The following *indications* have proved useful rules to follow in the daily practice of insulin therapy:

Convulsions should be used in insulin therapy:

(*a*) Preparative—to achieve the co-operation of resistive, negativistic, restless, excited, and stuporose patients, and of those who refuse food or eat inadequately.

(*b*) Provocative—to induce a coma in patients in whom progressive doses of insulin and correspondingly low blood-glucose levels do not produce the expected cerebral reaction of coma. One or two convulsions given in hypoglycaemia are usually effective on the following day without increasing the insulin dose.

(*c*) For combating affective admixtures of the schizophrenic clinical picture: depression, listlessness, drowsiness, general moodiness, manic features.

(*d*) For speeding up recovery in those patients who, after initial improvement, remain on the same level for 3–4 weeks without further progress. A series of electrically induced convulsions, six in all, given on alternative days in coma frequently brings about a further improvement which remains stable after the convulsions have been discontinued.

This scheme of indications covers most of Sakel's specialized modifications, although nobody in charge of chronic schizophrenics will share his fear that convulsions hasten deterioration and dementia. On the contrary, "maintenance treatment" by E.C.T., spaced according to the individual requirements of the patients has become one of the indispensable symptomatic helps in procuring adaptation to a more satisfactory and happy life inside and outside hospital.

Convulsion and coma are both reactions of the human cortex to hypoglycaemia—one acute, the other subacute. While the former may be understood as a preformed defence mechanism in an emergency (Cerletti), the latter results from the withdrawal of the only fuel on which the brain can function, viz., glucose. Under which conditions the one or the other occurs in hypoglycaemia, seems to depend on the time factor of this withdrawal. Electrophysiological studies on the nature of seizures in general will probably soon provide a more satisfactory answer to this problem.

The idea of antagonism between convulsion and coma has, therefore, little scientific meaning. The same holds true of the phrase that coma is able to fix the results of convulsion therapy. These are modes of speech, comfortable speculations for the special restricted purpose, but they can hardly rank as hypotheses of heuristic value.

Discussion on Indications for Shock Therapy.

By WILLIAM SARGANT, F.R.C.P.,
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TO-DAY I want to confine most of my remarks on the indications for shock therapy to problems concerned with the proper selection and handling of patients for E.C.T. I intend to make only passing reference to insulin.

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I feel that the position in regard to insulin has not really altered very much in the last ten years. Those of us using it then had already learned that, despite its limitations, it was a far superior treatment to convulsion therapy for schizophrenia, and that the earlier it was given—preferably in the first few weeks or months of illness—the better were the expected results. All that has happened since is that this impression has been confirmed again and again, and, though we are still a long way from finding a really satisfactory answer to the treatment of schizophrenia, certainly there is no better treatment available at present for the recent case. If given early it also leaves time for proper consideration of leucotomy, which should be done *after* the failure of insulin and E.C.T., in the first two years of illness if possible. So superior do the results of insulin appear compared to E.C.T. or electronarcosis, that I think those doctors who still substitute these treatments routinely for insulin in early recoverable schizophrenia must more than ever realize they are doing a very serious thing from the patient's point of view. Nor is there really convincing evidence as yet that modified insulin can be an effective substitute for deep coma.

While I have little to add to what I said about the selective indications for insulin at a meeting of the Royal Medico-Psychological Association in 1947, I would like to make the plea again that I first made in 1941—namely, that when hospitals have no facilities for insulin, suitable patients should be transferred to hospitals that have, or, alternatively, that special regional treatment centres must be established, as was done by the Emergency Medical Service for the treatment of an equally terrible mental disorder—general paralysis of the insane—during the recent war. My clinical experiences of insulin treatment in the past thirteen years have confirmed what statistics also now bring home to us every day more forcibly, namely, the tragic suffering that has been caused to so many hundreds of patients—many of whom have now become hopelessly chronic—through lack of such provisions.

Turning to the indications for E.C.T., the situation is more confused in some minds. This form of shock therapy has proved so successful in certain mental illnesses and is so easily carried out, and applied to all and sundry, that the same clinical mistakes are being made by some of its advocates as are being made by the too enthusiastic advocates of psycho-analysis or Christian Science—namely, that in greater or smaller doses it can be hopefully applied to all sorts and types of illness with prospects of some sort of success. At the same time a blind eye is being too conveniently turned to all the misery and abject terror that this weapon produces when treatment is given to the wrong patient, or at the wrong time in the illness, or in the wrong doses, or erroneously repeated when there is no evidence of success in previous treatments, nor any evidence that the conditions for expecting success have materially changed. In recent correspondence in the *British Medical Journal* we have had a psychiatrist feeling that there is little harm in long repeated courses on patients admitted to mental hospitals, but no specific indications were given as to those who are to be selected for this terrifying practice, as though this were not the most important point of all if any public discussion of such a formidable suggestion is undertaken.

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My remarks will mostly concern those patients able to be treated with E.C.T. as out-patients, in neurosis centres, or in beds in general hospitals, but this group overlaps those treated in mental hospitals to a very considerable extent at the present time because of the tendency of some mental hospital superintendents, who may also control all the general hospital out-patient psychiatric treatment clinics for a wide area, to insist on such patients going into mental hospitals for this treatment. Many of these patients can, however, have the E.C.T. given as out-patients in these general hospital clinics with many advantages to all concerned.

If I am dogmatic in some of my indications for E.C.T., it is because it has been my good fortune to have been able to run an out-patient E.C.T. department for nine years now—first at St. George's Hospital and, since 1942, at the West End Hospital for Nervous Diseases. Fifteen thousand patients have also been through the wards of Sutton Emergency Hospital (Belmont Hospital) in the last ten years, which provided opportunities of using E.C.T. in a very wide and varied selection of different types of patient, from recent neurosis to acute and chronic psychoses. A year in the U.S.A. in 1947 and 1948 gave me the opportunity to compare results and practice over there with our own, and since taking up my present post at St. Thomas's Hospital I have been able to compare out-patient treatment done previously in the more usual set courses with a more conservative treatment of the same patients in subsequent relapses.

In my opinion there is one unquestionable indication for E.C.T. and that is in the treatment of certain states of depression, and such depressions must have certain symptoms present if success in treatment is to be anticipated. Patients should get to sleep fairly easily, but wake up early ; and they should improve somewhat in their depression as the day progresses, though they may feel worse again towards bedtime. Where patients with depression show the opposite rhythm, getting to sleep with difficulty but not waking for the rest of the night, when sleep is not disturbed by the illness, or when the patient feels worse in the afternoon than in the early morning, the results with E.C.T. are much less certain, and it may well make the patient much worse rather than better. Older patients generally do better than younger ones with E.C.T., and " involutional " depressions without paranoid or hysterical features do best of all—provided they have the daily rhythm of mood disturbance already stressed.

In the depressed phase of the manic-depressive psychoses and in periodic depressions with a known rhythm of illness, the timing of the treatment is also of quite vital importance. To give treatment too early in the attack is often to waste treatment and to inflict unnecessary additional suffering, especially if long courses are used at this time. The patient often does not improve or relapses quickly, needing perhaps another short course nearer to the time of expected spontaneous remission. I wish I had time, for instance, to detail the patients I have seen who, having responded to E.C.T. at a later stage of an attack of depression, are then promised relief by psychiatrists if they will come again early in a subsequent attack. This has not then happened, and the patient despairs of further treatment when offered later at a time when it is likely to be effective. Patients have also been sent to me for opinion on the

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desirability of leucotomy when all they have really needed was one or two more E.C.T.'s given later in the course of a depressive episode following failure of a first course earlier in an attack.

Turning to some other suggested indications: in America I found opinions on the treatment of manic patients as divided as they are in this country, with a growing feeling that manic attacks are often perpetuated as well as shortened by the unwise use of E.C.T. In schizophrenia, E.C.T. should usually be only adjuvant to insulin, and then best given in light coma or sopor when expected remission is hanging fire, or depressive or stuporose features are prominent in the total picture. Long courses of E.C.T. as a substitute for insulin in schizophrenia have so far found no statistical or clinical justification, and are generally advocated by those who have had little personal experience of working in an insulin coma unit and, therefore, of themselves using both methods.

Although I have not used the heroic courses advocated by some workers, I have never seen good results from E.C.T. in anxiety states, obsessional neurosis or hysteria, unless there was a depressive component, and even then results are not comparable to those achieved in the retarded depressions. It is, however, a tragic everyday experience to meet with the survivors of ordinary and intensive treatment of neuroses with E.C.T. who have had yet further symptoms added to their previous disabilities. These may take the form of memory defects, depersonalization, increased anxiety, or greatly increased general emotional lability. Among my follow-up patients I have had those who have subsequently recovered with leucotomy, but who still complained bitterly of persisting memory upsets from prior long courses of E.C.T. often given and continued with no real indication that they were ever likely to be of help.

No survey of E.C.T. and its indications can be considered complete without a further reference to the manner in which it should be given. This weapon, capable of bringing so much mental peace or frenzied terror to the patient, is often being handled at the present time like a recipe for cooking—the same ingredients to be put in every dish served up. As the main indication for E.C.T. is the treatment of retarded depressions, let us also not forget that often these depressions clear up spontaneously with time. All we may have to do is to get the remission under way and coax it along gently with suitable spaced treatments. At the West End Hospital, involutional depressives have been found to clear up with as few as four fits, given at weekly intervals, and even with less than this. On admission to some hospitals, this same type of patient may be given three fits a week and up to ten fits in a course, and then also need another fortnight or more to get over the severe memory changes induced so unnecessarily. These remarks do not apply to the very severely agitated depressions, but I often wonder whether many of the usual run of depressives do not take about a month to remit with E.C.T., and the number of fits considered necessary may often depend on the number per week the doctor chooses to apply. I do know that patients often have far more fits than they really need, and if only doctors are not too desirous of always pressing the button twice or thrice a week, and are content to use E.C.T. to help along the patient's natural tendency to remission in sparing doses, much misery can be avoided.

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We have found the giving of one E.C.T. a week for two weeks a good practice to adopt in out-patients whose anticipated response to E.C.T. is uncertain. Also the relatives are asked to observe the patient's response to each fit. If the patient is somewhat better for 24–48 hours after each fit and then relapses, one can carry on with treatment. If, however, the patient feels worse and seems worse for 24–48 hours after a fit, but is then better again for the rest of the week, the doctor has to be very careful that he is not mistakenly treating an anxiety state with reactive depression, and so running the risk of making the patient's condition even worse if he proceeds with a full course of E.C.T. We have found this over some years now to be a most useful therapeutic test taken in conjunction with other clinical indications.

Lastly, I would deprecate the school of thought which feels that intensive E.C.T. can replace leucotomy or has any of the major beneficial effects of this operation. E.C.T. is predominantly the treatment of depression and mental retardation, and leucotomy of chronic anxiety and obsessional tension. E.C.T. often flares up conditions relieved by leucotomy, while leucotomy can precipitate such disasters as attacks of mania in patients with recurrent endogenous depressive psychoses who have had the operation instead of properly spaced E.C.T. in their attacks. While there is some overlap in patients with mixed pictures, the time has surely come when we should try to distinguish with greater certainty the respective indications for E.C.T. and leucotomy, which are generally so different, and not go from one to the other on a crude conveyor belt system of treatment.

If E.C.T. is used sparingly, selectively and cautiously, it is still one of the most valuable treatment weapons we possess. If it continues to be tried as a treatment for all types of patients who do not happen to respond to simple psychotherapy—by no means an uncommon attitude to-day—then less total suffering might result from its abolition than its continued employment in the future in routine psychiatric practice.

Intensive E.C.T.

By E. Stengel, M.D.

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In trying to contribute to this symposium one can either comment, in the light of one's own experience, on what the principal speakers say about indications in general, or one can pick out a special problem which requires clarification. I have chosen the latter course. I propose to report on some observations on the effect of " intensive E.C.T." By this I mean the administration of two to four shocks on successive days over a period of a week or two, which aims at producing a confusional state with deep clouding of consciousness. It is the method that has been advocated in this country by Milligan. Cerletti devotes a section of his report to this method. According to him, it was Bini who first employed it. He noted that it resulted in a temporary and almost complete annihilation of mental life. Cerletti calls it annihilation therapy, *l'anéantissement*. Nobody who has carried out or witnessed this treatment will deny the aptness of the term. American writers have called it

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