# MINUTES OF THE SPECIAL ADVISORY COMMITTEE GENERAL SURGERY 11 DECEMBER 2001 2.15 PM - 5.00 PM ROOM C3.18, CASTLE BUILDINGS

#### PRESENT

### DSPH/REPRESENTATIVES

Mr B G Best

Mr C Bell

Prof Campbell

Mr B Craig

Mr T Diamond

Dr L J Fon

Mr D Gilroy

Mr J Hood

Mr R Johnston

Dr A Leonard

Mr E J Mackle

Dr J McCall

Prof D R Marsh

Mr F J Mullen

Mr W J I Stirling

Mr A R Wray

Mr G Marshall

Mr J McGuigan

Prof J Watson

Dr J McCall

#### Department

Dr H Campbell (Chairman)

Dr P Darragh

Dr N Chada

Dr P Woods

Mrs J Henry (Secretariat)

1. ITEM 1 - APOLOGIES

2. ITEM 2 - MINUTES OF THE PREVIOUS MEETING - PAPER 2/01

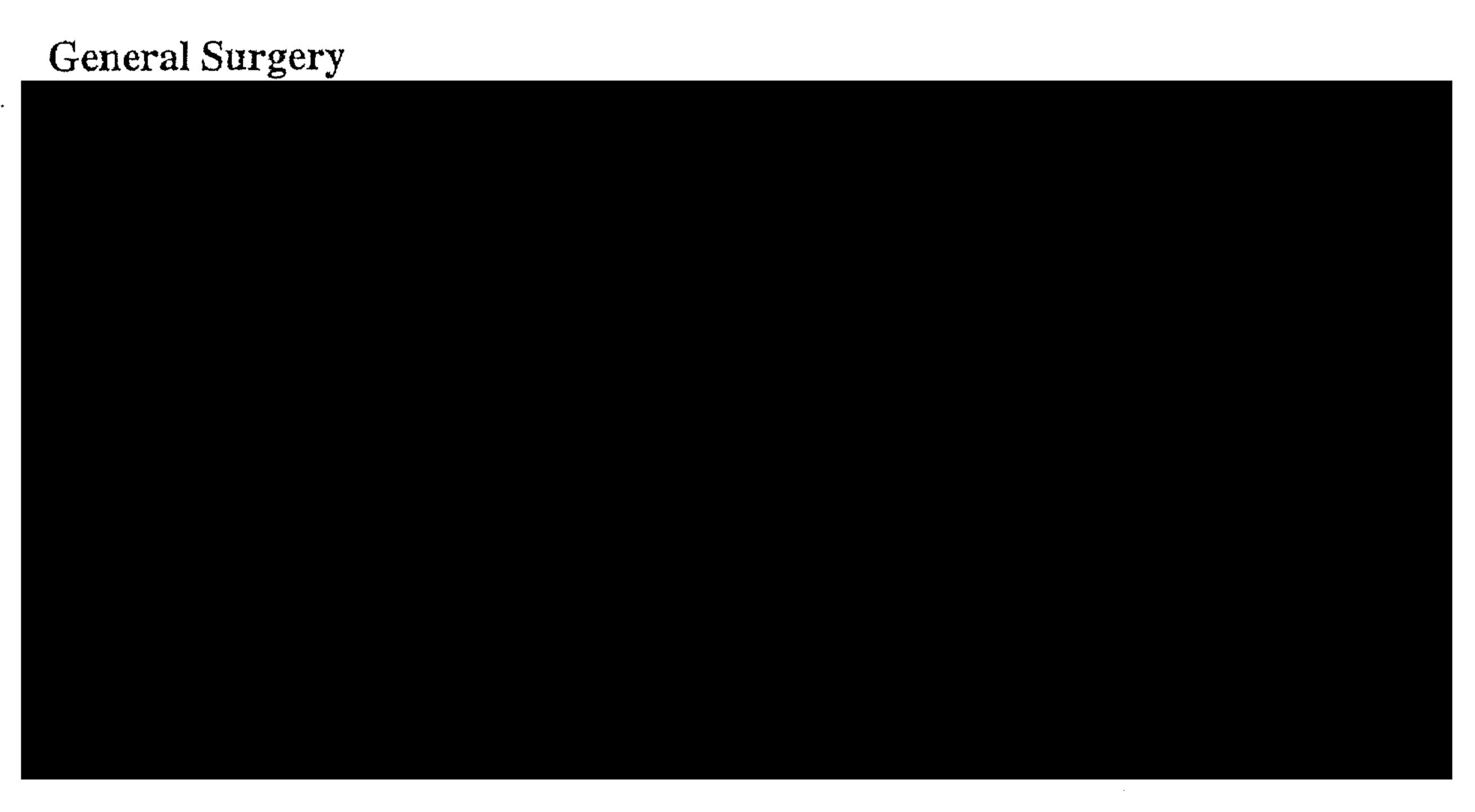


3. ITEM 3 - THE ACUTE HOSPITALS REVIEW GROUP - PAPER 3/01



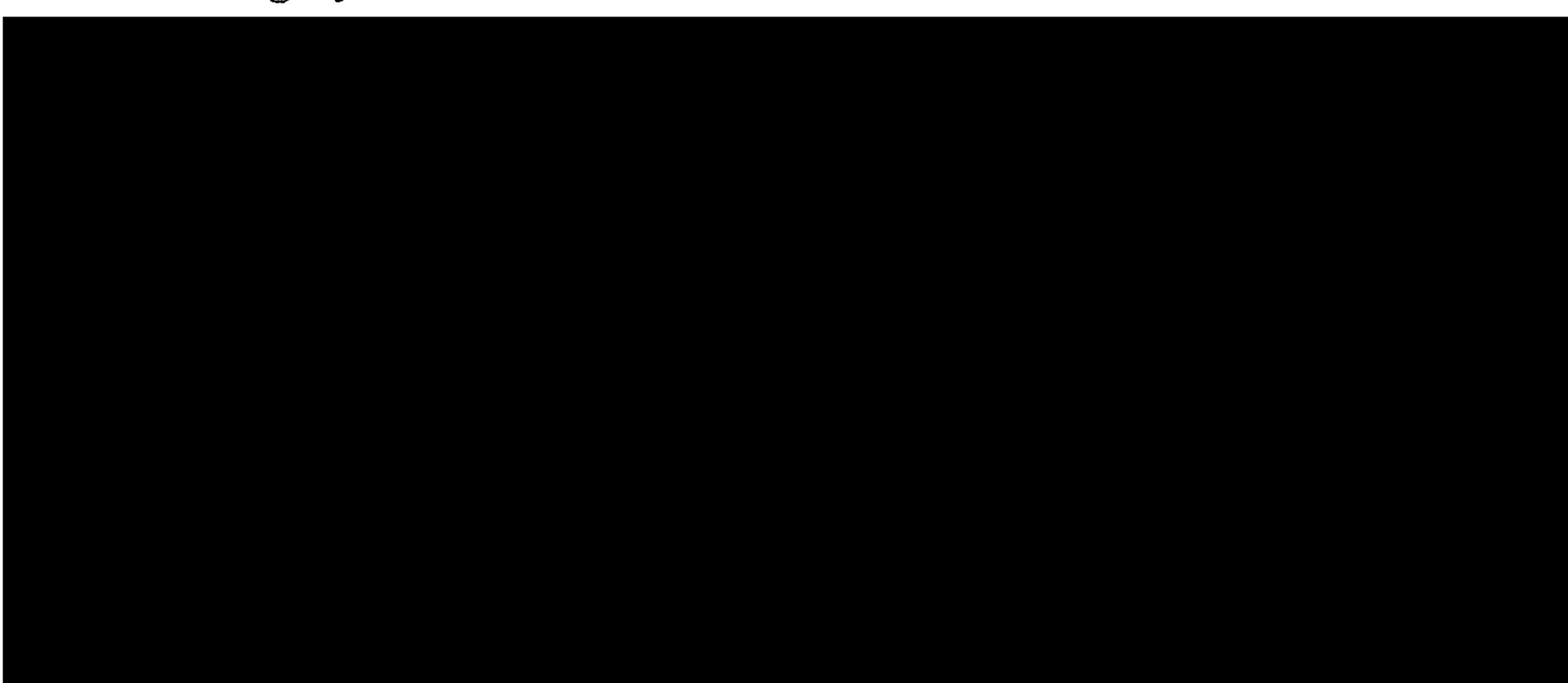
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4. ITEM 4 - WORKFORCE PLANNING - PAPER 3/01



Urology

Plastic Surgery



Cardio-thoracic Surgery

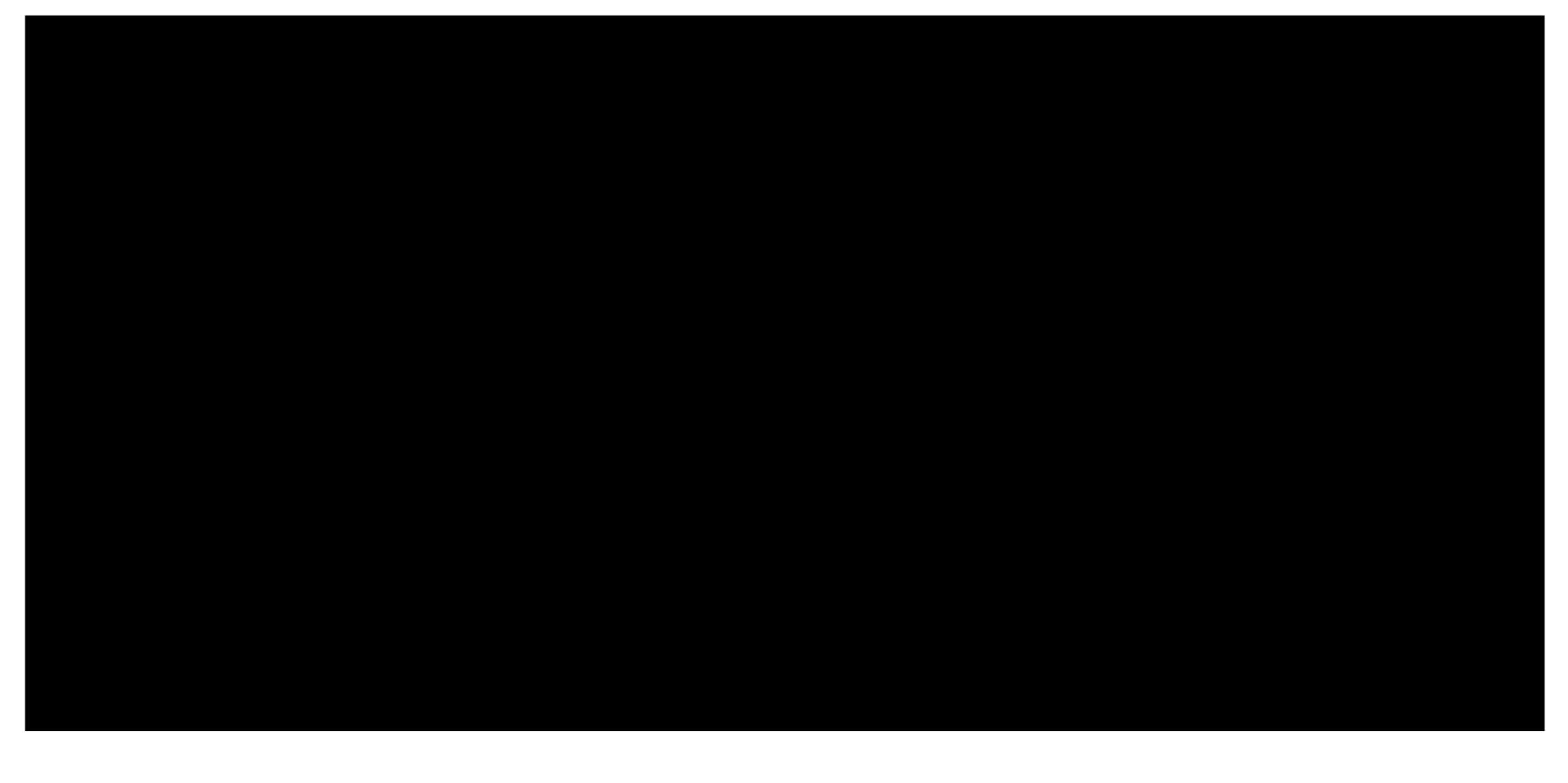


Neurosurgery



Paediatric Surgery

Orthopaedic Surgery



A & E Medicine

5. ITEM 5 - MANAGEMENT OF HYPONATRAEMIA - PAPER 6/01

The guidelines on the management of hyponatraemia were commended by the group. Dr Leonard asked that the guidance be circulated to Accident and Emergency departments.

It was also felt that the guidance could be made more explicit in general and particularly in the use of 1/5 normal Saline.

It was also felt that the guidance should state who should prescribe fluids as well as monitor the patient.

6. ITEM 6 - MANAGEMENT OF FRACTURES

7. ITEM 7 - BETTER BLOOD TRANSFUSION SURVEY - PAPER 7/01



8. ITEM 8 - DECONTAMINATION OF SURGICAL INSTRUMENTS - PAPER 8/01



9. ITEM 9 - MANAGEMENT OF POSSIBLE EXPOSURE TO vCJD THROUGH MEDICAL PROCEDURES - PAPER 9/01

Plastic Surgery Review



10. ITEM 10 - PROGRESS ON QUALITY AGENDA - PAPER 10/01

This paper was noted by the committee.

075-084-343

# PREVENTION OF HYPONATRAEMIA IN CHILDREN RECEIVING INTRAVENOUS FLUIDS

#### INTRODUCTION

- Hyponatraemia most often reflects failure to excrete water. Stress, pain and nausea are all potent stimulators of auti-diuretic hormone (ADH), which inhibits water excretion.
- Hyponatraemia is potentially extremely serious, a rapid fall in sodium leading to cerebral oedema, seizures and death.
- Complications of hyponatraemia most often occur due to the administration of excess or inappropriate fluid to sick children, usually intravenously, but potentially with excess dilute oral fluids.
- Hyponatraemia can occur in a variety of clinical situations, even in children who are not overtly "sick". Those at particular risk include:
  - Post-operative patients.
  - CNS injuries
  - Bronchiolitis
  - Burns
  - Vomiting

## BASELINE ASSESSMENT Before starting IV fluids:

- Weight: accurately in kg. [In a bed-bound child use best estimate.] Plot on centile chart or refer to normal range.
- U&E: take serum sodium into consideration.
- Fluid needs: calculate accurately including:

Maintenance Fluid

For first 10kg – 4 mls/kg/hr

For second 10kg – 40mls + 2mls/kg/hr

For each additional kg - 60 mls + 1ml/kg/hr

Replacement Fluid

Must always be considered and prescribed

separately.

Must reflect fluid loss.

Must replace loss with most appropriate fluid.

#### MONITOR

- Clinical state: including hydrational status. Pain, vomiting, general well-being should be documented.
- Fluid balance: must be assessed at least daily by an experienced member of clinical staff.

Intake: All oral fluids (including medicines) must be recorded and IV intake

reduced by equivalent amount.

Output: Measure and record all losses (urine, vomiting, diarrhoea, etc.) as accurately as possible

- Biochemistry: Regular blood sampling for U&E may be difficult but remains essential.
  - At least once a day but more often if there are significant fluid losses or if clinical course is not as expected.
  - The rate at which Na+ falls is as important as the actual plasma level. A Na+ that falls quickly may be accompanied by rapid fluid shifts with major clinical consequences.
  - Consider using an indwelling heparinised cannula to facilitate repeat U&Es.
  - Do not take sample from the same limb as the IV infusion.
  - Capillary samples are adequate if venous sampling is not practical.
  - Urine osmolarity/Na: Very useful if hyponatraemic. Compare to plasma osmolarity (measure or calculate:= 2Na + 2K + glucose + urea) (Algorithm to follow.....)

#### CHOICE OF FLUID

Fluid and electrolyte requirements vary as a function of metabolic activity.

- The choice of maintenance fluids will be influenced by anticipated sodium, potassium and glucose requirements.
- The choice of replacement IV fluids will depend on replacement needs, eg fluid loss for vomiting etc.

Hyponatraemia may occur in children receiving any IV fluid. Vigilance is needed for all children receiving fluids.

#### SEEK ADVICE

Advice and clinical input may be obtained readily from a senior member of medical staff including:

Consultant Paediatrician Consultant Anaesthetist Consultant Chemical Pathologists

• In the event of problems that cannot be resolved locally, help should be sought from consultant paediatricians/anaesthetists at the PICU, RBHSC.

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