

## Technology in Medicine

SOMETHING is tearing apart the noble mask of medical practice. A gigantic force is shaking its traditional independent status. Some say that machines are the culprits—they have made medicine invasive, costly and impersonal. Some are concerned about new the organisational set-up—bureaucracy is the devil, large size is wasteful, so 'small is beautiful'. Undoubtedly, the introduction of new machines in medical care has not only made medical technology visible, but also made it an independent issue for discussion and for evolving alternative practices. They have also widened the scope of discussion by naturally making it open to people other than doctors. Ironically, while monopoly capital has introduced them into medical care, they have made a dent in the monopoly of doctors to discuss medicine.

Medical technology, to use a broad definition includes drugs, devices and medical and surgical procedures used in medical care, and organisational and support system within which such care is provided. This definition is applicable to all systems of medicine. We, however, restrict ourselves to allopathy. For allopathy is the dominant medical system internationally, it has an organic link with capitalism—the dominant socio-economic system—and above all, we have insufficient information to correctly understand the role and nature of technology and emerging trends of technological change in the context of capitalist development in other systems of medicine.

While discussing new and recently-developed medical technology—for that matter all such technologies—we need to recognise that most of them are not developed by the application of advances in the basic sciences in one field. New medical technologies are not only founded on the developments in the basic sciences in medicine alone, but also on the combination of this with developments technologies in other fields. For example, the cardiac pacemaker was developed by using advances made in solid state physics, developments in vacuum technology, electrical engineering as well as in anatomy and cardiac physiology, and surgical techniques and development of silicon rubber and epoxy resins.

Though on the face of it a technology seems to develop out of the accumulation of scientific and technological knowledge and skill, this accumulation is encouraged, discouraged and selectively manipulated in the socio-economic context. Further, the diffusion for widespread use of any technology is determined by these forces. In the case of medicine, the flow of capital into the medical service sector and the concomitant organisational maturity of medical care system provided an objective basis for widespread diffusion of new medical technology in the advanced capitalist countries.

### Penetration of Capital into Medical Services

Medical care is predominantly organised as (1) individual and group medical practice which has its roots in the petty-commodity production in which the physician owned his/her skills as well as essential tools, (2) organised hospital-based

medical care which has traditionally been charitable, state-financed or owned, or non-profit voluntary. Historically, though health care particularly, its public health component was recognised as an essential economic function as early as the mid-nineteenth century, the penetration of private capital and consequent capitalist industrialisation of technological components of medical care took place much later. This was due to the specific place of the service sector in the capitalist economy. Services of all kinds, including medical service, rendered as a commodity or otherwise, are essential to capital to revitalise, reproduce and even improve labour power. But they do not in the process of actual rendering of services, produce surplus value. Capital on the other hand, flows naturally into the surplus-value producing sectors of economy.

Therefore, the initial penetration of capital into the medical service began into those technological components of medical care—notably the tools of the physician—which could be converted into commodities containing surplus value. Thus, the physician who was a petty commodity producer gathering herbs, chemical, etc, and compounding them into medicine to dispense it to the patient, was gradually alienated from these tools. The doctor became dependent on the supply of that tool (medicine) from capital. The doctor no longer remained an independent petty commodity producer, although he/she did retain the character of the individual private medical practitioner. The latter characteristic was not radically affected because the doctor retained the exclusive knowledge and skill of prescribing drugs produced by the industry. The doctor still remains indispensable for sale of (and realisation of the use value-of) the commodity drug. Therefore, doctors are the most important target in capital's market strategy. For this purpose it is necessary that the doctors identify with the interest of capital. The common method used for such purpose by the industry is ideological, combined with material incentives. In the situation of intense competition, the industry consciously promotes irrational use of drugs and the use of useless drugs. This interest of the industry is well-reflected in the doctors irrational prescription practices. Indeed, once the doctor became the last executor of capital's market strategy, irrationalism was bound to dominate medical practice.

The rise of monopoly capitalism and the changes in its dynamic during and after the second world has provided objective basis for further technological changes in medical practice. In late monopoly capitalism there is a continuing compulsion to increase the rate of surplus value, to valorise the excess capital by investment in any possible area (such as armament, services, etc) and to lower cost of production through mechanisation and automation. In this situation, one of the best ways to preserve monopoly market is to accelerate technological innovation and consequent rapid introduction of new products in the market. This creates a situation of permanent technological and product renewal. This also creates a permanent need to dispose of obsolete technology and the product to the less developed countries (hence the slogan of technological transfer, albeit in neo-

colonial ways). It is this characteristic that is primarily at the root of continuous introduction of new drugs, devices and hosts of other things, irrespective of actual medical needs and priorities of the people, into medical practice.

Mirror effects of these developments are also seen in a third world country like India, due to neocolonialism as well as due to the needs of indigenous capital. The economic backwardness of the country puts certain limits on the extent to which capital can penetrate medical services sector and new medical technologies can be brought to widespread use. However, these limits are not absolute. Nevertheless, the forceful entry of new medical technologies has created forces which are transforming individual medical practice as well as hospital care much more extensively than the proportionate economic value of such technologies.

### Recent Technological Changes

Since the late 1960s after making its initial impact on the production of drugs, the logic of late monopoly capitalism started affecting other medical technologies. Within a decade it unleashed a massive assault on medical care with a plethora of new diagnostic and treatment devices. Not only have new technologies entirely taken over the essential functions of doctor in a medical care but aids him/her in performing those functions. (They also create new functions.) In the process each function becomes a specialised one as it needs the aid of a special, complicated and costly machine. Thus a rapid division of diagnostic and treatment functions takes place. These changes in medical care also accelerated certain changes in the way medical care is traditionally organised.

In the sector of individual private medical practice many new private practitioners with technological speciality were added. Indeed we have come a long way from X-ray clinics to CT scan centres. The proliferation of diagnostic centres run by individuals, institutions or companies has lengthened the route which the patient travels in order to get diagnosed and treated.

The accelerated fragmentation of functions has further impersonalised medical care. The business nexus of generalists, specialists (medical), specialists (equipment), diagnosticians and what not have expanded the naked play of market forces (with the attendant corruption and irrational medical practices) in medical care. No wonder all these escalate the cost of medical care.

In hospital-based medical care too far-reaching changes have unfolded. Fragmentation has increased the number of departments. New equipment and procedures have led to a new division of labour inside the hospital. The need to coordinate all such activities has given rise to such bureaucratisation that even many old styled but business-oriented doctors have started feeling uncomfortable. The costly requirements like controlled environment for equipment, posh premises to match the high cost of services, etc, make hospitals a huge investment. Thus the gradual conversion of traditional non-profit and charitable hospitals to for-profit and fee-for services hospitals is inevitable, though this is at different stages and in countries where state services are there, it is generating powerful forces for privatisation.

These changes are also accompanied by another signifi-

cant development. Capital for the first time showed interest in going beyond the production of drugs and devices to organising hospital based medical care in line with industry on a large scale. Investor owned or corporate hospitals have concerned significant proportion of hospitals in developed capitalist countries while in India the process has barely started with the Apollo hospital in Madras.

With this, discussion on proletarianisation of doctors is no longer academic. Doctors seeking employment is not new. What is new is the logic of corporate for-profit hospitals, absolute control by the capitalists, continuous introduction of new technologies, inevitable need to use them at high price to realise investment and earn profit etc. That is profit is no longer incidental or one of the parts of a doctor's medical practice. Medical practice is now incidental to the organisation primarily devoted to profit.

### Social and Ethical Issues

The production and sale of irrational and useless drugs with doctor's prescription over-the-counter and even selling prescription drugs directly by the chemists are well-known to us. We do not elaborate on it here as it forms a separate subject for discussion. However, it should be noted that by the time new equipment based medical technology made its entry, the doctors had sufficiently encouraged the technology-culture (capsule and injection) amongst people or section of people that matter for it to build further upon.

Since the new technologies are very expensive and in short supply, it has to be rationed. In the market economy, this rationing does not take place according to need but according to the capacity to pay. This is not a new ethical issue. But earlier it did not confront the doctors so blatantly as it does today with new technologies.

The doctor is also confronted with legal problems, more of them where medical insurance has taken roots. Withholding a diagnostic procedure or delaying treatment with certain equipment invite a spate of litigations in many advanced capitalist countries. Doctors pay huge sums as premium to insurance companies to protect themselves from bankruptcy. In the US they have now even agreed to allow their colleagues to review or assess their competence. This has accelerated the production of literature on medical ethics to equip them with enough knowledge of law and pitfalls in practice. In our country this aspect is yet to become major issue.

Despite the high cost and legal issues, the fast use of such technologies is an absolute need for capital. To generate quick demand from the people, more elaborate methods are used than just enlisting doctors, support. So it goes beyond the doctor, directly informing people. This is one of the reasons why in our country import of a nuclear magnetic imaging makes front page news. In this way unnecessary use of such equipment is systematically organised.

As said earlier, technological obsolescence being a major problem, the traditional methods of assessing technology before its introduction are waived. Most of these new technologies are accepted on the basis of description of their excellence, but not tested through careful trials. Neither com-

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But none of this is relevant to whether Whitehead is 'unfit' to raise her child. What is relevant is that she gave birth to the child and began raising that child.

### What are Society's Responsibilities?

In the struggle to end women's oppression and guarantee children the best care possible, the working class needs a twofold approach. It needs to fight for women's right to enter the work force and all arenas of society without any restrictions or discriminatory treatment because of their child-bearing capacities. It also needs to fight for the government to carry out its responsibility to provide care for children and all other dependent human beings, instead of allowing the burden for this care to fall on individuals, especially on women.

The government should provide lowcost child care from infancy on up. It should guarantee an education, medical care, decent housing, and recreation for all the young, aimed at helping them develop into independent human beings. All laws or practices that discriminate against children—based on class, race, sex, handicaps, or 'legitimacy'—should be eliminated.

The working class must also challenge any disqualification of women based on their having or not having children.

This being with championing the right of women themselves to freely decide when and if to bear children. It means

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puterised tomography nor nuclear imaging are tested in the same way as drugs are required to.

Not only instruments but many medical and surgical procedures are also introduced without adequate trials. For instance results of the systematic trial of amniocentesis were published only last year after its extensive use for over a decade. The chorion villi biopsy is already extensively used without any scientific trial. Because of such a situation many innovations like gastric freezing, high concentration oxygen for neonates, the use of hyperbaric oxygen in intensive care, insulin coma for the treatment of schizophreniae etc were introduced without evaluation, used and subsequently abandoned after they were proved ineffective or unsafe.

Amniocentesis and chorion villi biopsy remind us their large scale misuse for female foeticide in India. In fact some of the technological innovation appear explicitly geared towards use of sexist and racist cultural practices to gain fast currency and early returns on the resultant technology.

Every country that is attempting to meet the genuine needs of people, has to take crucial decision about selecting appropriate technologies as an alternative to the costly, rendering services to few and profit oriented technologies. In the field, activists are also required to select and develop alternative technologies to provide immediate relief to people. Therefore, in addition to the technology being a political question, it is also a direct practical problem in political practice. This has led many to experiment with various alternative methods of medical care using simple but effective technology and develop models to prove their feasibility. This question is also linked with proliferation of the non-

the right to safe, legal abortion and birth control, as well as sex education in the public schools. It means protection of women from forced sterilisation.

Women's physical ability to bear children should not be used as a pretext to super-exploit them on the job paying them less than men, excluding them from certain jobs, or denying them employment if they are pregnant or already have children. The working class should demand equal pay for equal work and affirmative action so women can achieve full equality in employment and education.

Workers should demand full maternity benefits for women, including the right to return to the same job—without loss of accrued seniority time—after the birth of a child. Absence from work because of pregnancy should be treated exactly like other contractual situations related to leaves from work.

For women who have children, the working class should demand all the state aid they need to care for them. And it should defend their right to have the courts compel men who walk away from shared responsibility for children to pay child support.

The struggle for these demands is part of the fight for a different type of government, one that acts in the interests of workers and farmers, not a handful of capitalist families. By bringing such a government to power, working people will lay the basis for further measures to provide care for children and to achieve equality for women

government organisations and needs detailed discussion.

Such experiments in alternative technologies are not limited to using different physical tools but encompass the way medical care is delivered and attempts to humanise it.

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