

Haematuria in children & young people

Management for UECC Paediatric ED patients

Definition – More than 5 RBC per high power microscopy field
1ml of blood in 1L of urine is enough to cause visual changes in urine
4% school aged children have asymptomatic haematuria

Haematuria + proteinuria – May indicate a likely renal pathology. However, minimal amounts of haematuria and/ or proteinuria up to 1+ (of either) are extremely common with intercurrent illnesses or with dehydration.

Urine microscopy – would confirm presence of RBC & cell morphology (RBC casts/ dysmorphic RBC indicate Glomerular disease)

In the absence of UTI or Trauma or PV or PR bleed contamination - Anything more than **Trace** of Blood in Urine Dip, would need follow up & investigations.

Initial Assessment

Perform a focussed history & examination

Concerning Symptoms

Painless haematuria – glomerular disease or more sinister causes

Fever

Abdo pain

Reduced UOP

Oedema – face, abdo, peripheries

Rash

Joint pain

Recent infections – Tonsillitis, LRTI, Skin, UTI (PIGN, IgA Nephropathy, Alport Syn)

Loss of hearing

Fever, weight loss, night sweats – autoimmune or more sinister causes like cancer

Headache, visual disturbances – due to hypertensive nephropathy

PHx - Haematuria/ red urine (not investigated), bleeding disorders, immunodeficiency

Family Hx – renal disease, hearing loss, renal stones, sickle cell Dx, bleeding disorders

Concerning Signs

High BP - >95th centile for age. Ref to below age based BP chart

Fx of fluid overload (raised JVP, pulmonary oedema, peripheral oedema)

Abdominal tenderness, ascites, masses, renal angle tenderness

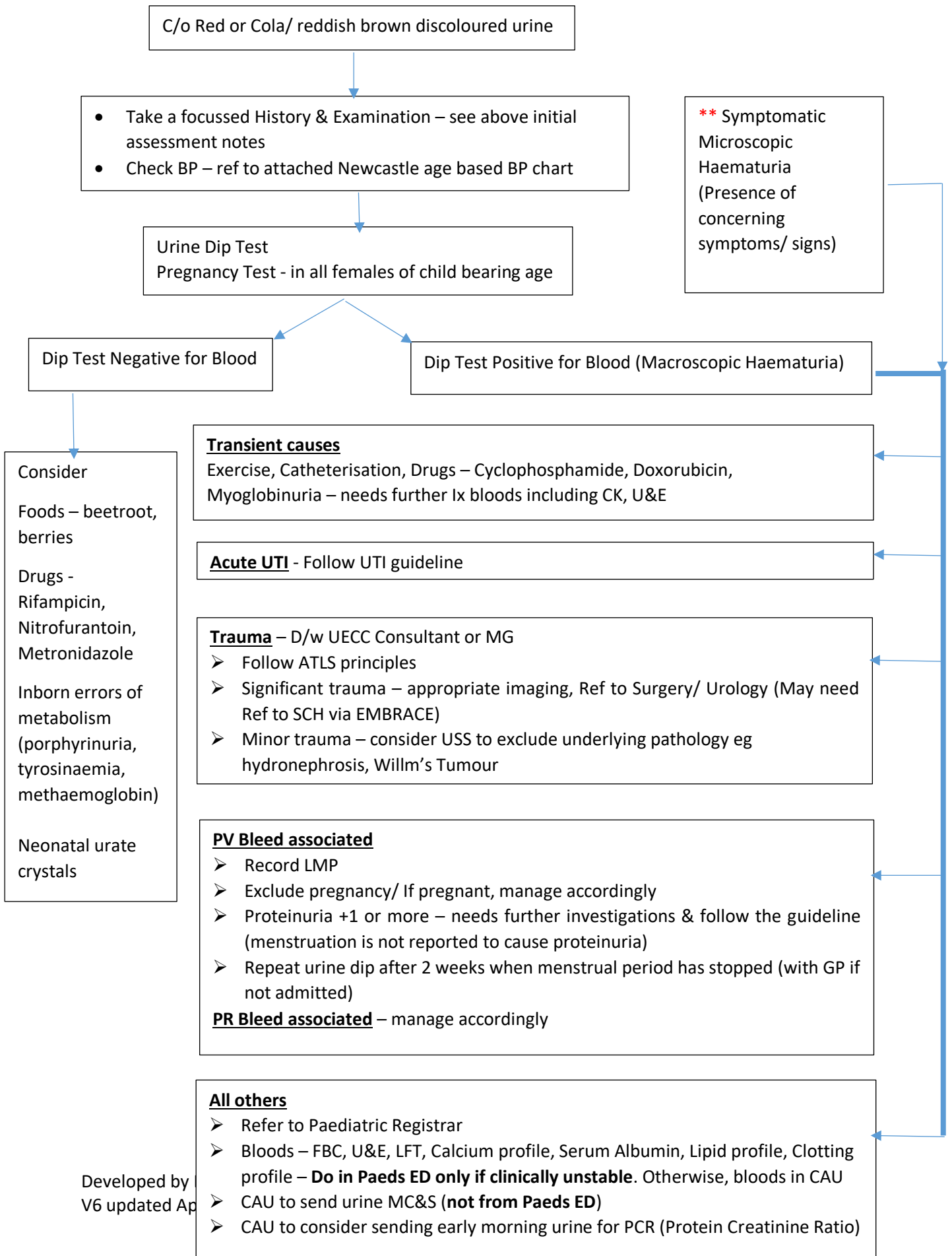
Joint swelling, erythema

Rashes - purpura/ petichiae

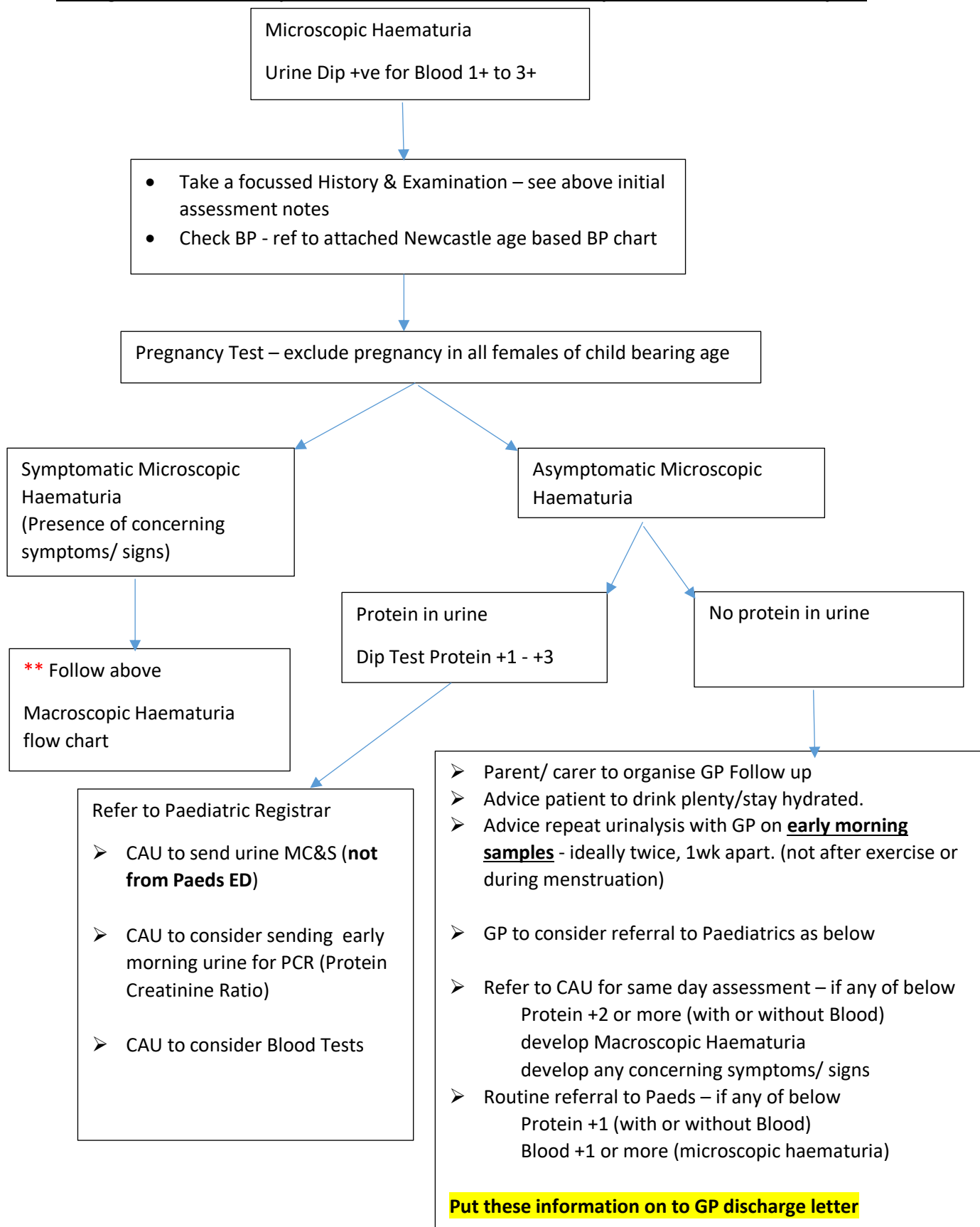
Colour of urine – Bright Red suggest lower tract bleed/ Cola colour suggest glomerular bleed

External genitourinary & perianal inspection – look for frank blood at urethral, vaginal & anal openings, inflammation, FB, **features of abuse**

Management of Macroscopic Haematuria – Red discoloured Urine



Management of Microscopic Haematuria – Positive on Urine Dip Test for Blood not visibly red



Isolated Proteinuria in children & young people

Management for UECC Paediatric ED patients

May be seen in up to 10% of school aged children

Usually benign – could be transient or orthostatic

However, may indicate an underlying renal or systemic disorder (especially persistent proteinuria)

Red Flags

High BP - >95th centile for age. Ref to below age based BP chart

Oedema

Reduced urine out put

Abnormal renal functions

Persistent proteinuria (previous history of proteinuria)

Urine protein creatinine ratio (PCR) > 0.2 (>0.5 in 6-24months old)

False positive proteinuria can be seen in:

Alkaline urine (pH >8).

Concentrated urine.

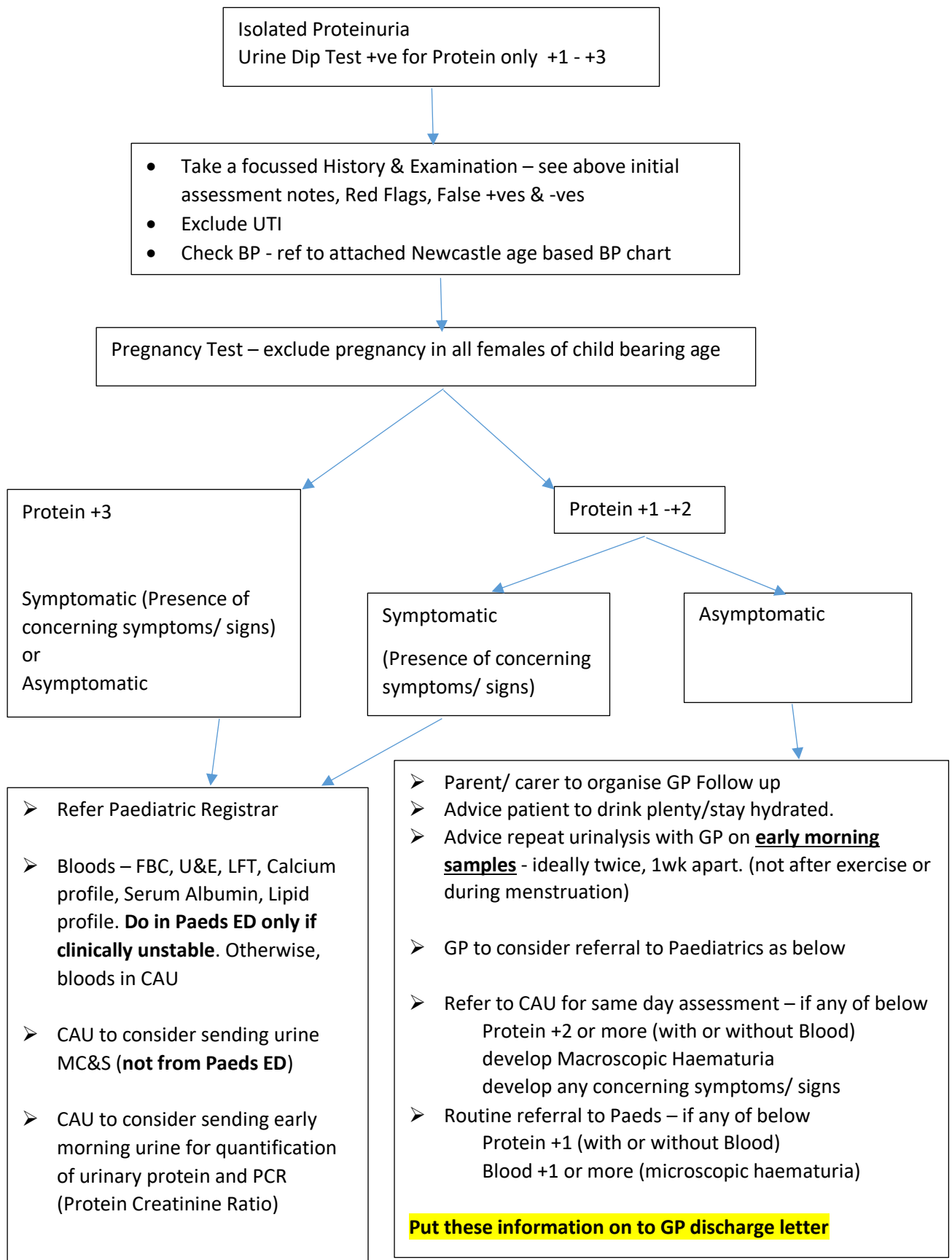
Gross haematuria.

Bacteria or pus in the urine (UTI)

False Negative proteinuria

Acidic urine (pH < 4.5).

Dilute urine (specific gravity less than 1.010).

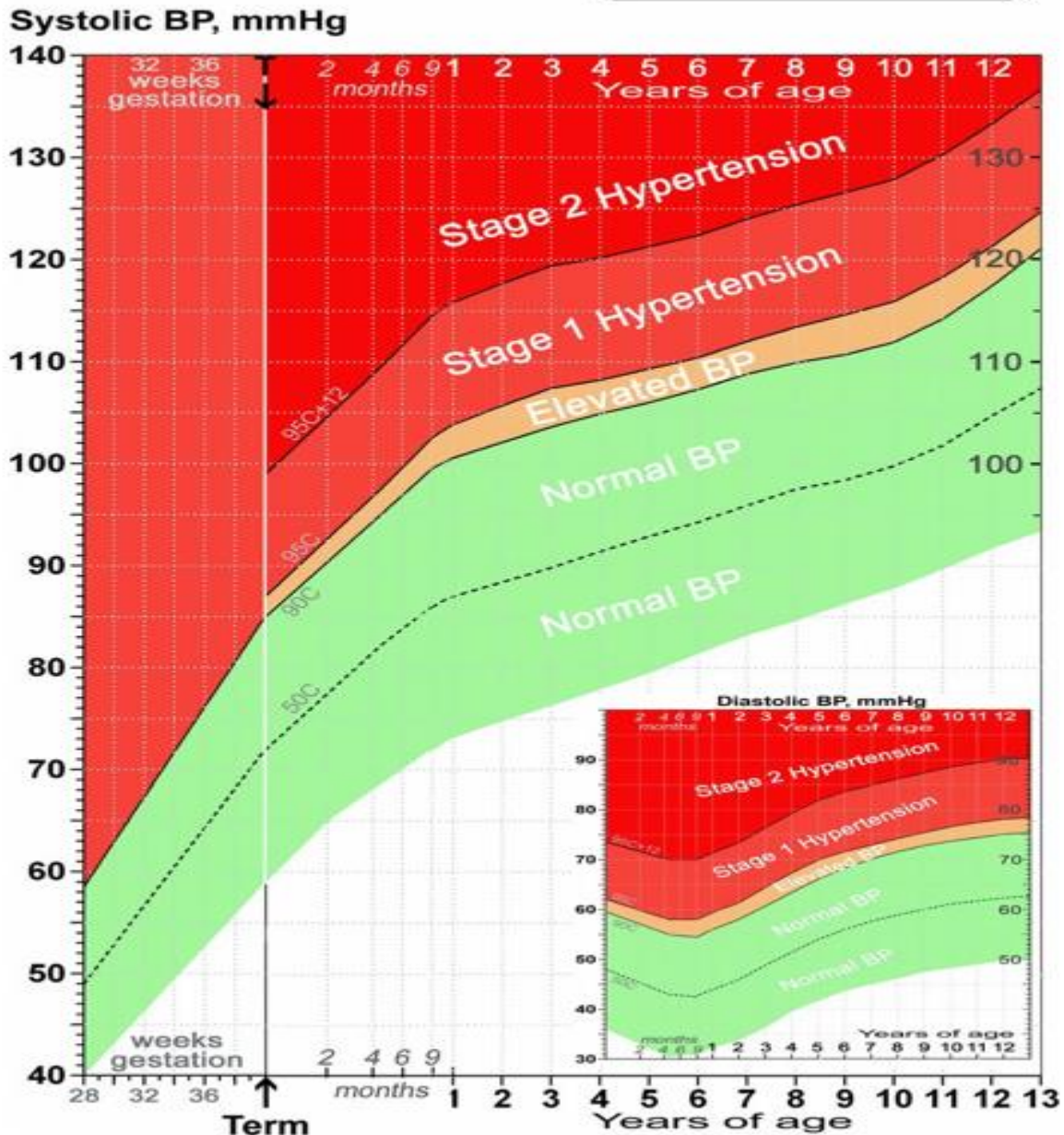


Children's BP chart from 28 weeks' gestation to 13 years.

Children's Blood Pressure Chart

See over page for guidance on completing

Patient details
or
sticker



"Reproduced from Single blood pressure chart for children up to 13 years to improve the recognition of hypertension based on existing normative data, Coulthard, M.G, Epub ahead of print, 2020, with permission from BMJ Publishing Group Ltd."

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References

Sheffield Children's Hospital Emergency Department Hand Book

Nottingham University Hospital (EMEESY) Haematuria guideline