

THE *LANCET* ON THE TELEPHONE 1876-1975

by

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IT HAS BEEN a hundred years since Alexander Graham Bell succeeded in transmitting speech electrically. As is well known, the first words spoken by Bell on the telephone on 10 March 1876 were: "Mr. Watson, come here, I want you." What is not generally remembered is that the very first telephone call was also the first telephone call for medical assistance for Bell had just upset the wet battery powering the transmitter thus spilling sulphuric acid on his clothes. Thomas A. Watson, Bell's assistant, appeared quickly from across the hall where he had been listening to the receiver and proceeded simultaneously to celebrate the first time anyone had ever talked over wire and to administer first aid.¹

That first call turned out to be prophetic for one of the first applications of telephony was in the practice of medicine and health care in a variety of ways that could hardly have been anticipated even by the imaginative Graham Bell. The full impact of the telephone has yet to be appreciated largely because it has been neglected as a subject of serious study. But the telephone did not go unnoticed by medical practitioners or their patients. Indeed, there is evidence to show that doctors were the first professionals to be required to have a telephone and to be on call, so to speak, around the clock.

The role of the telephone in the field of health was also frequently commented upon in medical journals, and although such articles, occasional despatches from correspondents and letters to the editor do not by themselves constitute complete evidence of its influence, they do render an account of the uses (and abuses) to which it was put as well as the kinds of issues that were raised by its availability.

This paper will review the writings about the telephone in the *Lancet*, a medical journal that predated the introduction of Bell's remarkable device and which is still being published. The *Lancet's* coverage of the telephone from 1876 to the present constitutes a history of the role that instrument played in the field of health care, an especially informative one given that journal's importance in recording the major events in the development of medicine. There were many references to the telephone in the *Lancet* although not all of these discussed the influence of the new mode of communication on health. Many items dealt with general topics about the telephone of the kind that appeared in newspapers and journals that did not specialize in medicine. Thus the *Lancet* carried many entries dealing with the high cost of subscribing to the telephone, the poor quality of the service, the absence of privacy occasioned

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¹ Catherine Mackenzie, *Alexander Graham Bell*, Boston and New York, Houghton Mifflin, 1928, pp. 114–115.

by the unwarranted interception of phone conversations by the police, delays in the installation of telephones for new customers, the tardiness in restoring a defective instrument to service and so on.² This paper, however, will be confined only to those accounts that were related to medicine and health.³

The first mention of the telephone in the *Lancet* occurred in the issue of 9 February 1878, in the form of two letters to the editor. The first, from "A.B.M." of Hornsey suggested that the telephone could improve medical diagnosis and that it might be especially useful in "demonstrating and studying the sound produced by a muscle during contact, the negative contraction, etc." This way of listening—auscultation in medical terminology—could be done, according to A.B.M., by applying the electrodes (presumably of the telephone transmitter) directly to the muscle. As an afterthought, A.B.M. raised the question, "Has the telephone ever been tried in auscultation and would it offer any advantages over the stethoscope?"⁴ As though responding to the latter query (in a letter, however, which was dated seven days earlier), F. H. Sanders of Cheyne-Walk wrote: "If not already in use permit me to suggest the superiority of the telephone over the ordinary stethoscope in cases where the latter instrument is required."⁵

That idea was further explored in 1878 by William Brown of Carlisle who recalled an article in the *Popular Science Review* which had suggested that the telephone "might be used in auscultation of heart-sounds, and perhaps lung sounds." He admitted that the sounds received would not be of the same quality of those originally transmitted thereby necessitating "a special education of the ear to interpret the modified sounds." Brown, however, saw a way of overcoming the limitations posed by the faulty transmission of the telephones of that day which was made possible by the invention of the phonograph. "We have in the phonograph," he wrote, "the means of not only registering sound, but actually reproducing sounds themselves." He then proceeded to describe what surely must have been one of the earliest conceptions of the electrocardiogram machine as he asserted that the telephone in combination with the phonograph made it possible for "sound vibrations [to] be made visible to the eye, registered on paper like a pulse-tracing, and kept for future study and reference."⁶

Although Brown's ideas may have seemed visionary they were soon to be realized. In May 1910 the *Lancet* reported the invention of an electric stethoscope with the capacity to transmit the sound of the heart three times as loud as that of the ordinary stethoscope. The journal also referred to a "telephone relay" invented by an electrical engineer, G. S. Brown, which raised the intensity of sound twenty times or more when attached to the electric stethoscope. Brown's device could also screen out

² See, for example, *Lancet*, 1970, i, 957; 1922, i: 1072; 1959, ii: 1191; 1932, ii: 1087.

³ It will be the custom here to follow each category of telephone news from its earliest reference to the most recent. Too, because of the number of issues of the *Lancet* surveyed, the items drawn were those which were cited in the index of each volume. That means that any entries concerning the telephone omitted by the indexer were omitted here as well. It should also be noted that not every entry has been presented — where entries dealing with the same topic tended to be repetitious they were not discussed.

⁴ *Lancet*, 1878, i: 221.

⁵ *Ibid.*

⁶ *Ibid.*, 1878, i: 371.

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breathing and other distracting noises and when applied to diseased hearts made diagnosis particularly easy revealing previously unsuspected pathology. In a way, Brown's relay worked too well for when the instrument was applied directly to the heart the sound of the transmitted beats in the telephone was so uncomfortably loud as to make the patient uneasy.

The effectiveness of Brown's relay led to the idea that the amplified heart-beat could be transmitted by telephone so that a physician could attend his patient even though a vast distance separated them. "Is it not suggested," an editorial in the *Lancet* read prophetically, "that it is now possible for the physician, say in London, to examine a patient, say in the country, stethoscopically and to arrive at a correct diagnosis." In fact, a stethoscope had been joined to a telephone utilizing Brown's relay in an experiment and "the sound of the heart had been transmitted over several miles of telephone line to medical men in various parts of London. The sounds received were as loud and clear as when heard locally."⁷ That trial contained the germ of what was to become the new field of telemetry in medicine—the transmission by telephone of information taken from the examination of a patient.

During the early days of the telephone there were other references in the *Lancet* to ways in which the new instrument could aid diagnosis. One device which was developed in Great Britain and the United States was the "telephone probe" used for locating bullets and other metallic matter lodged in the human body. Indeed, Alexander Graham Bell himself was the inventor of the telephone probe and had been called to Washington in 1881 by doctors trying to locate the assassin's bullet that had felled President James Garfield.⁸ Sir James MacKenzie Davidson had also devised such a probe in 1884, and on 12 December 1914, the *Lancet* announced that he had improved and simplified the earlier model which was particularly helpful once a bullet or piece of shrapnel had been previously located by means of X-rays.⁹

Stimulated, no doubt, by the casualties of World War I, the *Lancet* carried a detailed article on 1 May 1915, on the theory of the telephone probe. The instrument consisted of a telephone receiver with one terminal electrically connected with the skin of the patient by means of a flat electrode covered with a wet cloth, while the other terminal was attached to a metallic probe. The latter was inserted along the tract of the bullet and once contact was made a sound was produced in the telephone. The superiority of the telephone probe over the simple (that is, non-telephonic) probe was that the latter could lead the doctor astray when it hit a bone, an eventuality avoided by one built on the principles of telephony.¹⁰

Diagnostic and surgical instruments utilizing the principles of telephony did not subsequently receive much space on the pages of the *Lancet*. It was not until 1973 that the journal took notice of the growing field of telemetry. The instrument described, a "personal electrocardiogram transmitter," devised by a group of doctors of the Melbourne Hospital in Victoria, Australia, was especially useful in recording electrocardiograms (ECGs) taken from patients with a history of heart disease. Because of the known relationship between the activity of the heart and sudden death,

⁷ *Ibid.*, 1910, ii: 1284.

⁸ *The New York Times*, 15 July 1881.

⁹ *Lancet*, 1914, ii: 1391.

¹⁰ R. G. Canti, 'The theory of the telephone probe', *ibid.*, 1915, ii: 909–911.

any abnormalities must be known at once, and this device made that possible. An experiment was described in which twenty-two patients suffering from various heart disorders had a personal electrocardiogram transmitter installed at home which sent amplified ECG signals over the telephone. The signals, in turn, were replayed on a standard oscilloscope, recorded on paper, or stored on magnetic tape. These were, in turn, monitored by doctors who could prescribe treatment when abnormalities in heart beats were evident or when pacemaker failure was visible.¹¹ The extraordinary conceptions of both William Brown and the engineer, G. S. Brown, had been accomplished!

That the telephone might be of considerable use to doctors to ease their practice was first suggested in the *Lancet* on 29 November 1879. The anonymous writer referred for justification to precedents established in the United States and cited the case of an anxious mother who, convinced that her baby had the croup, called the infant's grandmother for assistance. The latter, in turn, telephoned the family doctor at midnight and "told him the terrible news". Perhaps because of the lateness of the hour, the doctor "asked to be put in telephonic communication with the anxious mamma. 'Lift the child to the telephone,' he commanded, 'and let me hear it cough.' Both mother and child complied. 'That's not the croup,' the doctor declared, and declines to leave his house on such small matters. He advises grandmamma also to stay in bed; and all anxiety quieted, the trio settle down happily for the night."¹²

But if Yankee doctors rushed in, British physicians should be hesitant, at least, according to a later editorial. For there was the danger that patients might come to prefer a telephone consultation to an office visit. One obvious advantage of the former was that the cost could be reduced to the price of the call. Thus on 1 December 1883, the editor questioned the proposal that medical men should become telephone subscribers. While conceding that the telephone had some conveniences the editor cautioned: "The only fear we have is that when people can open up a conversation with us for a penny, they will be apt to abuse the privilege, and that to have a dozen telephone consultations in one day, or conversations that might be thought to supersede a consultation, would be a doubtful addition to one's advantage or repose."

But the editor was aware that the age of the telephone was unfolding: "Be that as it may," he concluded, "it seems not improbable that we are on the eve of a great development of the telephonic system in London."¹³

But British doctors did not necessarily wait for the *Lancet's* approval before adapting the new medium to their own needs. For example, country doctors saw the advantage of using it to make branch practices more manageable. Such joint medical ventures were designed, in part, to ease the patient load, to provide an occasional holiday for each doctor, and to broaden the pool of medical knowledge of the partners. Yet many of these benefits were lost because communication depended on the mails or the telegraph. In November 1888, a country doctor, Dr. Alfred H. Twining, wrote to the *Lancet* recommending the telephone for the partnership practice. "Though

¹¹ Thomas Peter, Michael Luxton, Ray McDonald, Richard Harper, Marilyn Pring, Graeme Sloman, 'Personal telephone electrocardiogram transmitter', *ibid.*, 1973, ii: 1110-1112.

¹² *Ibid.*, 1879, ii: 819.

¹³ *Ibid.*, 1883, ii: 967.

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five miles apart,” he wrote, “we are able so to arrange our work each morning as to obviate the necessity of both going over the same ground—a distinct saving not only in horseflesh, but in time and personal fatigue. Moreover the telephone is available for prolonged social or professional conference by day or night.”

An interesting aspect of Twining’s endorsement was that his telephone was not connected to a switchboard which was part of a telephone system of the General Post Office but rather it was what was then known as a private line, that is a telephone connected to just one other instrument. That meant that Dr. Twining could talk only to his partner who was on the other end of a wire which ran for five miles. To be sure, the partners had originally applied to the Post Office for regular switchboard service but “found their terms so excessive that we felt compelled to abandon this undertaking.” However, someone advised them to contact the Western Counties and South Wales Telephone Company and they did so, “with the most satisfactory results. For a very moderate rental this company has run a private wire between our houses and it has answered admirably in every way.”¹⁴

Perhaps because of such letters as Dr. Twining’s, the tone of subsequent editorials was more favourable. Among other things, the telephone was now viewed as a useful aid to therapy since it could be, in the words of the editor, “a companion for the sick and their friends in cases of infectious disease. Speaking-tubes are, of course, inadmissible for this purpose, because the breath must not be allowed to pass; but a telephone, allowing perfect recognition of the voice and tones of the speaker, even when the utterance was simply a whisper, would provide a most suitable means of communication. All of us must have felt the heartaching anxiety of longing to hear the voice of a dear friend when either ourselves lying on, or the friend being confined to, a bed of sickness. The comfort of hearing the voice, with all its intonations, in such a case, does not need to be described in word.”¹⁵

That the telephone was being used exactly in the manner proposed was subsequently reported on 5 November 1887:

We are informed that one of the effects of the recent scarlatinal outbreak in the metropolis has been to establish in some instances an in-door telephone system, which without the slightest risk of infection, brings a patient, so to speak, within touch of his friends and relatives Rightly used, it may even prove a boon of some considerable curative influence. A certain gain which it confers is of course the comparative leisure allowed to attendants on the sick. There is no answering bells to find out what is needed; the door of the sick-room is less frequently opened, and fatigue, as also the risk of infection, is materially lessened. The value of this form of communication in hospitals is obvious.¹⁶

The technical features of telephones in the sick-room were also considered. Thus phones “should be simple in their construction and cheap, but it is indispensable that they should be so made as to communicate the faintest whispering sound, so as to require no sort of effort on the part of the speaker, and they should be provided with mouth-and-ear pieces so light as to admit of their being held by a weak and trembling hand to mouth and ear during the conversation.” And, in fact, that very

¹⁴ *Ibid.*, 1888, ii: 1004.

¹⁵ *Ibid.*, 1885, ii: 1113.

¹⁶ *Ibid.*, 1887, ii: 927.

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telephone had “been constructed by Messrs. Cordner, Allen and Company, of 20 Bucklersbury, with all necessary facilities for fixing quickly in time of need, and medical practitioners will probably gladly avail themselves of its use by recommending it extensively to their patients.”¹⁷

But the introduction of the telephone into the hospital sick-room lagged, apparently, for it was not until 4 June 1954, that the *Lancet* reported the inauguration of a system, at Acton Hospital in London, that promised bedside telephone service for all. The programme, announced by the Postmaster-General would not place a telephone next to each patient’s bed; instead, the instrument and coin-box were on a trolley, and by extension, could be brought to the patient’s lap. A long length of flexible insulated wire made it possible to plug the telephone into one of several sockets in the ward. Hospital volunteers took the trolley round the wards twice a day. At Acton patients used the telephone primarily for long-distance calls; apparently friends who were nearer at hand made personal visits.¹⁸

That the telephone was being used within hospitals by doctors and other staff was first announced in the *Lancet* on 21 February 1880, in a brief notice that declared that the managers of the Women’s Hospital in Birmingham had arranged to “connect by telephone the in-door and out-door departments, and these with the doctors’ residences.” That would save time and trouble and “enable the managers to control the out-patient department in the county as easily as the in-patient department in the town.” Subsequently, the editor quoted a Dr. Jacob of Dublin urging the use of telephones to establish closer communications between the resident officials of hospitals and the members of their honorary staffs. But the editor wondered how desirable it was to be an honorary officer if one were always on the alert for the telephone and therefore practically always on duty—“a needless aggravation of the wrongs of honorary officers.”¹⁹

From the use of the telephone within the hospital, it was only a short leap of the imagination to suggest that the telephone could be adapted for communications between hospitals. That advice was made by Dr. Richard Davy, surgeon to the Westminster Hospital in London, who referred to what was apparently a common occurrence, an emergency case brought to a London hospital which could not be admitted because all beds were occupied. He suggested that the outmoded methods of communications then operating between hospitals be changed so that a patient would be spared the “danger, anxiety, and uncertainty of a second fruitless visit to another hospital”

As an illustration Davy cited the case of a boy who broke his leg in St. James’s Park on 16 July 1891, and was carried by a workman to Westminster Hospital. He was not admitted, apparently, because a number of surgical wards were closed for repairs and the beds in the remaining wards were filled. To prevent the boy’s simple fracture from becoming a compound one, a surgeon applied an outside and inside splint and recommended that the child be taken to St. Thomas’s Hospital. Because the boy lived near the Strand, he was taken in an omnibus to Charing Cross Hospital

¹⁷ *Ibid.*, 1885, ii: 1113.

¹⁸ *Ibid.*, 1954, i: 1195.

¹⁹ *Ibid.*, 1880, i: 309; 1883, i: 965

but he was not admitted on grounds that he had already been attended at Westminster. A trip by taxi to King's College Hospital was of no avail because there were no free beds, so the boy was taken home and slept the night. The following morning the boy returned to Westminster Hospital, and after narrating the adventurous travel "a bed was prepared for him." Davy concluded. "All this and similar future inconvenience could be obviated by the adoption of telephonic communication between hospitals, the occasion for converse is frequent and various."²⁰

Surprisingly, Dr. Davy was advocating a system of telephonic communications for his and other hospitals that was already in operation, at least, in part. For the *Lancet* soon printed a reply to Davy written on 4 August 1891, by Arthur E. Reade, Secretary of the Charing Cross Hospital. "Dr. Davy," Reade wrote, "is not aware that there is telephonic communication between this hospital and Westminster, and that it is used by the secretary of that hospital and myself for the purpose he advocates. The reason for the boy not being admitted here was because there was no bed, not because he had been previously attended at Westminster."²¹

The widespread introduction of the telephone into British hospitals, however, did not turn out to be the panacea for problems of communication. For one thing, it was not unusual for the house officer, the doctor responsible for taking calls, to be preoccupied. Calls not immediately attended to—a curse of the age of the telephone—led to a complaint expressed on the pages of the *Lancet* that the hospital house-officer frequently took thirty to forty minutes before answering emergency calls. Such charges prompted one house-officer, Dr. Michael D. Warren, of Romford, Essex, to explain why it was often impossible to come to the phone sooner. In the first place, such was the frequency of calls that the house doctor may very well already be on the phone. Or else he was "in the theatre, either scrubbed up or anaesthetising" or "engaged in some manoeuvre such as a transfusion, lumbar puncture, or paracentesis" or, perhaps, Warren added, "I have been in my bath." He rejected the advice that the house-officer needed to spend six months as a general practitioner to appreciate the latter's needs; it would be more helpful, he countered, if the general practitioner spent a fortnight in the hospital so that he could learn that "the resident does not sit at the end of a telephone all day long."²²

One of the most immediate consequences of the age of telephony for medicine was that the doctor's perennial dilemma concerning advertising was solved. Professional ethics had long prohibited respectable physicians from placing advertisements in magazines and newspapers or to post notices on bill-boards. Doctors were thus dependent for securing clients on word-of-mouth testimonials from patients, friends, and relatives as well as other doctors. The introduction of the telephone directory, with its wide distribution, insured that every doctor who subscribed to the service would have his name, address, profession and (when it was put into use) telephone number listed.

Yet the telephone, according to some critics, lent itself to excesses that came close to being "medical touting" and a letter from a "Surgeon" on 16 January 1886, called attention to the dangers:

²⁰ *Ibid.*, 1891, ii: 265.

²¹ *Ibid.*, 1891, ii: 324.

²² *Ibid.*, 1947, i: 577.

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I was surprised to see in a chemist's shop in a first-class watering-place on the south coast a large placard, stating: 'Dr. A can be communicated with from here by telephone.' There was another doctor in practice nearly opposite the shop. The telephone man, I found out, resided a little more than a quarter of a mile away; therefore the object was plain. Is not this, with all the interested recommendations of the chemist to Dr. A being the best doctor, etc., very unprofessional?²³

Although the editor did not comment on that occasion, the *Lancet* was far less reticent when the subject of telephone advertising was raised almost twenty-five years later. An editorial, entitled "Your Telephone Number", reported that London doctors had been circularized as to whether they would wish to be listed in a classified directory of trades and professions to be supplied free to every London telephone subscriber. The circular offered a choice of four sizes of type which increased, according to the editor, "in magnificence from ordinary brevier to bold pica." The cost of the insertion varied with the size of the type from one to four guineas and the editor noted that in the example cited, the London Stock Exchange was suggested as requiring a one-guinea insertion, solicitors a two-guinea, printers a three-guinea, and engineers a four-guinea. "No indication," the editor wrote, "is afforded to the medical man of the appropriateness of the type he should select."

The *Lancet* challenged the statement on the circular that professional entries in the publication were not advertisements with the words, "it is difficult to see what the inserter is asked to pay guineas for if it is not to make himself better known." The editor feared the directory would convey the impression that only the names included were those of authorized medical practitioners. He argued that the existing telephone directory served its purpose of enabling the patient to communicate with his doctor and, in addition, the *Medical Directory* provided a reference book of professional attainment judged proper by the profession as a whole. The editor concluded, "We hope that London medical men will not waste a guinea on what may put them in rather an invidious position."²⁴

The subject monopolizing the most space in the *Lancet* did not deal with how the telephone facilitated the promotion of better health but rather with its dangers to a salutary state. The first suggestion that the telephone was hazardous was made on 10 December 1892. One malady threatened by use of the new talking machine, or, more appropriately in this case, the listening machine, was "telephone ear". In the *New World* this "particular neurosis" had already earned a place in classification with the "lawn tennis leg". For authority the *Lancet* cited a Professor Lannois of the Lyons Medical School who claimed that for unsound ears the telephone was "quite contraindicated;" furthermore, "even in a comparatively robust organ its continuous use is followed by symptoms more or less grave—cephalalgia, vertigo, hyperaesthesia, insomnia and sometimes psychical disturbances of a character which might become chronic." Professor Lannois, whose comments were first presented to the Congress of Aural Surgeons in Paris, counselled the sparing use of the instrument even in the case of those whose ears were sound and "an absolute abstention from it in those whose organs are already impaired."²⁵

²³ *Ibid.*, 1886, i: 141.

²⁴ *Ibid.*, 1920, ii: 409.

²⁵ *Ibid.*, 1892, ii: 1369.

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On 24 August 1889 the *Lancet* carried a despatch from its Paris correspondent about the ill effects of audition by telephone which were noted at a recent meeting of the Société de Biologie. The case was cited of a man of great intelligence whose position obliged him to listen almost incessantly to the telephone. The result was a state of nervous excitement and hyperaesthesia of the hearing and of the ear itself to such a degree that the sounds caused ringing in the ears, and led to the persistence of alarming vertiginous sensations. Fortunately, “. . . complete rest was sufficient to remove these troubles.”²⁶

One class of users, it was feared, was especially susceptible to illness: the telephonists or operators who were under almost unbearable pressure from the demands of the switchboard. On 16 December 1911 the *Lancet* summarized the recommendations of a White Paper issued by a committee of doctors who studied the working conditions of Post Office telephone operators. Guided by the ancient adage that an ounce of prevention was worth a pound of cure, the report recommended that women job candidates who were “markedly anaemic” or of “unstable nervous equilibrium” be excluded. A “moderate and ordinary form of anaemia” could be tolerated, however, during the two-year probationary period since it would either be cured in which case the operator could safely be granted tenure, or the condition would worsen “before a permanent engagement is entered upon.” But no such leeway concerning the nervous system could be tolerated since the operator had to work directly with the public “whose methods, manner, and temper are always diverse and sometimes unpleasant.” That meant that the operator, often abused or reproached, was ever required to be tactful and courteous. An additional strain for the telephonist was the constant jumping up and down and reaching out while harnessed to relatively heavy equipment of the receiver and transmitter.

The White Paper made a number of recommendations to improve working conditions most of which—like increasing vacation time—were postponed by the Post Office. The report conceded it could do nothing about one of the major sources of nervous strain—the discourteous behaviour of the public. In that regard, the White Paper was not the first to remark that the telephone seemed to bring out the worst in its users.²⁷

The health of the operators was also the subject of a discussion in the House of Commons on 12 February 1929. Postmaster-General Sir W. Mitchell-Thomson was asked to report on the number of girls employed in telephone exchanges in London during the previous year who had suffered from nervous complaints. The Postmaster-General could provide relevant figures only for 1926 during which year, 79,712 days of sick leave were taken by London telephonists: 4,139 days were attributed to neurasthenia, nervous debility, nervous exhaustion, nervous shock, and neurosis; 385 days to neuritis; 1,592 days to neuralgia. There were 7,051 operators in London’s exchanges, but there was no record of the exact number who were absent on account of those disorders.²⁸

Nor were health hazards confined to professional telephonists. On 11 August

²⁶ *Ibid.*, 1889, ii: 408.

²⁷ *Ibid.*, 1911, ii: 1716.

²⁸ *Ibid.*, 1929, i: 369.

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1906 the *Lancet* published a letter signed "Call Office Attendant" warning of the "growing danger arising from the use of the common mouthpiece by promiscuous callers at public telephones." The attendant wrote, "During the last week people used our public telephone who were in no way fit to do so, and yet under present conditions it is impossible to prevent the risk which they convey to other users of the phone." He cited the case of a man "evidently advanced in consumption having a violent cough with expectoration [who] used the instrument and afterwards I found the mouthpiece damp with, I presume, his congealed breath." Furthermore, people likely to have been contaminated by those suffering from infectious diseases did not hesitate to use public phones. "Later in the week," the attendant continued, "a lady called up her medical attendant from the call office and from the conversation which ensued, I gathered that her children were suffering from measles. I also had a case in which from the conversation heard there is no doubt that the user came from a house infected with chicken pox."²⁹

Nor were such fears confined to relatively uninformed members of the public. On 13 January 1900, the *Lancet* carried a despatch from its Paris correspondent which reported that the Under-Secretary of State, the person responsible in France for the posts and telegraphs had, "with a view to avoid transmission of infectious diseases", ordered that all public telephones be disinfected daily with a strong solution of carbolic acid. The correspondent noted that doctors responded to that order with "a certain amount of skepticism," not because they doubted that the telephone was a carrier of disease, but "they take exception to the choice of a disinfectant, for carbolic acid has an abominable smell and is of very feeble microbicidal power."³⁰

As the twentieth century progressed the possibility that the telephone was a disease carrier continued to be taken seriously. On 27 July 1907 the *Lancet* declared that "the public telephone call office seems to be singularly well designed for the capture and growth of pathogenic organisms." Public telephones were akin to a hothouse for the breeding of disease since these "are usually closed, and padded, and kept almost airtight; sunshine and fresh air seldom can reach the interior while, of course, no attempt is made to keep them aired or ventilated, because any provision for securing ventilation is calculated to make difficult the hearing of the message. External sounds must be kept out, the box must be sealed against them, and when this plan succeeds it must succeed also in excluding with equal efficacy external purifying agencies." These measures to make the public station soundproof made it "a bacteriological box" in which pathogenic and other organisms were carefully "nursed" and the "imprisoned air" became infected. The result was that "caller after caller thus may either infect or receive infection. . . ."³¹

As a remedy the *Lancet* prescribed purified air: "The interior should be air-swept regularly or automatically disinfected." Too, callers should not speak too closely to the phone for "we know that it has been clearly demonstrated by scientific experiment that in the act of speaking *materies morbi* may be projected from the speaker's mouth for a considerable distance." The *Lancet* urged telephone authorities to protect

²⁹ *Ibid.*, 1906, II: 416.

³⁰ *Ibid.*, 1900, I: 136.

³¹ *Ibid.*, 1907, II: 240-241.

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“their customers from the possibility of contracting diseases. . . .”³²

On 14 March 1908, the *Lancet* presented a survey of public telephone stations conducted by one of its correspondents. The first instrument was “very dirty; box apparently never swept out judging by the collection of rubbish in it; including about six pence in coppers.” At the correspondent’s second stop he found “mouthpieces dripping condensation from breath of previous users; smell disgusting.” At the fourth call office the platform and the telephone were filthy and the “smell so disgusting” that the writer went elsewhere.³³

On 27 June 1908, Francis J. Allen’s article, ‘The public telephone call office as a factor in the spread of disease’, appeared. With its publication, the prestige of science was used to document the fact that the public telephone was a public menace. Allen reviewed the results of a Professor Klein’s examination of swabs taken from mouthpieces in public call boxes. Although in five out of the six call boxes tested no infectious germs were found, examination of the sixth swab revealed the presence of tubercle bacilli, the cause of tuberculosis. Klein subsequently injected two guinea pigs with material from the sixth swab. One animal was killed twenty-three days later and on post-mortem examination two tubercles were found in the omentum; in addition, the spleen showed typical tubercle bacilli. The second guinea pig was killed after twenty-seven days and examination discovered enlarged glands in the groin that were cheese-like and full of pus. Its spleen contained numerous tubercle bacilli.³⁴

With such terrifying findings from a scientific experiment it was inevitable that the question of the health hazards of the telephone would reach the floor of the House of Commons. Thus the *Lancet* reported that Sir Edward Sassoon, on 29 April 1908, had asked if there was any danger to health in allowing the public free choice of instruments from among the many on the market. The government’s response was made by Mr. Buxton, the Postmaster-General: “I am assured that there is no danger to health arising from the type of telephone officially provided in the United Kingdom.” The *Lancet* later reported that Mr. Buxton had again defended the types of telephone in use in Britain on 2 July 1908 when he asserted that they “are considered most efficient in this country and the United States, and it is easy for any subscriber to keep his telephone in a clean and sanitary condition.”³⁵

The *Lancet* later gave advice on how to combat the dread telephone bacteria. For three pence one could purchase an “Antiseptic Telephone Cap” which fitted over the mouthpiece. Or, the *Lancet* suggested, one could follow the advice of *The Times* of 12 August 1908 that the users of public telephones might fit a piece of thin but strong paper—“good typewriting paper does well”—over the mouthpiece of the transmitter to form a “little tight drum-head to it.” The caller could then speak without touching the mouthpiece. The *Lancet*, which liked that idea, added that public call offices should be supplied with aseptic paper.³⁶

On 24 July Buxton was asked in Parliament to comment on Dr. Allen’s report.

³² *Ibid.*, 1907, ii: 240–241.

³³ *Ibid.*, 1908, i: 829.

³⁴ *Ibid.*, 1908, i: 1862–1863.

³⁵ *Ibid.*, p. 1382; ii: 129.

³⁶ *Ibid.*, 1908, ii: 596.

He replied that he had read it in the *Lancet* and stressed that no trace of disease had been found in five of the six telephones tested, and that the circumstances concerning the sixth instrument, one in use at a railway station, appeared to be exceptional. Buxton also reported that a special inquiry into the spread of infection by call-office telephones had been made three years earlier by the London City Medical Officer of Health. In that study a “considerable number of call-office telephones were tested with the result that they were found to be free from disease germs.” Buxton noted that steps were taken for regularly cleansing public telephones and that improved methods of disinfection were being considered.³⁷

On 7 March 1912, Dr. C. Addison, a Member of Parliament, asked the Postmaster-General whether there had been research into the dangers “stated to arise” from the use of telephones by persons suffering from tuberculosis. Mr. H. Samuel, who had succeeded Buxton, referred to the “prolonged study” of Dr. H. R. D. Spitta. The latter, a bacteriologist at St. George’s Hospital, had studied telephones at a sanatorium used by patients in all stages of tuberculosis. The Postmaster-General quoted from Spitta’s report that “the transmission of tuberculosis through the medium of the telephone mouthpiece is practically impossible.”³⁸

Perhaps because of Spitta’s use of the word “practically” the debate over the health hazards of the public telephone continued and engaged some of Britain’s most distinguished statesmen. On 21 March 1923 Mr. Neville Chamberlain, the Minister of Health, in response to a question in the House of Commons, stated: “As the result of bacteriological inquiries made in this country and abroad some few years ago, it was held that the transmission of pulmonary tuberculosis through the medium of the telephone mouthpieces is practically impossible. In any event, the disinfection of telephone mouthpieces after each individual user would obviously be impracticable.”³⁹

But public anxieties about the dangers of the telephone would not be put to rest and on 23 February 1924 the editor decided to review some of the evidence. He recalled the research done by Professor Klein and two inquiries by Spitta, one in 1910 and the other in 1912. Spitta’s first study was reassuring: “the mouth-pieces examined were free from tubercle and diphtheria bacilli, and no other organisms pathogenic to guinea-pigs were present.” His later study of phones used by consumptives in the Frimley Sanatorium were “entirely negative.” All these reports, the editor maintained, led to the conclusion that it “was practically impossible” to contract tuberculosis from the telephone mouthpiece. And if that were not enough to allay public anxieties it was pointed out that the Postmaster-General arranged for public call offices to be cleaned and the phones disinfected every three days.⁴⁰

Perhaps as a result of this review, the debate about the telephone was suspended for six years. On 17 March 1930, however, and again on 31 July 1931, the Postmaster-General made the usual disclaimers in response to fears expressed by Members of Parliament. But such denials had not worked previously and they did not do so now. Still another study by Dr. J. T. Smeall, of the Edinburgh Royal Infirmary was detailed on 25 September 1937. Smeall had taken swabs from seventy-five phones in that

³⁷ *Ibid.*, p. 67.

³⁸ *Ibid.*, 1912, i: 765.

³⁹ *Ibid.*, 1923, i: 675.

⁴⁰ *Ibid.*, 1924, i: 402.

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city and found that the number of germs varied according to the kind of instrument used. There was “a great difference between the bacterial content of the mouth-piece of the hand telephone and that of the instrument with the ear and mouth-pieces separate.” He accounted for the differences in terms of the “dependent position” of the transmitter of the hand telephone so that “aided by gravity the droplets from the speaker find a suitable nidus.” The other type of phone was used in a horizontal position and was not as likely to retain any projected bacteria. Smeall, however, was not concerned and asserted that, despite the presence of “pathogenic organisms,” the risk of infection was “somewhat remote” because the mouth did not come into contact with the mouthpiece unless by accident. He wrote approvingly of the “careful people [who] partially cover the mouthpiece with their hand and speak through the gap between thumb and forefinger.”⁴¹

Undoubtedly, the cautious language of the scientists themselves as well as of the editor of the *Lancet* contributed much to the anxieties of the public even as they tried to produce the opposite effect. The carefully chosen words that contracting a disease was “practically impossible” or “somewhat remote” suggested the distinct possibility that talking on the phone was a way to infectious illness. Or to applaud people who carefully kept their lips from the mouthpiece was a clear suggestion that to come into facial contact with the telephone was, in fact, dangerous. And so the hazards of the telephone continued to be debated well into the twentieth century. In 1961, Mr. T. A. O’Brien, the public relations officer of the Post Office, felt compelled once again to defend the public telephone and to cite still another study debunking the risk of infection. O’Brien’s letter was published on 7 October 1961. It was the last statement published in the *Lancet* concerning the danger of disease from talking on the telephone.⁴²

If the telephone was finally absolved of being a perilous nuisance it was not to be exonerated from being a nuisance. Not long after its appearance, physicians were responding to the ring of the telephone as though under an irresistible compulsion and thus allowed what practically no other distraction had been permitted to do: interrupt an on-going consultation. “Once the patient was in the consulting room,” the *Lancet* wrote on 25 February 1911, “the practitioner’s undivided attention was given to that patient until the close of the consultation. Now, however, with the telephone on every desk it is no uncommon thing for a consultation to be frequently interrupted while queries are answered from some other patient, or appointments made, some of which may even have no bearing on professional work at all.”

The *Lancet* sympathized with patients who resented these intrusions and noted that in the case of “one well-known consultant formal complaint had been made to us.” The editor suggested that an assistant intercept the calls made during consultations. The latter could then decide whether they were urgent enough to warrant the doctor’s immediate attention. This would restore the ancient custom when verbal messages, notes, or callers had to wait until the end of office hours. That tradition should not be allowed to disappear for “urgencies are not more urgent today than they were then, while trivialities should not be allowed, because they are discussed by

⁴¹ J. T. Smeall, ‘Bacterial content of public telephones,’ *ibid.*, 1937, ii: 776–777.

⁴² *Ibid.*, 1961, ii: 725, 829.

telephone, to assume a precedence which would be denied to an attempt to intrude them by verbal messages, note, or personal interview.”⁴³

Such abuses led the *Lancet* to propose an etiquette for the doctor’s telephone “to protect busy men from its too common incivilities.” The first rule of good telephone form was that “calling up of the doctor on the ’phone should be limited to urgent cases,” although it was conceded that “there are so many degrees of urgency that it would be difficult to lay down any strict rule.” The *Lancet* cited with approbation the query of a “contemporary” who asked: “Is it permissible for a doctor to give up his telephone and tell his patients that they must send for him?” The *Lancet* replied, however, that the time had passed when “a doctor could conduct his practice in any way he chose, provided he observed professional customs and traditions.” In that regard, new regulations were cited requiring doctors on an insurance panel who lived away from their surgeries to set up telephonic communications with their homes in order to be accessible out of office hours. “It seems a short step,” the *Lancet* lamented, “to the position of requiring the insurance practitioner to provide a telephone at his house.” That, in turn, would require the doctor to have some protection. What every physician needed was “the shrewdness and tact of a confidential servant” but the editor acknowledged that “nowadays many medical men lack this first line of defence.” In the same context, the *Lancet*’s Leicestershire correspondent reported that the doctors of Coalville had decided to give up their phones “on account of the unreasonable demands made by patients who were unwilling to write a message or send a messenger.”⁴⁴

As the twentieth century evolved, however, the *Lancet* changed its tone toward the phone, and instead of seeking to protect doctors from its imperious ring, it insisted that practitioners must make themselves available by telephone, and the journal used its prestige against those modern Luddites who refused to adapt the instrument to their practice. This could be seen, for example, in 1955 when the London Executive Council ruled that a doctor was not required to have a telephone at his residence or his surgery, and that even if he did, he was not obliged to give his number to patients. That statement followed the investigation of a complaint by a mother who had waited all day for the doctor to visit her eight-year-old daughter who had tonsillitis. The woman did not know that her panel physician had a phone and she could not fetch him because there was no one to look after the child. When her husband arrived home in the evening another doctor was found who treated the child as a private patient.

During the inquiry the panel doctor admitted that he had a phone but said it was not available for patients. This was not judged a breach of the conditions of service and that finding was supported by the London Executive Council. A member of the Council did suggest that the public should insist on a doctor who could be reached by telephone. The editor of the *Lancet*, however, went further by pointing out that the terms of service of the General Medical and Pharmaceutical Services Regulations were not exclusive and that “the executive council is entitled to add to them: and this can be done even after the contract has been entered into, provided the Minister

⁴³ *Ibid.*, 1911, i: 525.

⁴⁴ *Ibid.*, 1923, i: 149.

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of Health gives his sanction.”⁴⁵

The increasing pressure on doctors to be accessible by phone could also be seen in a debate in the House of Commons later that year and reported in the *Lancet*. Replying to a question, the Minister of Health, Mr. Ian MacLeod, said that “he was not prepared to ensure that general practitioners in the National Health Service should be available to their patients on the telephone.” He added, however, that “it seemed clear . . . as a general matter of common sense that a doctor providing general medical service was not in a proper position to fulfil his obligations to visit patients when their condition so required if he did not make reasonable arrangements for them to communicate with him by telephone.”⁴⁶

Soon it was no longer a question of whether or not a doctor must have a telephone in his practice but rather what could be done to improve telephonic communications to medical practitioners. For example, doctors began to protest about having to share telephone lines with other subscribers. A policy, inaugurated in January 1948, made doctors liable to have a party line at home if they did not practise there. That subsequently led Miss Margaret Herbison, M.P., to ask the Assistant Postmaster-General, Mr. L. D. Gammans, if he would ensure that “no medical consultant had to share his telephone with another subscriber.” The Minister replied that doctors always received exclusive service at their surgeries or consulting rooms although they were likely to have a party line at home “if they do not practise there.”

The incredulous Miss Herbison asked if the Minister were not aware “that it may lead to serious difficulties if the other subscriber should be using the telephone at the time when the hospital wishes to get in touch with the consultant about some important case.” Then raising the issue of confidentiality, Miss Herbison asked: “Is it not also of the greatest importance that a consultant’s discussion with anyone in the hospital be absolutely private?” Mr. Gammans’s solution to that problem, in turn, raised an intriguing but not fully answered question concerning the manner in which the Post Office matched subscribers on party lines: “When doctors are asked to share telephone lines we try to find them a suitable person with whom to share—such as a lock-up shop—so that during the hours at which he is presumably not at the hospital the doctor has virtually an exclusive service.”

Mr. Arthur Woodburn joined the debate and asked the Minister if he were aware that in the “outland” a doctor had no private life at all. “He is at the disposal of his patients night and day and it is quite inappropriate that people should have to talk to a doctor about their private affairs when somebody may be listening in?” Furthermore, Woodburn stated that even though doctors may not have their consulting rooms in their homes “they still allow their houses to be used in addition for the ordinary purposes of practice.”⁴⁷

That the telephone had become an indispensable adjunct to medical practice could be seen in the development of procedures and institutions to ensure that anyone telephoning a doctor would reach one, though not always the one originally sought. By the same token those arrangements made the life of the physician more amenable by providing him with leisure time relatively free from anxieties about patients. An

⁴⁵ *Ibid.*, 1955, i: 301.

⁴⁶ *Ibid.*, p. 768.

⁴⁷ *Ibid.*, 1953, ii: 251.

announcement in the *Lancet* on 14 August 1948 noted that the Ilford Medical Society had arranged for a telephone operator to take urgent calls from patients whose doctor was off duty and to put them in touch with another physician. That also had the advantage of freeing forty-four of the area's fifty doctors on Thursday afternoons and evenings and all day on Sunday. The same article reported that the Birmingham Medical Society was considering a proposal for a telephone system which would make it possible for members of the public unable to locate their local practitioner to dial a special number to reach another doctor.⁴⁸ In Glasgow in 1951 the local medical committee set up a message centre which allowed doctors to leave their homes unattended. Before doing so, the doctor phoned the centre and told the operator of the arrangements he had made for dealing with calls during his absence. A patient who phoned the doctor's house and received no reply, would ring the centre and be told who was covering. The *Lancet* expected that the greatest use of the services of the centres would be on the doctor's half-holiday and on weekends.⁴⁹

Not the least important contribution of the telephone to public health as well as public safety was the fact that it became the instrument of emergencies. Of course, people did not naturally and instinctively adapt the phone for emergency purposes, they had to be taught to do so. That was not always easy. In the era before the telephone, a messenger, despatched to fetch the doctor would guide him back to the home of the seriously stricken patient. Or, in the case of a fire, someone would release the signal of the telegraph alarm box which automatically gave its location while the person giving the alarm would wait for the fire brigade and direct it to the site of the conflagration. As convenient as the telephone seems for these purposes, people often went through an ordeal switching to the new device. As will be seen, their trial was inadvertently abetted by the confusing directions appearing in the *London Telephone Directory*.

The problem was first raised by a statement in the *Lancet* on 9 August 1924 by Dr. F. J. Waldo, coroner for the City of London, who warned: "Not uncommonly . . . on the breaking out of a fire, persons on using the 'phone merely say—'Fire!' and without waiting to give their address, replace the receiver and await the arrival of the fire brigade, which, of course, never comes."⁵⁰

That prompted a response in the next issue from "F.W.W." who asserted that the reason the caller in an emergency frequently replaced the receiver before giving his address resulted from the ambiguous instructions in the *London Telephone Directory*. F. W. W. quoted from the directory as follows:

EMERGENCY SERVICES. (FIRE, AMBULANCE, POLICE)

If in the case of emergency the Fire, Ambulance, or Police service is required, all that is necessary to answer the telephonist's query 'Number, please?' with the word, 'Fire', 'Ambulance', or 'Police', as the case may be. *Do not give number.* (See instructional headlines.)

⁴⁸ *Ibid.*, 1948, ii: 280.

⁴⁹ *Ibid.*, 1951, ii: 1096.

⁵⁰ *Ibid.*, 1924, ii: 306.

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“I suppose this means,” F. W. W. wrote, ““Do not stop to give the number of any fire station, but give your own name and address and number;” but it could be read: ‘Do not give any number at all.’”

Citing the *Directory’s* instructions apparently caused considerable embarrassment, for appearing just below F. W. W.’s letter were new instructions, issued by the Metropolitan Boroughs’ Traffic Committee, on how to report an emergency by phone. “In case of accident,” it said, “the telephone exchange should be asked for ‘ambulance;’ no number is required and no charge is made for the call, whether it is made from a public call office or from a private telephone. As soon as the caller gets through to the headquarters of the Ambulance Service, *particulars as to the locality of the accident or illness should be made together with the name of the caller.*”⁵¹

Waldo, himself, responded to F. W. W. on 23 August 1924. While conceding the lack of clarity in the instructions, he noted that F. W. W.’s citation from the *London Telephone Directory* carried the phrase: “(See instructional headlines.)” All the reader had to do, wrote Waldo, was to turn to “page 346 [and] find under ‘Fire Brigade,’ as follows: In case of Fire call Fire Brigade; no number is required. When Fire Station replies, give address of Fire.” It apparently did not occur to Waldo that a person acting in an emergency might be too agitated to be able to find that page.⁵²

Despite these learning pains, it was soon taken for granted that the telephone had become indispensable especially because of its role in emergencies. A number of items appeared calling for the extension of the service into the countryside on grounds that its absence put the lives of rural inhabitants into jeopardy. On 3 January 1931, the correspondent from Ireland referred to a request, made by Dr. Sean Tubridy, a dispensary medical officer in Connemara, for bringing the telephone to remote districts. Tubridy pointed out that “a messenger sent to summon him may have to travel as much as 20 miles, thereby causing a delay which, in some cases, may lead to a loss of life, and in all cases to great hardship.” Tubridy advised that telephones be installed in all country post offices.⁵³

The fact that telephone development lagged in Great Britain and prevented its full utilization in emergencies dismayed a number of Members of Parliament. On 19 March 1931 Postmaster-General Clement Attlee was asked why no steps were taken to increase the use of the telephone in a country that held only tenth place among the principal countries in Europe and America. Lloyd George made a special plea for rural regions. He objected to the requirements that country folk had to guarantee at least eight subscribers before the telephone would be installed, to say nothing of assuring a number of calls that was far too high. Lloyd George asked the Minister of Health if he realized what it meant to have a doctor six or seven miles away even if a telephone was available. “But when,” he added, “as sometimes happened, one had to go six miles to get a telephone, there might be serious results.” Every assistance, he urged, should be given to doctors and nurses in rural areas to enable them to get phones as cheaply as possible by utilizing a special fund provided for that purpose. Attlee defended government policy by asserting that the growth of the telephone in the countryside was greater than in the city and that in the last

⁵¹ *Ibid.*, 1924, ii: 360.

⁵² *Ibid.*, 1924, ii: 412.

⁵³ *Ibid.*, 1931, i: 46–47.

eighteen months 4,200 call offices had been opened in rural areas.⁵⁴

In this connexion, the *Lancet* had also referred to an earlier discussion in the House of Commons in which Sir William Brass challenged the policy of classifying medical practitioners in the countryside as businessmen, thereby forcing doctors and nurses to pay the higher rates.⁵⁵

That the telephone had become the instrument of emergencies could also be seen in a discussion in which Mrs. L. A. Middleton asked the Postmaster-General whether he would reintroduce a system of priority calls for the medical profession similar to that which had operated under the National Telephone Company. Such an arrangement would obviate the long delays in securing hospital beds and in making other calls upon which the “health and sometimes the lives of patients might depend.” Mr. W. A. Burke replied that a doctor making an urgent call had only to explain that fact to receive first priority.⁵⁶

A special example of how the telephone was used in medical emergencies has been the growth of the telephone hotline in Europe and America. The “Telephone Samaritans”, a religiously based suicide prevention centre, established by Reverend Chad Varah in London in 1953, was the subject of a lengthy article by Richard Fox in 1962. In founding the service, Reverend Varah made it known that the telephone number, MANsion House 9000, could be rung at any time by anyone “tempted to suicide and despair.” The organization, whose branches spread rapidly throughout the United Kingdom and Europe, sought to help the depressed, lonely, and socially isolated. In 1961 the Samaritans claimed that they had helped 300,000 people, of whom, forty per cent had attempted or were threatening to attempt suicide. Fox noted that the effectiveness of the Samaritans—whose organization had become somewhat controversial with the British Medical Association because therapy was provided by laymen—could be seen in the fact that in Bournemouth attempted suicides fell to one-half after the Samaritans started their work and that in Berlin the annual New Year’s night suicide epidemic (“a peculiarly German phenomenon”) dropped from an average of 30–60 to only four during the three years after the Samaritans became known there.⁵⁷

Perhaps as instructive about the role of the telephone in medicine and health as the preceding account may have been, the subjects that received little or no treatment may also be worthy of comment. Few entries appeared in the *Lancet* concerning either the propriety of doctors consulting by telephone or whether charges should be sent for such consultations. One relevant entry did appear in 1906 in a dispatch from the journal’s Austrian correspondent. That summer a Viennese had frequently phoned his doctor for professional advice. When his physician sent a bill, however, the patient refused to pay. An Austrian judge ruled for the doctor and declared that professional advice “must be paid for, whether it was given in the consulting room, or by letter, or by telephone, or at the bedside. The special knowledge of the practitioner, acquired with difficulty after long years of study, could never be a subject of

⁵⁴ *Ibid.*, 1931, i: 732–733.

⁵⁵ *Ibid.*, p. 389.

⁵⁶ *Ibid.*, 1946, i: 358.

⁵⁷ Richard Fox, ‘Help for the despairing’, *Lancet*, 1962, ii: 1102–1105.

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‘sweating.’” On the question of whether or not it was proper to consult by telephone, the judge ruled that it was the doctor’s duty to decide whether he might safely give further instructions by telephone provided he had previously seen the patient.⁵⁸ No further comment about these related issues ever appeared in the *Lancet*.⁵⁹

SUMMARY

The telephone has been an important part of Western culture since its invention in 1876 but has been so taken for granted that there has been little research into its impact. This neglect has been true for the field of medicine and health where its influence has likely been great. In the absence of systematic surveys of the kind undertaken by sociologists, one important medical journal has been followed with reference to its treatment of the telephone. That made it possible to identify, tentatively at least, the evolving role of the telephone in health care.

The review of the *Lancet* revealed that the telephone insinuated itself in many aspects of medicine and health. Surprisingly, fears about the instrument itself as a source of infection took up more space than any other telephone topic. But that did not obscure the fact that the telephone was being used more and more in medical practice, that doctors were increasingly pressured to be available for consultation by phone, and that despite some initial resistance to it, the phone actually eased some of the strains of practice. Too, we have seen that the facility with which a caller could reach a doctor by phone apparently led to such abuses that the editor of the *Lancet* felt the need to propose protection for practitioners. We have also seen that the telephone quickly became the instrument of emergencies; that the phone made it possible for the sick to receive companionship even under quarantine; that the emotionally disabled could receive aid over the phone. The telephone greatly increased the efficiency of the hospital by making it possible for doctors to call ahead to arrange beds for patients. Too, hospital officials were able to communicate between wards and between the hospital and residences of staff doctors. The telephone directory helped to solve the doctor’s age-old problem of how to advertise without violating professional rules. There were other important uses of the telephone in the field of health as well.⁶⁰

Starting in 1949, the age of television began to command more space on the pages of the *Lancet* than its electronic ancestor. But the telephone could hardly be said to be on the decline. Especially as the promising new field of telemetry, already reported in the *Lancet*, developed further, it was likely that the telephone, at the very least, would maintain parity with television on the pages of the *Lancet*. This is especially likely since there are signs that social scientists have now discovered the telephone, fully one hundred years after Alexander Graham Bell did.

⁵⁸ *Ibid.*, 1906, ii: 129.

⁵⁹ At least none appeared in the Index.

⁶⁰ For example, the *Lancet* noted that seminars were being broadcast over rented telephone lines to doctors assembled in their local neighbourhoods who were thus saved the time and trouble of travelling to a distant city for their postgraduate training. See Michael Balint, ‘Two-way telephone system for seminars using Post-Office trunk lines’, *Lancet*, 1964, ii: 1293.