

the flame is facilitated by the changing gas composition. In such patients the time taken to blow out the match is a sign of impaired function. Indeed the time taken to blow out a match might be a better index to use than success or failure. In order that a match be blown out in one second it is necessary, as can be seen from figure 1, that the gas velocity exceeds about 4 meters/second with room air or 3 meters/second with 15 per cent O<sub>2</sub>, 5 per cent CO<sub>2</sub>, 80 per cent N<sub>2</sub> which approximates expired gas.

The volume flow corresponding to any velocity depends on the cross sectional area of the open mouth. In 10 randomly selected young men this was found to average 8.9 cm.<sup>2</sup> At a velocity of 3 m./second, through a mouth of this size, volume flow is 2.66 liters/second. This is in general agreement with the published estimates. Thus Snider<sup>2</sup> found that the mean value for the one second vital capacity of those subjects who could extinguish the match was 2.49 liters with a standard deviation of  $\pm 0.57$  liters. The mean value of the one second vital capacity for those who could not blow out the match was 0.97 liter with a standard deviation of  $\pm 0.47$  liters, *i.e.*, about one third as much. Olsen<sup>1</sup> found subjects with maximum breathing capacities less than

40 liters/second, *i.e.*, about one-third normal failed to blow out matches.

It is apparent from the standard deviations in figure 1 that the match blowing time varies considerable even under the standardized conditions used here. The match blowing performance of patients seems to be somewhat more variable and assessments should be based on the average performance with several matches. Despite these limitations, the match blowing test seems to be a useful, simple, rough test of ventilatory functions.

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#### REFERENCES

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2. Snider, T. H., Stevens, J. P., Wilner, F. M., and Lewis, B. M.: Simpler bedside test of respiratory function, *J.A.M.A.*, 170: 1631, 1959.
3. Marks, A. D., and Bocles, J.: Match test and its significance, *South. Med. J.* 53: 1211, 1960.
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## Anesthesia Data Sheet

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A summary sheet for the tabulation of anesthesia clinical work, departmental or individual, is herein submitted. This sheet provides a ready reference for data pertaining to number of cases done, number of times various agents or techniques are employed, and number and type of complications.

As can be seen from the illustration, the principal vertical column is the one labelled "Agent and Technique." The initial entry is recorded, once only, to the left beside the

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respective agent or technique in the "Number" column. Other vertical columns are for the listing of complications, specific and by systems, in the appropriate boxes. Particular complications for each agent can be totalled in the individual spaces. The total number of times each agent or technique is used can be obtained by adding the entries in the "Number" column and recording in the proper box in the "Totals" column at the right side. The number of complications by type and system are added vertically and listed in the respective blocks at the bottom of the sheet.

COMPLICATION INDEX

Month Number	Agent or Technique	Respiratory			Circulatory			G.I.		G.U.			Neuro-Muscular				Misc. Spinal Cord Control	Totals		
		R.L.	Ob.	Inf.	Tr.	H.E.	H.O.	Arr.	Diat.	N.E.	Diat.	Sup.	Dep.	Dis.	P.	C.				
	I.V.																			
	Cyclopropamine																			
	Ether																			
	Fluoromar																			
	Fluothane																			
	Nitrous Oxide																			
	Penthrane																			
	Sp.																			
	Obstetrics P.																			
	Cy.																			
	Sed.																			
	Heart Lab Cen.																			
	X-Ray																			
	E.R.																			
	Rec. Block																			
	Sphal																			
	Epidural																			
	Relax. & Misc.																			
	Totals																			

Abbreviations used on data sheet:

Vertical column:  
 I.V.—Intravenous  
 Sp.—Spinal  
 Sed.—Sedation  
 Gen.—General  
 E.R.—Emergency Room

Horizontal column:  
 Reg.—Regional  
 Relax.—Relaxant  
 Misc.—Miscellaneous

Horizontal column:  
 R.I.—Insufficiency  
 Ob.—Obstruction  
 Inf.—Infection  
 Tr.—Trauma

Horizontal column:  
 H.E.—Hypertension  
 H.O.—Hypotension  
 Arr.—Arrhythmias  
 Diat.—Distention

Horizontal column:  
 N.E.—Nausea, Euphoria  
 Sup.—Suppression  
 Dep.—Depression

Horizontal column:  
 Dis.—Disorientation  
 P.—Paralysis  
 C.—Convulsion

Horizontal column:  
 An.—Anesthesia  
 Cy.—Cyanosis

Small straight lines are made for each entry. Each fifth entry in a particular block is a small diagonal line through the previous four. This facilitates subsequent addition. Initial entries are made immediately upon completion of the case. Latent complications in the postoperative period possibly related to the anesthetic management are also recorded. Serious or rare

complications may be described in detail on the reverse side.

The size of the sheet may vary according to the amount of clinical work done or with the information detail that is desired. These sheets, 8½ by 11 inches, are a convenient size for mimeographing, and the amount of detail seems optimal for our use.

## Postanesthetic Scoring System

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During the course of recent investigations we were confronted with the problem of observing, tabulating and presenting in condensed form the postanesthetic course of a large number of patients. Since this contingency is a common one and since it has been solved to our satisfaction in this department, we thought that others in the specialty might also be interested to learn about it.

The idea of ranking patients by scores is of course nothing new. In anesthesiology it finds its widest use in the Apgar score for the newly born. In the present system we have

selected the rank boundaries in such a fashion that optimum scores should be attained only by exceptionally successful anesthetics, the mid-zone should indicate definite complications and graduations should be available for the rare but more serious sequelae.

We have found it convenient to score our patients on the second, the fifth and on the fifteenth day following surgery. During the first two visits the entire period between operation and first visit or between the first and second visit was reviewed and ranks were assigned according to the maximum reached at any time within this period. The final score (which was derived more often than not from

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H.N.D. POSTANESTHETIC SCORING SYSTEM

	0	1	2	3	4	5
Circ.	BP stable. Pulse always under 100	BP-change less than 30%. Pulse 100-120	Vasopressors OR Digitalis	BP under 100 in spite of treatment	Decompensated	Severe shock
Resp.	Rate under 15. Breath-holding more than 25 sec.	Rate 15-20. Productive cough	Rate over 20, rates OR temp. up to 100°	Temp. over 100°, partial atelectasis	Major atelectasis	Pneumonia
C.N.S.	Amnesic, satisfied	Confused OR recalls induction	Dissatisfied with anesthesia for any reason	Extrapyramidal signs	Major neurological complications	Coma
G.I.	Nothing	No more than 3 episodes of nausea	Nausea, vomited once only	Vomiting	Ileus	Evisceration OR perforation
Renal	Urines over 800 cc.	Over 800 cc. per catheter	Urines 500-800 cc.	500-800 cc. per catheter	Under 500 cc.	Anuria