soon after graduation, Ruby and I married at St. John's Church in Vellore and had a grand reception at Ida Scudder open hall with the CMC family.

Internship was great. I realized that I needed to learn medicine fast as I had wasted a lot of time already. Fortunately, it was not difficult as I was not learning for passing exams but to practice good medicine, with the intension of taking away suffering from my patients. A smile on my patient's face was my reward. There are incidents during internship that are fixed in my mind as if it happened yesterday. During surgical posting, I was asked to look after a very young girl who was admitted to the hospital with extensive burns. I cannot recall if she had already aborted or not, but obviously she was a "case of a teenage unmarried pregnancy with severe burns". She eventually died in spite of all our efforts. It was a sad occasion and left a permanent mark on me. The social evils were just beginning to surface! Another case that I find difficult to forget is of a young man with pancreatic cancer and how he suffered as no levels of morphine relieved his pain. His painful cries could be heard as one approached the ward. The limits of the modern medicine was apparent. Of course, the miracle of a baby being born was the other side of the coin.

Starting to work as a qualified doctor in 1972 in Frances Newton Hospital in Ferozepur, I started with surgery, which I enjoyed very much. I had a great teacher, Dr Mahajan, a CMC Ludhiana trained surgeon, who taught me basic surgical skills. This was a busy surgical hospital and there was ample to learn and master. Within a short time, I was taking a sizable surgical load. A part of the general surgeon's task was

to do all caesarian sections as our very able LMP lady doctor technically could not do sections. This was a crucial part of my training along with other general surgery, as would become clear later.

After three years in Ferozepur, the time had come for a change. One day an English doctor appeared in the hospital looking for a young doctor who could work in a 20 bedded small mission hospital in Manali. I grabbed the opportunity as I could finish my sponsorship bond in any mission hospital in North India. As it happens, I knew Manali from my childhood days. My mother had worked in this very hospital as a nurse in the fifties and my first day at school was there. Manali was paradise and for a young family, it was the best that could have happened to us.

In Manali the English doctor and I had to do everything from pulling out teeth to caesarian sections. There were three trained nurses and all others were locally trained women to do whatever was required at the hospital and there was never a need for concern. Both of us had some experience in surgery but were not qualified surgeons. Apart from 20 inpatient beds, which were always full, we had to see over 100 outpatients a day, in addition to elective and emergency surgery. The power supply was erratic and more often than not we had to do emergency surgery, mainly sections at night, under torch light and foot operated suction, and mostly under spinal anesthesia. When general anesthesia was required, one of our nurses would give open drop ether. We were perfectly assisted by our locally trained women who prepared the table and assisted in surgery. Sterilization of instruments and linen was all done with big pressure cookers on primus kerosene stoves. I do not recall any major post-op infections. If we could not deal with the emergency, the nearest referral point was ten hours' drive down the valley. Even if there was time, people did not have money to take the patients to the referral hospital in Mandi. It was hard work, a busy OPD, elective surgery in between, lab work during lunch break. All the same, it was very satisfying and I was enjoying the attention, both from hospital staff and the patients. As was the tradition at the hospital, everyone could do something in the hospital. Ruby, with some quick training from the two missionary nurses started dispensing the prescriptions written by the two doctors and helping with the mobile x-ray unit to take chest x-rays for our many TB patients and also participated in assisting in the Maternal and Child Health (MCH) clinics.

One morning, after a few weeks of my arrival at the hospital, Valerie, one of the missionary nurses, who used to share gospel in OPD with the waiting patients, mentioned to me that it would be nice if I shared the podium with her as an Indian Christian doctor in preaching. I had noticed that there was a great need for health education but we were all so preoccupied with illness care that no one spent any time in promoting health awareness on issues of concern. I blurted out without thinking that I would rather do health education in OPD than to preach. I was not being anti-Christian but was disappointed with the lack of efforts in the hospital on preventive issues. Valerie's response was that it was perfect, she would preach and I could talk about health issues. I had moved into public health with no return! That very day, after Valarie had finished her part, I talked to the waiting crowd about child care and under nutrition. We started under-fives growth monitoring and MCH clinic, TB and antenatal clinics for the first time.

Being on call every second day, the two doctors took a day off from hospital work weekly, whilst the other managed the hospital. Another local missionary lady, who used to go into roadside labor camps towards Rotang Pass to help, wanted me to join her and give some medical care to the Nepali and Tibetan road construction workers. So my free day was spent in going with her treating some ill patients on the roadside. These people lived in tents in miserable conditions at an altitude of over 2000M. Infants died with pneumonia and diarrhea and those who made it to the second year, were already undernourished and wasted. This went on for some time but I soon realized that this approach was not something that would make a difference.

I had read about Jamkhehd Rural Development Project, under the leadership of the Aroles (another CMC alumni in public health). The project had been successfully training traditional birth attendants into village health workers (VHWs) for some time, with fantastic results. We discussed the possibility of starting this kind of work in our hospital. Soon my free day turned into a hiking trip with a rucksack on my back with few essential medicines and off I went to some far off villages to see if I could convince villages to let me train VHWs. I started to visit five villages on a regular basis and five VHWs were identified in consultation with the village heads. The VHWs came to hospital once a week for training and I visited them weekly in one of the villages where they all assembled for training and treating any minor illnesses in the villages. As MCH issues were most important, the training was concentrated around this work. Of course this was very rough and inexperienced solitary work on my part but it went on for all the time that I was in Manali and it continued and developed further after my departure.

In 1976, after presenting our village health workers' program in Manali along with Dr Arole and others at the National Symposium on Alternative Approaches to Healthcare organized by Indian Council of Medical Research[1] in Hyderabad, I was approached by Voluntary Health Association of India (VHAI) and convinced to come to Landour Community Hospital, Mussoorie to start a new public health outreach program. I visited Jamkhed to learn from Aroles' experience and came back to start the work funded by Oxfam at the hospital. We were a team of five and spent Tuesday to Thursdays in the villages training traditional birth attenders (*Dais*) as VHWs. Mondays and Fridays were spent in conducting MCH clinics in the hospital and in the city's Lions Club, where we concentrated on growth monitoring among under-fives.

It is in this project that I realized how intelligent some of the village folks are. Uma Devi, one of our VHWs in her late forties, had taught herself to read and write without having been to school. She told me that she used to sit with children returning home after school and asked them to teach her Hindi. We used her skill to read from the VHAI booklet on child care to the other VHWs and to explain in local dialect. I asked the traditional birth attendants to describe their experience of the most difficult delivery they had encountered. Again, Uma Devi told us that one night she was called to see a women with a hand prolapse and after some thinking, she asked the family to warm some oil and bring it to her. She smeared the oil on the hand of the baby and gently pushed it back into the uterus. Then she manually turned the baby in position per abdomen and allowed the women to deliver normally. Those of you who remember Mudaliar's text book of Obstetrics of our times, would recall this method described in the book!

Mussoorrie being a hill station with a number of schools, we started a health education program for 14-15 year olds as they planned to finish matriculation. I had always thought that schools teach everything else but on fundamental health issues. We started this with the intention of providing basic health education to the youngsters, many of whom, especially girls, will get married soon and have their own children. We gave them information on breast feeding, childcare, immunisations and the nutritional needs of under-fives. Prevention of TB and leprosy, drug abuse including tobacco and alcohol and first aid were some of the other subjects taught in a series of ten lectures at weekly intervals. After several months of completion of the programme, children were resurveyed and the results showed that all participants' individual scores were higher than 50% in retention of knowledge compared to no one attaining 50% in the initial survey, except one International School[2].

Time was flying past and by 1978, I had not acquired postgraduate qualifications. Fortunately, I was successful in getting a scholarship and off we went to Liverpool School of Tropical Medicine on study leave for one year. The Mussoorie project was left in the hands of Dr Ranjit Ratnaike, one of my seniors from

[1] Kaul, S A. Trial of village health workers in a remote area of Himachal Pradesh. In Alternative Approaches to Health Care. Indian Council of Medical Research. New Delhi. 1976.
[2] Kaul S A and O'Neill P G. Health education in Mussoorie schools. Journal of Christian Medical Association of India. March 1978

CMC, to be maintained and continued until my return. Ruby and I had been working all along in public health and it was just right for her to obtain qualifications in public health as well. I requested three months extension of my study leave from the hospital management in Mussoorie so that she could complete her Certificate in Tropical Medicine and Community Health, but the extension was denied and I was asked to return immediately or submit my resignation. My resignation set us off for the lookout for a job and we landed in Zambia in April 1980.

Zambia was hard for a family with small children in early eighties. Lawlessness, no proper schooling and public health job defined to sign paperwork left us desperate to get out. Before going to Zambia I was offered a job in King Saud University to teach community medicine, which I had ignored. Now desperate for anything, we managed to get out of Zambia and took up Lecturer post in Riyadh and Ruby worked in the records department at the University Hospital. It was a rewarding experience as all teaching was in English. I opted to teach medical statistics in addition to Epidemiology to undergraduates. This was with the intention to polish my statistical skills which would come very handy in future. Apart from some restrictions for women to move around, Saudi Arabia was fun and we enjoyed working there for the next four years.

And now desperate to complete my post graduate studies, I managed to land myself with a Medical Research Council position in general practice research in South Wales, UK. This position was under the able guidance of a general practitioner Julian Tudor Hart, famous among other things, for his article on The Inverse Care Law.[3] I was to lead the research team in a feasibility study on the use of Low dose anticoagulants in primary prevention of ischemic heart disease in high risk men with cardiovascular risk factors in a small coal mining valley in South Wales. The study provided me not only with a valuable research experience but also fine dissertation material for my membership exam along with the training of VHWs in Jaunpur Block in India (Mussoorie Work), a perfect combination of developing and developed country experience in public health.

Alongside the research work, I also worked as a general practitioner in the practice. One day Julian asked me if I could do vasectomies. My response was, “Yes, even on a kitchen table!” It so happened that there were a number of people on NHS waiting list for vasectomies, and surgeons in Swansea (the Authority’s center for referral care) wanted people to come to them as private patients so that they could make good money. My condition was, as I was not going to be there for long, I would do it if one of his partners would learn the skill to carry out the operation and make the service sustainable after I had left. He liked the idea and I started to train his partner. In less than a year we had cleared all the waiting list for vasectomies and the practice was doing vasectomies independently.

In 1988 after completing MFPHM, I was appointed as a consultant in Public Health in the National Health Service (NHS) in South Wales. This was the best time to work as public health physician in the UK as the specialty was constantly developing its role in the NHS. Four years in two different health authorities as public health consultant, I realized that there were new grounds to be ploughed. Information technology was developing fast and turning data into information was power. A significant amount of paper information was made available to each health authority every year from the then Office of the Population and Censes Department (OPCS), but was rarely used and sat in steel cabinets. The UK has vital statistic records dating back to 1837 and many other stats not going as far back. Request was made to OPCS to obtain electronic data for Wales for past ten year and it was granted. Using skills in SPSS I analyzed the data; trends were produced for then West Glamorgan Health Authority (Swansea) in still births, low birth weights, perinatal and infant mortality and teen pregnancies for the first time described in this manner.

[3] Hart JT. The Inverse Care Law. *Lancet* 1971; i: 405-12.

For adults, the trends in cardiovascular deaths, various cancers, suicides, accidental deaths and other causes of deaths were described and charts produced. As all records were post coded, with the use of GIS we could show small areas of deprivation with high rates of mortality at younger ages. Later we repeated the exercise at all Wales' level[4]. It was a huge success and provided Welsh districts with information to develop their own plans to reduce preventable mortalities through specific public health interventions.

Morbidity data were still hard to come by. However, most general practices were starting to use computers and had their age sex registers computerized in the practice populations. I saw the opportunity to use this data. With NHS Wales funding the project and through discussions with the four major software suppliers (over 90% computerized practices were using these four systems), an agreement was made that the software suppliers will provide the General Practice Morbidity Database project (GPMD) with the raw data in flat files. We again analyzed the data by practice, further disaggregating by age and sex, and by different geographical areas to produce trends in morbidity.[5] The Chief Medical Officer of Wales, recognizing the importance of it, hurriedly appointed me under her wings as regional specialist in public health, exclusively looking after Public Health Common Dataset and General Practice Morbidity Database projects. Later, two of my research officers did their MPH on these projects and one doctor in Public Health obtained her membership in the Faculty of Public Health from the GPMD project; and for me, an award of the Fellowship in the Faculty. The whole experience was most rewarding and gratifying.

Meantime, Ruby had finished her Master's in public Health and PhD from Welsh National School of Medicine and Swansea University and was working as research officer in Mid Glamorgan Health Authority. She found working for NHS less inspiring and applied for a teaching job in the medical school in the University of Papua New Guinea, and was soon appointed as a Lecturer. In 1993, she packed her bags and left for Papua New Guinea. Whilst visiting her, I applied for a WHO/UNFPA position there and after two years of perseverance succeeded in getting a chief technical adviser's post in the Regional Office for the Western Pacific to work in Papua New Guinea. Maternal mortality and other indicators for health in PNG were dismal and I was asked to concentrate on strengthening reproductive health services in PNG. Soon after taking up the position, I gathered the obstetricians, epidemiologists, midwives and other health center workers together and collectively we developed protocols for ten most common complications of pregnancy to be used in the health facilities. The Health Centres were not staffed or equipped for managing pregnancy complications. The purpose of these protocols was to stabilize the women with complication of pregnancy and safely transfer them to the provincial hospital where they could be managed. The system was a major success and to this day PNG uses these protocols to manage complications of pregnancy in the labour rooms at peripheral health facilities. The system was later adopted in Laos as well.

WHO bureaucracy caught up with me and after four years of most enjoyable experience in Public Health in PNG, I moved on to work with International SOS as a public health adviser to the company. I was appointed in Papua (Indonesia) to work in Freeport-McMoRan, the largest gold mine and the third largest copper mine in the world with over 19,000 workers. Int. SOS was responsible for three hospitals and a large Public Health programme. The public health department was responsible for managing five Health Centres serving over 56,000 resettled population and health and safety division of the mine. The actual number of resettlers from the site of mining at an altitude of over 4000 meters were few. However, over thirty years of mining, resettlers had claimed, in the true tradition of Papua's "One-Talk system", kinship to original settlers as first, seconds or nth cousin relationship for rights of claim from the company.

[4] Colin Thomas C J and Kaul S A. The relationship between health and social conditions in Wales: Preliminary Findings. Working Paper 2. SERN. Department of Geography, University College of Swansea. Wales. UK. July 1988.

[5] Evans J, Rogers C and Kaul S. The General Practice Morbidity Database Project Wales - a methodology for primary care data extraction. Medical Informatics. An international journal of information processing in health care. 1997 Volume 22 No. 2 p 191-202

When I joined the health centers, like any other, were simply dishing out illness care and referrals of serious cases to hospitals. I had yet another opportunity to set up a proper primary health care and its implementation to this population.

The Freeport public health department also had TB and sexual health programmes. TB patients were properly diagnosed and followed through for the compliance of the treatment under the national TB control programme. The sexual health programme was quite unique. As is the common practice among big projects, the town brothels (with over 500 sex workers) flourished with the clients mainly from Freeport mine workers. The public health department held three weekly clinics in these brothels. All sex workers were checked at monthly intervals for sexually transmitted infections (STIs) and treated. Advice on 100% condom use was promoted. Monitoring surveys overtime showed increase in the use of condoms by sex workers and marked reduction of the prevalence of STIs among them and HIV status remained constant below 5%. Providing health education to both sex workers and their clients was a major commitment. Mineworkers were made aware of the consequences of STIs, especially HIV/AIDS and advised accordingly. The World Aids Day on 1st December was always a big public celebration and education on STIs and their prevention. We started a weekly broadcasting through company's internet system on selected health topics. Before I arrived at the scene, there was not a single health education poster anywhere in the mining sites and offices. Soon the Public Health department's health promotion section started producing "In House" posters appropriate for local use. Over 70 KM extent of mining operations, from local Airport to the top of the mountain where mining took place, were covered with health education billboards within a year. HIV/AIDS and MCH issues were given importance. Money was not an issue as the company recognizing its corporate social responsibility towards the communities, made required funds available.

In 2005 International SOS asked me to move to Laos to assist with the Nam Theun 2 Hydroelectric project. As Manager for the health program, we revised the Health Impact Assessment and Public Health Action Plan (PHAP) to the World Bank's satisfaction and approval and then implemented the PHAP in the project impacted four districts. This was an opportunity to use my life's experience in Public Health in a defined population as an experiment in corporate social responsibility. Instead of just building health facilities and providing vehicles and free medicine, we went on to assist local health authorities in implementing ailing national health programs. The work was centered around helping local government health facilities to provide full primary health care to the whole population, irrespective of being project impacted or not. Time spent in Laos from 2005-2013 has been rewarding. Comparisons between the initial and the final health surveys in the resettled population have shown remarkable results. The infant mortality more than halved, fertility rate, stunting and under nutrition has shown significant improvement over time. Communities have clean water for their use and every house has a toilet. Worm infestation has gone down significantly improving nutritional status of the whole population, especially the under-fives. We helped the local health centers to collect births and deaths and other MCH information routinely and computerized it. The database now provides live information on all primary care interventions and provides accurate information on health indicators. At the time of final health survey in 2013, the project area had already achieved the Millennium Development Goals ahead of 2015. In addition to the project area, two other provinces have adopted the same system.

More recently, I spent a short time in India working with the Diocese of Amritsar (DOA) health institutions and in the National Institute of Health and Family Welfare (NIHFW) in Delhi. The work intended with DOA was to take mission hospitals a bit further into promoting preventive services. I worked with a number of diocesan hospitals trying to convince them to avoid duplication by doing VHWs training programs and look closer to home and see if we can add preventive services along with good clinical services that are already being provided. Our hospitals do a good job in delivering babies but do not follow them in

preventing under nutrition when they are one year old and after, through growth monitoring clinics. We treat every day diabetes, cardiovascular problems and other non-infectious chronic diseases, without providing health check clinics to work on the risk factors. Private hospitals in India are increasingly getting engaged in this type of work and not only providing much needed service but making good money from the service. I tried to convince hospital authorities to add these services but failed.

Joining NIHFW was another opportunity to spend some worthwhile time in India. The EU funded programme was to help the Institute in developing distance learning programs. The attitude of senior professors and teachers at the institute was that they knew what to do and were not open to any suggestions. I had to cut short that assignment as I found myself not needed there.

Later part of 2013, I was asked to join my present position as Public Health Specialist in the development of Health Impact Assessment and Public Health Action Plan for the world's largest water transfer project in Lesotho. I have been given this task to replicate Laos's success here in Lesotho. I hope that we will be able to achieve it.

Ruby lives a retired life in Noosa, Queensland, Australia. Priya is a successful psychologist working in Gisbourne, Victoria and Mitran is a freelance photographer. He and his German wife have two beautiful daughters and are settled in Leiden, Netherlands.

Public health is inspiring and rewarding; and has a big role to play in the improvement of the health of the people we deal with each day. As in surgery and clinical medicine, the rewards of public health interventions are not immediate, but given some time to implementing established preventive measures, one can see incredible gains in the health of the populations. I hope younger readers will be inspired by my personal experiences in Public Health.

Surinder Kaul

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