INDUSTRIAL MEDICINE

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In 1700, after the introduction of the factory system, occupational diseases and accidents were seriously regarded. The workmen began to realize that steam and speed had not improved living for them. In Manchester the the average age of a laborer was twenty-two years as compared to forty-four years in the upper classes. Aside from the occupational diseases, aggregations of humans favored infection and the bread-had that condition to contend with outside of his working hours not only for himself but for his family. Late in the eighteenth and early in the nineteenth centuries there were typhus fever epidemics in Great Britain because of want, overcrowding and similar changed economic circumstances.

Both industry and medicine have advanced greatly since 1700 but not until the World War did they come together ostensibly for the benefit of the working man. The world war drained the man-power of the nations and conservation had to be practised somewhere. Innumerable statistics can be gotten on the comparisons of men killed and injured in warfare as compared to those killed and injured in industry, and the latter has a surprising high percentage and that percentage multiplied by the years industry has been present as compared to the years spent in warfare, can be very appalling. It was not, however, the statistics that started the ascendency of industrial

medicine, but it has been the cause for its continuance.

A day's loss of work, due to sickness or injury, multiplied by hundreds and thousands of workers, means loss of money and decrease of efficiency, the standards by which employers can rate their organizations. When production meant as much as it did in 1914-19 each day's loss was a serious matter. When investigated, the cause of these lost days were comparitively trivial and could have, with immediate attention been overcome. Then, too, investigation proved that, because of neglect, minor injuries led to complicated circumstances which kept a man incapacitated for longer periods of time. So employers began to look to the benefit of his employees, as he looked to the repair of his machinery, and medicine began to take a stronger hold in the maintenance of a more efficient, healthier industrial body.

Although the war did bring into prominence the need for medical supervision in industry, certain organizations of employees and some fore-sighted employers had started to improve working conditions and workmen's health by consulting the advice of doctors in regard to improvement of sanitary conditions and installations of safety devices and general education of workmen as to the importance and care of minor injuries, ie., four hour dressings in case of injury cut the time of disability fifty percent. The employee saw in this more the interest of the employer for his workmen. It made him conscious of himself and led him to take an interest in his physical wellbeing, not only as regarded his work, but in

general. It made him make a greater effort to maintain a standard. As to the employer, he saw benefit derived from such practice of medicine, in a reduction of time lost due to sickness as high as forty percent. With healthy alert workmen accidents were reduced, and in public utility companies, these accidents included not only those to the workmen but those to the public both of which react as the loss to the employer.

Industrial medicine is a practical application of preventive medicine. To begin at the cause of things is the way the medical profession attacks any diseased condition. To keep people in a normal state of health and not allow disease to spread is the aim of the present day practitioner. With cooperation between employer, employee and physician a great step can be taken in the prevention of industrial diseases and general health deterrents.

In the prevention of industrial accidents the doctor should inquire as to the cause of the accident and with the help of the employer should so guard or eradicate the cause thatthe event will not be repeated. A man comes to the doctor with a torn finger or a twisted wrist. The accident may be due to the man's own negligence, but the doctor should investigate the machinery with which the man works and if in his estimation that particular piece of machinery could be more effectively covered or in some other way protected he should see the employer and state the situation and what he would consider the benefit gained from such a measure. In that way he prevents future workmen from similar accidents, and the

employer from the expense of time lost by the man and that used in training a new one in his place, and also from the expense of compensation and care of the patient. The industrial commissions of the states provide for such situations but the individual organizations working conditions vary and it is in these variances, that the commission cannot forsee the accidents that the doctor can advise.

A doctor in affiliating himself with an industrial organization should study the processes by which the factory produces its goods. In so doing he can determine possible dangers to which the workmen may be exposed and from which they may be suffering when they come to him. Knowing such conditions and having in his knowledge the manner in which to treat them he is prepared to give the best service to the afflicted man and to the whole group of working men. Thus after a survey of the plant or factory under his care he can advise the installation of guards for shafts, gears, and wheels, dust-catchers, ventilators for poisonous fumes, and similar devices. He could advise replacing shaky uncertain ladders by substantial stairways and floor coverings which would be dry and warm. When men have to stand long hours at work, a gloor covering which would be constantly damp would be the greatest hazard to his health that the factory might contain, or in the case of a man who is moving constantly, the covering should be such that it is protected from grease as the workman might slip in the performance of his duty and thus be severely injured. The lighting of a factory plant or office

building is also very important. Many individuals suffer from inumerable conditions which may be attributed to eyestrain, and such a situation may be easily remedied by proper lighting. It is in these details that the physician can accomplish the most, for he can forsee what accidents may result if the condition persists. Besides these instances, anything pertaining to the working men's employment surrounding should be under the supervision of the physician, for he looks at all things and places with respect to their health detriment or betterment and is more keenly aware of poor conditions than the employer.

For the immediate treatment of accidents occuring on duty the doctor should have a first aid hospital in a convenient place in the factory. This would be the center of all medical activity. It's size would depend on the demands made upon it. It's equipment need be only of the essentials necessary to care for the patient after the accident and pending transportation to some place where more elaborate treatment may be instituted. With the growth of the medical department this first aid hospital could take on the follow up treatment of ambulatory cases, and of minor injuries received while off duty so as to save the man losing a day from work, or which would interfere with his efficiency in performing his job. Branching out from this central department, the establishment of first aid stations at convenient places throughout the plant, would be the next step. These stations should not be used in place of the central hospital but as a means to bring aid to the injured man more quickly. These stations need contain

nothing more than iodine, vaseline, blankets, and a stretcher; but they should be familiar to every employee not only as to location, but as to use. The doctor, of course, is the one upon whom the workmen depend in case of an accident or sickness. He can augment his work by instructing the workmen in the care of minor injuries. He can make the work of his department count by lecturing to the man and instructing them as to what to do in case of cuts and burns. He can show them simple bandaging and different means of improvising stretchers and carrying patients. In factories and electrical plants where men are often overcome by gases or electrical shocks, the doctor has done more for the men when he teaches them resusitation than he could hope to do by telling them of the dangers of such conditions. When given an insight into the treatment of injuries and told what to do in different emergencies, the men take a different attitude to accidents and attempt to reduce them. By treating accidents as they happen on the job the reduction of days of disability may be as high as forty percent. The treatment of minor injuries prevents the development of more serious conditions, the small would being a source of extensive infection.

Such responsibility makes the men more aware of the man working next to them — he is a man and not just another human machine. By just such gradual steps may the medical department of any concern grow and the concern benefit as a result. Men knowing they will receive medical aid, apply more readily to such factories, the employer thereby gaining be-

cause he can have a greater choice of better workmen.

With the development of medicine in industry, the examination of prospective employees became the initial and most important procedure. Such a small number of the host that applies is physically perfect, that employers cannot set standards too high or they would have no workmen. But with the judgment of a medical man as to the capacity for work of any one individual, workmen can be assigned to positions for which they are more nearly fitted. Each doctor, examining applicants, can have standards by which he accepts or rejects men; and his basis for such acceptance or rejection should be based upon the type of work done in the particular industry. For example, in a certain grinding company the list of conditions which would exclude a man from employment are:

1. over 45 years of age
2. only one eye
3. vision reduced one-half
4. contagious diseases
5. more than second degree hernia
6. heart disease disturbed compensation
7. varicose ulcers
8. 4-5th degree flat-fllt
9. marked hypertension

This examination of an employee protects other employees and what is more important in food companies; the public.

By such examination of men applying for entrance

to the employ of an organization the doctor can detect and isolate contagious disease. The procedure protects those already employed and also the community in general.

Work must be found for the industrially disabled man as well as for the disabled soldier. With the selection of the applicant with a view to fitting him to hisjob, the one-armed but otherwise physically fit man can be made economically independent. He therefore is not a social charge, is a happier individual to have in a community, and releases from a minor job a two-armed man who can be used to some advantage in a more strenuous position.

Altho disliked in many instances, the entrace examination is being favored more and more. It is not a hindrance to an able man and is the only barrier necessary to keep out the physically unfit, a better class of men will apply because of the requirements.

An employer safe guards himself by examining the men as they are hired, because he knows then their physical condition upon entrance and in case of subsequent injury the extent of injury due to theaccident and that due to previously existing physical existance may be determined. Many men have hernias and if not examined, the man could claim that the type of work in which he was engaged was the cause of the rupture. With no previous record of the man's condition the company would have a difficult time in proving otherwise. Not every man is blessed with a heart with unlimited reserve, yet every man has to work. Therefore the man with the weaker heart

should be cautioned against heavy work and should be given work fitting his heart's power. A man with high blood pressure, given a strenuous task might have a cerebral hemorrhage — the job thereby being responsible for his death.

Men employed with known defects should be examined routinely so that their physical condition may be watched in relation to the work they may be doing. If there has been a change for the worse, the man can be laid off or can be given an easier job. By checking up in this way men do not become run down while working and days may be saved which might otherwise be spent in disability.

In many simple ways the doctor in an industrial organization may carry on a health education program. He need not give up a great deal of him time to it. Each man who comes to him in case of sickness can be talked to and given advise as to care of himself. He can also be told what to do to prevent the reoccurrence of such a condition. This particular contact doesnot limit itself to the man himself, he takes it home and discusses it with his family. The influence of the medical officer thereby reaches beyond the industrial plant and affects a whole community, usually of people who could not afford a physician unless very sick. Some organizations have proven of such value to the men themselves that by their own effort they have expanded it so that by payment of a small sum, monthly, medical service was extended to take care of the families of the employees. In such cases there is usually a staff of full time physicians or one full time physician. The benefit in such a

situation is almost impossible to calculate. Many of the families served, would not receive medical attention because of financial difficulties. Many unhealthy home conditions would be cleared up and a better fitted man would be sent to work every morning. If a man knows that his sick wife or children are being taken care of, he can go to work with a greater peace of mind. A steady healthy unworried man seldom meets with accidents. Time lost by a sick man is nothing compared to the damage resulting from the false move of an over wrought, worried man. The home conditions have a great deal to do with the efficiency of a man. No man going to work knowing his wife needs a doctor, whose services he can not afford, is going to be as efficient as the man who leaves home without such worries. A man can leave his job and leave everything behind him, but he can not do the same when leaving home. The care and responsibility of otherlives than his own are on his mind and he can not get away from them, but they can be made easier by just such attention as they medical department makes it business.

The end-results of a medical division in an organization are three-fold; a healthy capable, assured man, a family life free from worry and an organization with a minimum accident rate, and time lost due to sickness. This human machine of the factory is much more sensitive to outside influences than the wheels, gears, and belts it controls. To keep it in repair means constant supervision, care and understanding. These qualities are a portion of a doctor's professional ability and a far-seeing organization will have such a man with them just as they

will have a sufficient number of barrels of oil for the gears, wheels and belts.

Articles in the organization's magazine by the industrial physician, with advise relative to any phase of the medical work bring home to the workmen the fact that they are being supervised, cared for and understood from a human angle and their response to such an effort will increase.

Something must also be said of the nurses working in the industrial field. Their work in many instances is the main activity of the medical department. In other instances, they carry out the orders left by the attending physician. The nurse takes care of the details of the department and allows the physician time to do the more important work, especially is this true where the physician is in attendance only a few hours of every day. The nurse in most cases gives her full time to the job. It is the nurse usually who carries on the health education programs. It is also the nurse who goes out into the field and makes the home contacts. Her work is important for it makes the link between the man's home and his job. It carries the personal interest farther, and it makes possible a greater number of small benefits which the doctors could not take care of, such as advise to mothers as to care of themselves and babies, and also methods of taking care of the sick at home.

Another service, not as yet extended to many individuals, but of great importance is that of a dentist. Out of 30,000 mouth examinations, 96% were in need of a dental service. If men were rejected when applying for jobs because of

what should be done for their teeth, 25% of all those making application would be effected. Every doctor knows how great is the tendency for the teeth to be the focus of infection and he should be the first to advise the care of poor teeth. The installation of such a division is new in most medical departments and needs a great deal of stressing by the medical man.

I have been personally interested in an industrial medical organization which has for the most part a development which is almost complete as far as service to the employees and their families is concerned.

The Milwaukee Electric Light and Railroad Company has among its workmen an Employee's Mutual Benefit Association. It is this organization of the workmen which, with the aid of the officials of the Company, first saw the need of and benefit to be gained from a medical division. The company is a public service corporation, located in a city with a population of 500,000. It numbers four thousand employees. The Employee's Mutual Benefit Association when first organized had a voluntary membership. Any person employed by the company may become a member of the Association after he has completed ninety days of service.

The medical service of thisAssociation was organized in 1912. At this time service, medical and surgical, was provided for only members of the Association. The physician was located in the main building of the company. He held regular office hours and made calls on members who were will in their homes and could not come to him.

As the benefit of this department extended it had to be enlarged. Therefore medical offices were established in theseveral car stations. This took the services of the physicians even nearer to the workmen. The city was then divided

into sections and a part-time physician appointed to each district, with a car-station the center of hisactivities. With the growth of the department the city has been divided in a greater number of sections and the central offices have become much larger. With the district system men can be taken care of on their way to and from work and time is not lost in going to the central office. The doctor in each district usually has his home in that district so that night calls can be made with relative ease.

The next development of this division was the extension of the medical services to the wives and children, up to the age of eighteen, of employees. This service was soon augmented by the addition of obstetrical service to the married women employees and wives of employees.

When the benefit of the medical service was proven, regulations were made that provided for the examination of all applicants for employment.

Very soon after the organization of the medical department nurses were employed. At first one visiting nurse was employed. This force gradually increased until at the present time, there are three visiting nurses, one surgical nurse in the central office with an assistant, and a nurse in charge of all X-ray work. The dentist's office also employes a nurse who is trained in anesthesia and she can be called into the main office rooms, in cases of emergency when an anesthetic would be needed.

Within the past year a dental department has

been opened. This service is extended only to employees and their wives. It is not a free benefit of the Association as is the medical service, but is given to the employees at cost. This office is in the suite of rooms with the medical department, all X-rays and medicines being available to both. Two dentists and a nurse compose the staff.

At first having but one physician in the central office, the medical department has increased in personel until not there are eight doctors in Milwaukee, and one in Waukesha, Racine, Kenosha, West Allis, Watertown, and Appleton. Of the eight doctors in Milwaukee, the chief surgeon, his first assistant, and the Chief Internist are the only physicians who are full time, all the others give only part of their time to the Association. In the city of Milwaukee each of the doctors, with the exception of the Chief surgeon and internist, are assigned a district in the city and they are subject to call by members of the Association living in that district. They also have office hours in the plants and car stations thru-out the city. In these office hours they see men who have had small injuries, who want advise as to care of themselves or families, they also see members of the families who come, and they also take care of men who have come from the hospital and are not permitted to work.

The Surgeon and his assistant are in the hospital, to which all surgical cases are referred every morning until eleven o'clock. They then have office hours in the cen-

tral building at which time they interview patients, both employees and accident cases of the Company. They are also in the central office all afternoon.

One of the part-time physicians who has not a branch office under his care, spends some of his time in the central office giving physical examinations to all applicants for employment.

Each physician diagnoses and treats the cases which come in to him. He has the X-ray andlaboratory facilities of the department to aid him in this. If at anytime he is unable to do so it is his privelege to call in the chief surgeon or internist and ask them for a consultation either at the office or in the patients home. If his case becomes of surgical importance he can immediately refer it to the Chief Surgeon who will takecare of it in the hospital. Obstetrical cases who wish hospitalization or which might present complications necessitating hospitalization may be taken care in the hospital with which the Association has affiliated itself.

In remarking upon the work and organization of his department, the medical director has said, "It is team work such as this which is absolutely essential to the successful operation of any group plan of medical service. I feel that this service should be made so excellent that it can successfully compete with any private service in a locality where large groups of men are being employed. If the members are impressed by the fact that they are being given the very best service that can be given them in their locality they are bound

to be satisfied. The man who is a good mixer alone, with a bold front, will not last long among a discriminating group of employees such as are found in our large public utilities. He must have a scientific mind as well as a well trained mind if he is to succeed.

My experience, based upon seven years of observation of the working of this group medical service, is that with the lapse of time, each physician makes more and more friends among the membership of his own particular group, and there is really no difference in the personal relationship of an Association physician to his patient, as a group, than there would be if he were a private doctor employed from time to time by an individual.

The staff of physicians meets weekly for professional discussions. Each physician, altho a general medical man, gives particular attention to some one subject. Therefore at these meetings one man comes prepared for surgical discussion, another for obstetrical, another for urological and so on. In this way the Association is served by staff of specialists. In these meetings all accidents that have occurred are discussed and ways and means of treating them and preventing them are taken into consideration. Each physician can bring before this meeting interesting case reports and diagnostic problems. In such a manner the whole staff is in touch with the work, problems, success, and failures of the others and each learns by the other's experience, so that he returns to his own patients a better informed man.

The nursing staff also has a definite organization. The three visiting nurses each have a certain portion of the city to cover. They visit patients who have returned from the hospital and change the dressings on the wound. They give daily nursing care to those confined to their homes who cannot afford a special nurse or hospital care. The nurse also makes pre-natal calls, which she makes every day for the first two weeks, she takes care of both the mother and baby. After the first two weeks she calls every week for one month and then every month for our months. She also urges the mother to come to the baby clinic every week at the central office. Each of these visiting nurses is given the use of a small car, so that her time is not spent in waiting for cars or walking several blocks so as to make connections.

In the central office there are three graduate nurses and one practical nurse. One of these nurses, as I mentioned before, is in the dentist's office and can give anesthesia. There is one nurse and the practical nurse in the operating room. They take care of the dressings and assist the doctor's in examinations. They also take care of the supplies for the various stations, the visiting nurses and doctor's bags. The third nurse has complete charge of the X-ray department. She takes and develops all the pictures. She also does her own filing and recording. The assistant nurse in the operating room takes care of patients receiving olpine or ultra-violet ray treatment.

Important the work of the department is the steno-

graphis and clerical staff. Under the supervision of a secretary, there are five stenographers and clerks. They file and record all the cards of the employees coming for medical aid, they also file the physical examination findings of prospective employees, and keep up to date records of each member of the family receiving medical aid. It is from these various records that the statistics of the department are compiled. They also tabulate the doctor's monthly reports from which is calculated hiscompensation as far as his work for the department is concerned. One of these girls also takes care of the patients as they come in for appointments with the doctors. Another girl is stationed in the operating room and records all patients as to their injury and treatment received. She also has charge of the tabulating and filing of the periodic examination findings.

The central office of the department is located in a suite of rooms in the main office building of the company. This suite of rooms consists of a large waiting room, accomodating fifty persons, and space for the desks and files of the stenographers. There are four doctor's offices with a desk, instrumentcase, operating table and scrub sink. A large operating room with several chairs, an operating table, two supply carts, instrument cabinet and a scrub sink and foot bath is completely tiled and enameled white. A sterilizing and general supply room where all stock supplies are kept adjourns the operating room. There is also a small room which contains a bed and the lamps necessary for physiotherapy.

The X-ray equipment isinstalled in three rooms.

The largest room containing two tables, one with the Bucky attachment for all radio-graphic work, the other for fluroscopic work. There is also an up-right fluroscope. In connection with this room is a small dressing room and the dark room for the storage of film and development of pictures. There is the third room in which are kept the X-ray files of all pictures taken. This room also contains a view-box for all flat plates and a stereoscopic view-box.

The dentist's office is immediately adjoining the medical suite and has in it equipment for two dentists and a gas machine for anesthesia. All dental X-rays are taken with the medical department unit.

At the several car stations a room is given over to the doctor's use and it is equipped with a desk, examining table and cabinet with instruments, medicines and dressings.

Each department car station, power plant and substation is supplied with an emergency kit, stretcher, and blanket. These kits are regularly turned in to the medical department for checking and restocking. A record must be made of every thing used and for what purpose. This is done in order that the central office may know not only of the more serious injuries but of the minor ones, too. Not every kit is supplied in the same manner. Those in the offices having only a skin antiseptic and some bandaging. Those in the power and electrical plants also have those articles plus vaseline in cases of severe burn. The use of these kits is taught the men but it is distinctly understood to be only a first aid measure. After

being taken care of at the place of injury, the individual is to be brought to the central offices.

Every injury occurring while a man is on duty is immediately reported by the man in charge. The injured person is then seen by the doctor at the plant or office or is removed to the hospital if the case is seriousenough. This same procedure is true of accidents occurring on street cars, or where a street car or bus of the company is involved. The Company through the Association's medical department takes care of all accidents occurring on the car-lines or bus routes for which it is responsible.

The medical service is handled in the outlying towns in the same manner as it is in Milwaukee, although on a smaller scale. In case of surgery, the patient can be brought to Milwaukkee if it is not an emergency, or the chief surgeon or his first assistant go to the town from which the call came. The physicians in these smaller towns have private practices besides taking care of these employees and they are compensated in a stipulated manner by the Association.

All surgical work is done in one hospital. The Association has arranged with this hospital for the maintenance of a certain number of beds. The Association has supplied the chief surgeon with the necessary instruments. In this hospital are performed all major and minor operations upon employees and members of their families. Medical care is given in those cases where hospital management and regulation is necessary. This hospitilization is not entirely free service. The patient must

pay his hospital bill, but special benefits are received from the Mutual Benefit Association in case a person is confined to the hospital. The surgeon's services are free as they come under the regular services of the medical department.

The medical director has said, "If medicine is of any use whatever , its greatest usefulness should be the seeking out of blind disorders and remedying them before they have become dangerous factors in a man's life." In July 1925 the Association established periodic health examinations for its members. These examinations were made by appointment with the doctor assigned to make these examinations. The examinations were voluntary and intended for the benefit of the individual concerned. Their value lay in his willingness to follow the advice given. All personal relations which exist between physician and patient are carefully observed.

It is a service extended in the interest of its members to promote health and prevent sickness. Such examinations will show facts upon which advice can be given as needed by the Medical director, or the physician attending the member or his family.

Altho there are no occupations in the company which cause any particular disease as is true of certain industrial organizations, the human machine, like any machine can be kept in good condition only by skillful inspection at proper times and by immediate attention to small defects, thus made known, which will prevent their becoming real troubles.

With the warning in advance and while he is still able to work, he has a better chance to prolong his working days and provide for the future of his family. The chances are that if warned at the beginning of the possible trouble, he may be able to so shape his plans and to so choose his work that his normal lifetime will not be shortened, and his earnings not very much decreased. The health examination ought to lessen sickness and deaths and so reduce payment by the Association for sick benefits, it ought to increase the earnings of members because it reduces the number of days of sickness.

The Metropolitan Life Insurance Company has found that over a period of years, the rate of deaths of insured persons who take advantage at least once a year of health examinations, is only seventy-six percent of the rate of deaths among its other policy holders.

The Association has had the chance as yet to draw such conclusions, but it is felt that a great deal is going to be accomplished as these examinations proceed. The accompanyint tabulation of the analysis of the first one thousand cases shows what these examinations reveal and along what lines follow-up work can be carried on. Every one coming in for an health examination is urged to continue coming each year. Those in whom gross defects are found are urged to come back obtener, some advised to leave work for some time and in some cases an easier position is found so the strain of the job does not affect the individual too greatly. The employer looks upon the periodic health examination in this light, "Logically, physical

Analysis of Health Examinations.

Statistics of first 1000 cases

	number of cases	% of total examined
Appendectomy	96	9.6
Subject to coughs and colds	405	40.5
Defective teeth	627	62.7
Defective tonsils	265	26.5
Goitre	114	11.4
Defective lungs	447	44.7
Defective heart	260	26.0
Family history of cancer	48	4.8
Family history of T.B.	76	7.6

Data on General Ailments

Appendectomy — 96 cases — 9.6%

No. of such cases having stomach trouble 16
% of such cases having stomach trouble 16.6

Coughs and Colds — 405 cases — 40.5%

No. of such cases having had flu or pneumonia 110
% . of such cases having had flu or pneumonia 27.2%

Teeth (defective) — 627 cases — 62.7%

No. of such cases with heart afflictions 140
No. of such cases with stomach trouble 68
No. of such cases with lung trouble 283
No. of such cases with goitre trouble 65

Analysis of Health Examinations
(cont.)

Tonsils (defective)	265 cases	26.5%
No. of such cases having goitre	34	
No. of such cases having stomach trouble	38	
No. of such cases having lung afflictions	120	
Family history of T.B.	76 cases	7.6%
No. of such cases having lung trouble	43	

examination of applicants should be followed by a periodic examination after employment. People are employed after examination in spite of minor impairments. These may be correctible or they may be progressive. All facts as to theircorrection or progression should be known. Likewise, new impairments, and chronic, progressive, disabling disease may become evident at anytime, in anyone. Their detection and the institution of suitable corrective regimes are necessary to maintain an employee in a working condition, without waiting for the advent of disability and abscence from work to supervene before a routine is established. Periodic health examination of employees can become quite detailed, but, like the physical examination of the applicant, the extent should be determined on the merits of each individual case."

The nurses in their visits to the homes of employees come in contact with all classes of people. They find home conditions very poor in some cases. By frequent visits to such homes they become acquainted with thepeople and learn their mode of living. These people gradually gain confidence in the nurses and become interested in what they are trying to do. In time, the nurse hasthe home condition bettered a great deal. More can be gained in health education through the children than by any other means, and the nurses urge mothers to bring the babies to the baby clinic which is held every week in the central office. Here is a doctor and nurse in attendance and the babies are weighed and examined. The doctor talks to the mother about various feeding problems not only of the baby but of the

older children. An effort is made to have the mother return regularly with the baby. Baby care is also taught the mothers by means of a small booklet written by the Chief Nurse and given every mother soon after the birth of the child.

Some of the smaller but important services rendered by the department are also in furtherance of preventive medicine. The Schick test was advocated for all the children of employees. A great number responded and the test was applied. Not such a great number of those found susceptible agreed to have the immunizing doses as was desired but the work is still being carried on and greater success is hoped for.

During the epidemic of typhoid fever in Milwaukee the Association provided five hundred dollars worth of typhoid vaccine for the use of employees and their families. The medical department administered the vaccine and three thousand persons were innoculated. This same story was repeated when the city had an epidemic of small-pox.

A definite amount of insulin has also been obtained by the Association. After a diagnosis has been made by one of the physicians the patient is taken to the hospital for regulation of his diet and determination of the amount of insulin necessary, the patient is released and continues his treatment under the doctors at the Central Offices.

Examination for insurance sold by the Association are made at the Central Office.

The monthly magazine of the Association prints a column of "Health Hints" written by the Medical Director.

These contain timely and practical suggestions for the conservation of health. This column also tells of the activies of the department and informs the member as to new services when they are available.

Eight of the Association doctors receive a flat salary each month, the others are paid upon a per capita basis. Those paid per capita receive seventeen and one-half cents for every member treated per month, fourteen cents for each member's wife and fourteen for each child unit. Any number of children under eighteen years of age are considered as a child unit. The Association pays the Association physician fifteen dollars for each confinement case, the member in turn pays the Association that same amount as this service is not free. A special arrangement is made for paying the physician when he has to make a call outside of the city limits. In this case he gets two dollars for every call. This he records every visit and renders a full statement every month to the Association. The company pays for a certain portion of the services rendered in industrial accident cases, under the Workmen's Compensation Act and for attendence upon accident cases which are due to accidents occurring in connection with the utilities operated by the company.

During the existence of the medical department the average days disability has been gradually reduced until in 1922 it was approximately four days per man. This meant a saving of twenty thousand days not only ofservice, but of complications

which arise due to lost services and a saving of wages for that same length of time. This is important because it is the older employees who are most dependable and proficient, who are most likely to become sick.

The annual reports state most clearly what great good the medical department does and in just what ways it is most important. "It is clear that statistical records cannot do justice to the real value of this medical service. There are results actually the more important which are not susceptible of such record. The peace of mind of employees and their families even at times of severe illness because of prompt and competant medical, surgical, and nursing services always available; protection of the health of the younger children; education in standards of hygiene and sanitation; these and other services have results of great importance to the efficiency of the working force, and to the personal welfare of the members of the Association."

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