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LOGICAL REASONING

AND

CLINICAL MEDICINE

by

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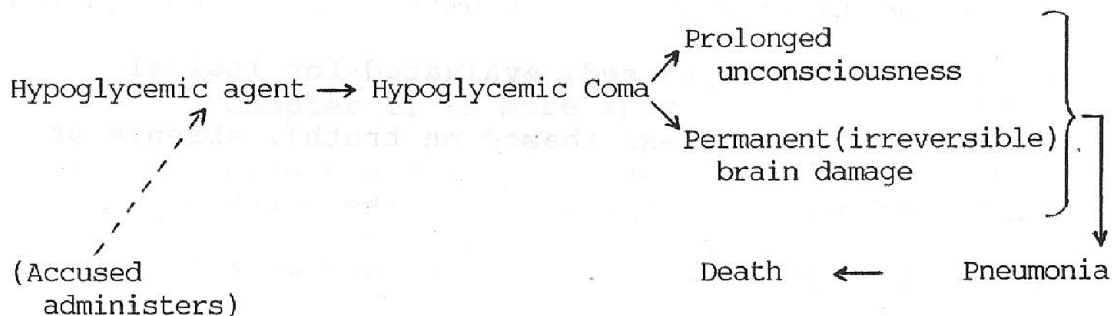
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## ABSTRACT

From a multiplicity of what was seemingly characterised as expert medical evidence and opinion given and expressed in the course of a trial at bar holden in Colombo: State v. Rev. Mathew Peiris, 1984 (and contained in a Judgement (abbreviated 'Jt.')) this study has attempted to extract from that Judgement just those proofs (arguments designed to demonstrate) of those events which would prima facie provide grounds for a charge of murder in respect of two deaths - those of Russel Ingram and Mrs. Eunice Peiris. These events, connected as by a causal chain, were many, and were uncannily similar in regard to both deceased. These essential events, connected in the style of a causal chain with an arrow '→' indicating causal influence, were:



The immediate (medical) cause of death (in each instance) was pneumonia, the legal cause, the administration (in each instance) of a hypoglycemic agent (called glibenclamide) by the accused to the deceased. The administration of the drug was considered by the medical witnesses to be 'sufficient in the ordinary course of nature to cause death'

(in each of the two instances). Accordingly, the proofs for the occurrence of each of these essential events in each of the deceased is automatically the subject of critical inquiry and so too the causal nexi claimed to have existed between these events. Thus, in the reverse order of the causal sequence, is critically inquired into the events: death, pneumonia, prolonged unconsciousness, permanent brain damage, hypoglycemic coma; their separate proofs and proof of their different causes. Other, less essential/minor, effects, eg. bed sores, dehydration, etc. also receive some attention. The critical inquiry necessitated a digression into the meanings of terms (semantical considerations) and these have been attended to.

Each essential (and less essential/minor) event is made part of (speaking logically) an argument, ie. a conclusion, and the argument for the conclusion then logically appraised, evaluated for logical correctness, soundness (based on truth), absence of fallacies and so acceptability. The worth of the arguments ranging from nil, weak, and moderate to strong, very strong and deductively valid is assessed in respect of the different arguments presented. Interestingly, the moderate, strong and very strong arguments presumably have their counterparts in the legal notions of proof on a "balance of probabilities", "beyond reasonable doubt" and "beyond all reasonable doubt" respectively. Only those arguments assessed as

deductively valid and strong were considered as being of adequate standard for the needs of medical diagnosis and for the needs of Court in criminal proceedings. The results of the appraisal revealed that many of the medical opinions were inadequate, unacceptable by the standards set.

Chapter I deals, in a preliminary and general sort of way, with such matters as: Medicine and Truth (theories, notions and the ways/methods of searching for it); Rational, Reason, Reasoning and Inference (including varieties of inference); Logic and Argument (identification, layout, appraisal and purposes); Logic and Medicine; Proof (layout, appraisal, standard or quantum of proof, etc.), including too some aspects of probability relevant to proof. Finally to the Aims and Methods of study, ending with some comments of an explanatory nature.

Chapter II is more specific and deals in turn with expert medical testimony and opinion, medical diagnoses (diagnosis = opinion) regarding which the matter of particular/singular occurrences and those matters concerning proofs of particular/singular statements and of particular/singular causal statements assume considerable significance. These are the subject of comment/discussion and are additionally dealt with in connected Annexures (to be found along with all other Annexures after the end of Chapter V).

Chapters III and IV deal with the logical appraisal of the several proofs concerning the deaths of Russel Ingram and Mrs. E. Peiris, respectively and provide the bulk of the material of this study.

Finally, to Chapter V which: (a) summarises those (traditional/classical and newer) logics which are used and needed in medical reasonings, (b) summarises the weaknesses/fallacies in argument evidenced in Chapters III and IV which are, on occasion, generated by failure to use these logics and (c) adds an explanation for some of these failures. Additionally Chapter V summarises the causal (and statistical) notions which play so important a part in medical reasonings (evidenced here). Some researchable areas are identified. The implications (drawing on the results of this study) in respect of expert medical opinion, medical diagnoses and medical education form the concluding parts of this Chapter, which ends with some remarks pertaining to the generalizability of the results of this study.

The study makes a case for reasoning at the highest achievable standard of logical reasoning - deductive (ideally), leaving/making room/allowance for uncertainty by way of contingent premises. Alternatively, where this standard cannot be met then, inductive reasoning using the highest standards of

support (very strong, strong) for the conclusion.

Be it from a health/disease/death aspect (medical/  
medico-legal) or a justice/injustice aspect (legal),  
that no lesser standard of reasoning is justifiable or  
acceptable becomes apparent.