Government of **Western Australia**
WA Country Health Service

ACUTE POST-STREPTOCOCCAL GLOMERULONEPHRITIS

Kimberley Public Health Guidelines

Final
July 2018

Introduction

In 2014, an outbreak of ASPGN was declared in the Kimberley. Kimberley public health control measures were drafted and used throughout that outbreak. This update of those 2014 guidelines was initiated in 2017 once APSGN had become a notifiable disease in Western Australia. Finalisation of this update occurred during the 2018 outbreak to produce contemporary public health guidance for Kimberley-based services. Because specific reference has been made to Aboriginal communities and people, finalisation of this guidance also included consultation with Aboriginal leaders and cultural custodians in the Kimberley in accordance with the principles of the Aboriginal Health Impact Statement and Declaration (ISD) in which it is affirmed that non-Aboriginal people do not have the moral right to make unilateral policy decisions affecting the health and wellbeing of Aboriginal people (WA Health 2017). The Kimberley Aboriginal Health Planning Forum (KAHPF) endorsed this final version on the 28 February 2019. No responsibility is taken for use of this guidance outside the Kimberley.

ACUTE POST-STREPTOCOCCAL GLOMERULONEPHRITIS
KIMBERLEY CONTROL MEASURES
July 2018

In September 2017, acute post-streptococcal glomerulonephritis (APSGN) was declared notifiable in Western Australia (WA). In the Kimberley, APSGN is an important condition for five main reasons:-

- Children acutely ill with APSGN may develop hypertensive encephalopathy, cardiac failure, acute renal failure or sepsis. Outcomes may be worse in adults.

- There is increasing evidence that APSGN in early childhood leaves a legacy of compromised renal function which in turn increases the risk of chronic renal failure.

- On occasion, outbreaks of APSGN occur in Aboriginal communities. These outbreaks are usually caused by specific nephritogenic strains of Group A streptococci, which can spread very quickly resulting in many cases of APSGN particularly among children.

- Outbreaks can be halted by timely treatment of those identified at risk (Johnston et al 1999). Penicillin is used to eradicate the carriage of group A Streptococcus and may limit the spread of nephritogenic strains of streptococci and prevent recurrences (Becquet, 2010). Prevention of streptococcal infections remains the most important control strategy (Becquet, 2010).

- APSGN is a marker of continuing public health risk for Aboriginal people. As estimated, 75% of APSGN is caused directly by environmental conditions (McMullen et al 2016). Partnership for effective public health action with Aboriginal communities and strengthening accountability of relevant services for essential infrastructure will reduce APSGN rates.

THE DISEASE

- APSGN is an immune mediated condition, characterized by glomerular inflammation precipitating kidney dysfunction occurring 7-10 days following streptococcal pharyngitis or 2-4 weeks following streptococcal skin infection. Whilst Group A Streptococcus (GAS) infection is the most common cause, Group C streptococci have also been associated with glomerulonephritis.
- Following an antecedent streptococcal infection antigen/antibody immune complexes form in the glomerular wall or are deposited having formed in the circulation. Deposition of immune complexes or formation in situ triggers an inflammatory response leading to acute nephritic syndrome characterized by haematuria, hypertension, oedema and oliguria.

EPIDEMIOLOGY

The incidence of APSGN has decreased worldwide, particularly in developed countries where it is generally of low incidence and when present primarily affects adults with comorbidities. In undeveloped countries it remains primarily a disease of childhood with an annual incidence of 9 to 28 cases/100000 population (Rodriguez-Iturbe and Haas, 2016). In the Northern territory the incidence in Aboriginal children younger than 15 years is as high as 94.3/100000 person years.

In the Kimberley, APSGN is primarily a disease of young Aboriginal children, median age 6 years, mode 4 years (disease control data). In non-outbreak years, 1-2 cases occur each month. To date there has not been distinct seasonal pattern. In the 2014-2015 outbreak, peak incidence occurred in the dry season (May-August) with a secondary peak in the 'wet' season (October–March).

CASE DEFINITION

All suspected cases of APSGN must be simultaneously notified to the regional Paediatric team AND KPHU Disease Control Team. Confirmed cases of APSGN are notifiable in Western Australia under the statutory requirements of the WA Public Health Act 2016. **Any questions or concerns regarding diagnosis or immediate management of APSGN, contact the on–call paediatrician at Broome regional hospital centre (9192 2222). You must also notify KPHU by calling 9192 1630 and speaking to disease control.**

Confirmed case

A confirmed case requires both clinical evidence **AND** laboratory evidence**.**

Clinical evidence of APSGN has at least 2 of the following:

- facial oedema and / or peripheral oedema
- hypertension **(see Appendix 1)**
- $\geq$ moderate haematuria on dipstick($\geq$2+ red blood cells)

Laboratory evidence requires:

1. Haematuria on microscopy (RBC >10/µl) **(if microscopy is not available, then 'moderate' haematuria on dipstick fulfils this criterion)**

AND
2. Evidence of recent streptococcal infection (positive Group A Streptococcal culture from skin or throat, or elevated ASO titre or Anti-DNase B)

AND
3. Reduced C3 complement level

Probable case

A probable case requires clinical evidence only.

Possible case

A possible case requires laboratory evidence only.

Notes

1. Possible (subclinical cases) can be found when screening individuals who have been contacts of a case of APGN. Subclinical cases have only one clinical symptom. They do not have oedema or hypertension but, on laboratory investigation, are found to have haematuria, evidence of a streptococcal infection and a reduced C3. These cases should be reported to the regional Paediatrician and also to KPHU Disease Control Team.
2. If microscopy is not available, then moderate haematuria on dipstick fulfils this criterion.
3. If all other criteria have been fulfilled but the only evidence of recent streptococcal infection is isolation of Group C or Group G Streptococci from skin or throat, this could be considered a confirmed case after discussion between the Disease Control Team at KPHU and the treating paediatrician.

Case Management

- In patients presenting with oedema, haematuria and/or hypertension that is clinically compatible with a provisional diagnosis of APSGN, a clinician must inspect their skin for evidence of current or recent skin sores or scabies and recent GAS pharyngitis. Findings are to be recorded in the clinical notes.

- If skin sores are present in a patient with a provisional diagnosis of APSGN, swabs should be taken from 2 different skin sores if present. If indicated on history, a throat swab should be taken. These swabs are taken to identify presence of GAS.

- Blood should be collected to measure ASOT, antiDNAase B titres, C3, C4, UEC

- PathWest can perform a urine red cell count if specimens reach them within 24 hours of collection without the need for a preservative. Clearly indicate the provisional diagnosis of APSGN on your pathology ordering form. If the patient is more remote, perform a dipstick urinalysis. Do not send a urine specimen but note this in the handover information when the patient is transferred to hospital.

- All clinical cases of APSGN should be given IM benzathine penicillin regardless of whether skin sores/pharyngitis are present or not at the time of presentation

(See Appendix 2 for dosages and alternative regimes in the presence of penicillin allergy or documented LA bicillin refusal).

- Clinical management of all cases should be discussed with the regional paediatrician/on-call paediatrician as per WACHS regional arrangements. All clinical cases of APSGN should be hospitalised unless with the written confirmation of the regional paediatrician that admission is not necessary. This confirmation must be retained for audit purposes in the patient's electronic clinical record.

- Names of **family**, **household** and **close contacts** of the suspected case including adults and children who have been staying in the household **two (2) weeks prior to the onset of APSGN** should be collected ASAP. This is essential to assist with prompt contact tracing if the case is confirmed **(See Appendix 3).**

- After discharge from hospital, all APSGN cases require medical review. The discharge summary from the hospital will convey this information. Upon return to primary health care, the patient should be seen twice weekly for BP measurement, weight, dipstick urinary monitoring and physical examination until paediatrician or senior doctor review at 6-8 weeks. This follow-up at 6-8 weeks post-discharge is essential. For this medical follow-up, collect urine for microscopy if the clinic is within 24 hours of laboratory processing (or urinary dipstick if not) and blood for complement (C3 & C4) levels.

- As ASPGN is notifiable in WA, clinicians must report all cases of APSGN to KPHU Disease Control team.

- As part of opportunistic health promotion, all clinicians should raise community awareness of scabies control and skin sores, promoting regular washing especially of children to reduce bacterial spread. Contact KPHU or KAMS for local and up-to-date community and patient resources.

- Clinicians should be additionally vigilant if there is a probable or suspected case of APSGN in the community they serve. Remember to include environmental health and health promotion teams' members to strengthen community action in these circumstances.

- In the Kimberley, the environmental attributable fraction for APSGN is 75% (McMullen et al 2016). Remember to offer an environmental health referral and, with the written permission of the child's family or guardian, refer to the local environmental health service as part of APSGN case management.

Exposure investigation and contact management

The purpose of contact tracing is to:

- detect subclinical or undiagnosed cases of APSGN in household contacts
- treat symptomatic contacts
- prevent further GAS transmission and
- provide all of family education on disease prevention, early detection and overall skin health and/or throat infections.

Single cases and contact identification/tracing/management

Single ('sporadic') should be admitted and treated clinically, including any infected skin sores.

Every single case of APSGN requires notification, contact identification and contact tracing of 'family, household and close contacts'.

Clinicians must adhere to the following definition of *'family, household and close contacts':*

> Those staying in the house at any time in the two weeks preceding the onset of APSGN for a period longer than 6 hours and where close contact with infected skin sores, bedding, fabrics, mattresses, towels or other fomites has occurred.

All of these *'family, household and close contacts'* should be identified irrespective of age (in other words, children AND adults) in the earliest possible timeframe. Consent should be obtained for

- skin to be examined for skin sores/scabies,
- blood pressure to be measured
- urine to be tested with a dipstick for the presence of haematuria.
- If skin sores are present, swabs to be taken for sensitivity and culture **(See Appendix 3)**

Clinical assessment and treatment through primary health care of all family, household and close contacts of the index case must be completed within five (5) working days of confirmation of the index case.

If the time gap between notified APSGN cases and initiating screening contacts exceeds two weeks, there is no likely benefit to undertaking belated screening and treatment. Primary health care staff must check with KPHU Public Health Team should this be the situation before terminating contact tracing.

Any child aged **12 months to 16 years** (exclude babies under 12 months) among *'family, household and close contacts'* are to be screened for APSGN using the criteria listed below.

The local GP or WACHS DMO is responsible for prescribing treatment for family, household and close contacts. In remote clinics, RANs credentialed to dispense treatment for skin sores are also responsible.

For those *'family, household and close contacts'* **12 months and older**, including adults who have infected skin sores are to be given LA Bicillin **(See Appendix 2). Contacts without signs or symptoms of active GAS infection are to receive education and advice only, with clear instructions to present for treatment promptly if skin sores or pharyngitis occurs.**

All individuals identified with scabies should be treated with topical 5% permethrin as should their contacts. Consider Ivermectin if >15kg for heavy or recurrent infestations according to eTG recommendations and restrictions.

Referral of contacts

Any contact that fulfils the clinical case definition i.e. TWO of the following clinical signs should be discussed with the regional paediatrician immediately regarding any additional clinical information or tests to be performed locally and arrangements for paediatric assessment.

- facial oedema and / or peripheral oedema
- hypertension (**see Appendix 1 for age related blood pressure recordings in children)**
- ≥ moderate haematuria on dipstick

Any contact that has ONE of these three clinical signs is to be referred for medical assessment by the local medical officer.

Note that school contacts do not intrinsically meet the criteria for family, household and close contacts.

Although evidence is problematic, KPHU generally recommends that any contact must be identified, examined and treated within a two-week period from case notification.

Urine specimens for urine red cell count are only to be ordered for contacts if the urine will be received by Path West within 24 hours of collection. No preservative is required in the specimen jar. If the specimen will take more than 24 hours to be transported to the laboratory, it is not to be ordered.

Remember to reinforce community awareness and vigilance in treating skin sores among children. Contact your local health promotion and environmental health teams for current and culturally appropriate health promotion pamphlets and posters promoting skin health and skin sore management.

Cases Occurring in Day Care Centres

Advice should be sought from KPHU for the management of cases occurring in Day Care Centres. If a case of APSGN has occurred in a child attending day care in the Kimberley, the parents/caregivers and day care staff should be informed that a case of APSGN has occurred in a child attending day care. Centre staff and parents/caregivers of children in that child's care group should be alerted to the signs of APSGN and provided information on skin sores and skin hygiene. It is not necessary to screen other children attending that day care. KPHU will advise if further action is required.

School and Classroom Contacts

If a case of APSGN has occurred in a child attending school, the parents/caregivers and school staff should be informed by either the School Health Nurse if available or KPHU PHT that a case of APSGN has occurred and be alerted to the signs of APSGN. Information on skin sores and skin hygiene will be distributed by KPHU PHT. It is not necessary to screen other children attending that school. KPHU will advise if further action is required. See Appendix 6

Environmental Health Referrals

Environmental Health Teams (including Environmental Health Officers) operate throughout the Kimberley and have many responsibilities including environmental health risk assessment and mitigation. Local Environmental Health Teams should be

approached by the local primary health care providers to negotiate referrals if this has not already occurred. Referral with the patient's, parent's or guardian's written consent will prompt contact by these Environmental Health Teams to work one on one with patients and householders to identify measures to control health risks within the immediate environment. The focus for the Environmental Health Team is always case specific, depending on referral details. It will usually include information and education on communicable disease prevention with a risk assessment of the house and living environment, and support to access repairs and maintenance when required. Access to timely repairs and maintenance should be monitored by the local Environmental Health Team.

Note: EHO's are Authorised, or eligible to be Authorised under the Public Health Act and have existing responsibilities for the investigation of notifiable communicable and zoonotic disease outbreaks, including environmental health risk assessment and mitigation.

PUBLIC HEALTH RESPONSES

There is no simple treatment for APSGN. **The prevention of streptococcal infections remains the most important control strategy.**

All public health responses are to be co-ordinated by the Public Health Team in KPHU. KPHU's Public Health Team knows the usual epidemiology of APSGN in this region and have agreed criteria for initiating a public health alert, declaring an outbreak and/or undertaking community-wide interventions as described below.

Public Health Alert and heightened KPHU surveillance

In the Kimberley, whenever there are FOUR OR MORE APSGN cases - whether probable or confirmed – anywhere in the Kimberley within a 4 week period which are not epi-linked, KPHU will issue a Kimberley-wide alert to all health care providers and communities to raise awareness for diagnosing and reporting cases.

KPHU Public Health Team will continue to monitor for new notifications of APSGN, their epi-links, known mobility, place of residence and known seasonal variation. On the basis of this heightened epidemiological surveillance, an outbreak may be declared either for specific communities (eg a specific town or remote community), sub-regions of the Kimberley (eg East Kimberley or the Fitzroy Valley) or for the region as a whole (a Kimberley-wide APSGN outbreak).

Educational messages for communities will be coordinated by KPHU through relevant Environmental Health and Health Promotion teams (KPHU, KAMS, Nirrumbuk, shires etc). Communications will aim to ensure clear understanding of the status of any observed change in the epidemiology of APSGN and the required public health response.

Upon declaring an APSGN outbreak in a specific location or regionally or seeking to respond to any other significant change in incidence rates, KPHU's Public Health Team convenes an Outbreak Control Team (OCT) with membership as appropriate and a designated APSGN Public Health Response Lead. All communications will be distributed through the APSGN Public Health Response Lead. Daily reporting to KPHU of the status of contact tracing may be required.

Public Health Management of an APSGN Outbreak

Detecting an outbreak

When the number of cases in a community in a given time period exceeds expectation and there is evidence of ongoing GAS transmission, an 'outbreak' may be declared by the regional Public Health Physician/Consultant, in consultation with other regional PHT members. The circumstances that trigger a public health outbreak response and the extent of the response will be based on a risk assessment made by the PHT, in consultation with CDCD and others as appropriate, and depend on the number of cases, the epidemiological links between cases, the perceived risk of ongoing transmission (e.g. considering age, ethnicity, social and geographical factors) and logistic and other variables.

KPHU will clearly advise whether an APSGN outbreak is confined to a town or remote community, whether it is sub-regional (West Kimberley, East Kimberley or Fitzroy Valley for example) or regional (entire region). KPHU will also clearly specify to stakeholders and those contributing to the public health response the identity of specific neighbourhoods of a

town or the specific remote community/communities at risk who require, as a result of the outbreak declaration, community-wide public health initiatives.

KPHU will document the decision-making for outbreak declaration including the known patterns of APSGN in the implicated locations, the changes that were observed and other factors increasing or mitigating exposure to GAS.

Based on the most recent known epidemiology of APSGN in the Kimberley (2014-2016 outbreak and 2016-2017 non outbreak years), the expected number of APSGN in the entire region is 1-2 cases per month. However. there can be large seasonal variation including increased number of cases in the wet season when housing density increases due, in part, to community travel and relocations.

Criteria for considering an outbreak

Two cases probable or confirmed, living in the same location and:

- Onset within a week of each other
- The cases are not contacts of each other (see earlier for definition of a 'contact')
- At least one of these cases must have documentation of a low C3 complement.

OR

1 confirmed case and 2 probable cases living in the same location and:

- Onset within 1 month of each other
- None are contacts of each other

NOTE: Only the APSGN OCT through the Consultant, Public Health Medicine is authorized to declare an outbreak and instigate community screening.

Rationale for invoking population-based community-wide screening

The purpose of population-based community-wide screening in an outbreak is to identify people with risk factors for APSGN and reduce the likelihood of transmission of GAS in a community at risk. A secondary aim is to identify people with unrecognised or probable APSGN.

A decision to invoke population-based screening is serious. This decision can only be made by the APSGN OCT in conjunction with the Consultant, Public Health Medicine and designated APSGN Public Health Response Lead. Initiation of population-based screening without evidence of benefit and without authority of KPHU risks further stigmatisation of Aboriginal communities and misunderstanding of effective public health interventions.

When a community has been identified by the APSGN OCT as eligible for 'population-based community screening', public announcements to local providers, their line managers and employing organisations will be organised by the OCT in conjunction with local Primary Health Care. The OCT will assess need for and mobilise as required 'surge capacity' and available resources. The OCT will work closely with primary health care providers on the ground including private GPs, RFDS, ACCHOs and, where required, shires for environmental responses. The APSGN OCT will assist primary health care providers to engage community leaders to seek permission for 'population-based community screening'. Appendix 6 provides information for school staff, parents, students and community members. A written consent from parents and carers is required to screen

and treat children in communities if their legal guardian is not present at the time (**Appendix 7**)

If any screening of children in the community is to occur in schools as a specific setting, prior written consent from parents/carers must be obtained because these children will be examined without their parent present (the recommended consent form is presented in **Appendix 8**.

Specific considerations for outbreak responses in town settings in the Kimberley

The optimal strategy for controlling transmission in town settings is less clear. The sequence outlined above may be feasible with defined risk populations: alternatively, geographies may be identified by the OCT such as clusters of households, neighbourhoods or fringe camps.

Other options that the OCT will consider in larger Kimberley town where cases may occur more diffusely include a decision to screen contacts in contiguous households or neighbourhoods with links to affected cases or a community where an outbreak has already been declared. It may also be appropriate for the OCT to consider a school-based initiative of screening of Aboriginal children because of the epidemiology and peak age groups for transmission of GAS. If so, a specific consent form has been developed for this purpose (Appendix 9). A letter to inform parents of the results of their child's skin screen and recommended action is included in Appendix 10.

Irrespective of the epidemiology, it may be difficult to limit provision of APSGN screening in specific communities and schools to Aboriginal people only. Public perception of equity and response needs also to be considered by the OCT prior to embarking on a targeted intervention of this type, as may the resource implications of extending the target group to include those that are not identified by the outbreak epidemiology data.

Delivery of population-based community-wide screening

Population-based community screening for APSGN and its risk factors requires physical examination of all children in the designated community aged 12 months to 16 years inclusive for oedema, skin sores and scabies.

Community screening does not require BP measurement or urinalysis unless a child is found to have oedema. Specific protocols for those children found to have oedema, skin sores or scabies will be issued by the APSGN OCT to standardise pathology tests and treatments. In most instances, children requiring treatment for skin sores detected during school screening should be referred to their local health clinic. The PHC team including the GP or DMO responsible for prescribing treatment for those identified through community screening at this time will also be specified by KPHU.

Population-based community screening requires systematic documentation **(see Appendix 4)**. Community notices about community screening as well as additional resources for raising community awareness of APSGN will be issued through the APSGN OCT.

If the time gaps between notified APSGN cases and initiating screening of community members or contacts exceeds two weeks, there is no likely benefit to community screening and treatment.

Although recognising the need for greater understanding of GAS transmission and its impact on APSGN within an affected community, research planning and conduct should never impede the public health response to an increase or declared APSGN outbreak in the Kimberley. If research is planned, it should be clearly distinguished from public health action. Ethics committee approvals must be obtained for research. In addition, explicit requests must be made to communities and their approval sought and gained through agreed governance mechanisms for any additional research objectives.

PUBLIC HEALTH RESPONSE POST-OUTBREAK AND FOLLOW-UP

Aboriginal communities that were involved in the APSGN outbreak should be informed of its resolution, as should regional stakeholders involved in the response including but not limited to:

- Kimberley Aboriginal Health Planning Forum (KAHPF)
- KAMS Lead Clinicians Group
- KPHU Leadership & Management Team
- WACHS Kimberley Regional Director (as per outbreak communication flowchart available from Public Health Manager in KPHU).

The APSGN Public Health Response Lead should conduct an outbreak debrief meeting normally within six weeks under the auspices of the APSGN OCT to gather 'lessons learned' from the epidemiology and public health management of the outbreak. Any Aboriginal person involved in public health response planning should be invited to attend. The resulting outbreak write-up to be prepared initially by the APSGN Public Health Response Lead provides an impetus to further scrutinise the causes, progress, responses and impact of public health action in a systematic way. Aboriginal staff, whether leading or participating in the outbreak response will be lead or co-authors of the outbreak report. External peer review of this outbreak write-up is encouraged. Environmental and economic determinants at the time of the outbreak should also be documented in this outbreak write-up. Production of reports and journal publications using this information to build a better evidence base will be encouraged by KPHU leadership. Community permission must be provided before any reports are submitted for publication.

Returning to surveillance and primordial prevention activities

Ongoing surveillance should resume.

This guidance should also be reviewed in the aftermath of any ASPGN outbreak. Decision rules contained in this guidance for declaring an APSGN outbreak are to be reviewed annually by KPHU's DCT.

PHC line managers and clinical leaders must ensure staff (especially new or locum staff) know about APSGN and its diagnosis, causes and consequences.

Standard non-outbreak public health actions to control GAS will resume after deployment of staff to manage APSGN outbreak response. Any increase in APSGN or declaration of an APSGN outbreak should be regarded as a trigger to revise previous plans to address primordial factors such as environmental conditions, poverty and political reconciliation.

At the conclusion of any APSGN outbreak and declaration of 'stand-down' by the APSGN OCT, it is also recommended that the designated APSGN Public Health Response Lead convene a high-level meeting chaired by the Tier 4 KPHU Director to review public health and health promotion programs to reduce environmental risks that increase the likelihood of GAS transmission underway before the APSGN outbreak. This high-level meeting must discuss the need to re-design or revise these programs prior to their resumption after the outbreak. This transition back to non-outbreak public health and primary health care programs should be explicit, documented and communicated to all stakeholders. If any programs such as 'Healthy Skin Program' or 'sore throat' clinics were in place pre-outbreak, their quality and impact must be reviewed. APSGN is a preventable cause of morbidity and mortality among Indigenous people and effective primary health care that

encompasses community development and primordial prevention in its scope is essential for its prevention and control.

KPHU OFFICER WITH DELEGATION TO SIGN:

Date

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Appendix 1

Measuring blood pressure in children

95th Centile for Systolic Blood Pressure by Age*		
Age (y)	**Boys**	**Girls**
1	103	104
2	106	105
3	109	107
4	111	108
5	112	110
6	114	111
7	115	113
8	116	115
9	118	117
10	119	119
11	121	121
12	123	123
13	126	124
14	128	126
15	131	127
16	134	128
17	136	129
* data from Fourth Task Force for Blood Pressure Control in Children. Data for children on 50th centile for height. Full data including adjustments for height at http://www.nhlbi.nih.gov/files/docs/resources/heart/hbp_ped.pdf		

Appendix 2

Recommended doses of IM benzathine penicillin for use in cases and contacts of APSGN

Weight	Dose of benzathine penicillin (LA Bicillin) 900mg/2.3 ml	Amount
3kg to <6kg	225mg	0.5 ml
6 to <10kg	337.5mg	0.76 ml
10 to <15kg	450mg	1 ml
15 to <20Kg	675mg	1.53 ml
20 kg or more	900mg	2.3ml

NB.to calculate part doses use a concentration of 442mg/mL as per the product info.

IMI: Over 12 months ventro gluteal under 12 months vastis Lateralis

Those who refuse intramuscular penicillin or who are allergic to penicillin should instead receive oral Co-trimoxazole either as:

twice daily for 3 days
or

daily for 5 days.

Adherence to the full course of oral treatment is imperative.

Weight (kg)	Co-trimoxazole (trimethoprim + sulfamethoxazole) 200mg/40mg per 5mls
Child (up to 40kg)	4+20mg/kg/dose, **twice daily for three days**; OR 8+40mg/kg/dose **daily for five days***
Adult	160+800mg twice daily for five days
** Consider once daily dosing if expected to improve adherence.*	

Appendix 3 **THIS INFORMATION SHOULD BE ENTERED INTO PATIENT'S HEALTH RECORD**

CONTACT IDENTIFICATION, TRACING AND ASSESSMENT FOR CASES OF APSGN

(Family, household and close contacts who have stayed in the household in the two weeks preceding the onset of APSGN)
Give LA Bicillin to all contacts aged 12 months to 16 years, give LA Bicillin to adults 17 years and over who have skin sores

INDEX CASE NAME	DATE OF BIRTH
COMMUNITY	

Name	DOB	Education Consent	Scabies	Skin Sores	Oedema	Urine	BP	LAB	Lyclear	Swab	Referral	Other
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		

		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		

Appendix 4

COMMUNITY SCREENING FORM FOR APSGN

Community:

Name	DOB	SEX	Ethnic group	Scabies	Lyclear	Sores	LA Bicillin	Oedema*	BP	U/A	Referral to MO*	Other
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	

*** For those with oedema, do urinalysis and blood pressure and refer to medical officer**

THIS INFORMATION SHOULD BE ENTERED INTO PATIENT'S HEALTH RECORD

Appendix 5

Community Screening Summary Report

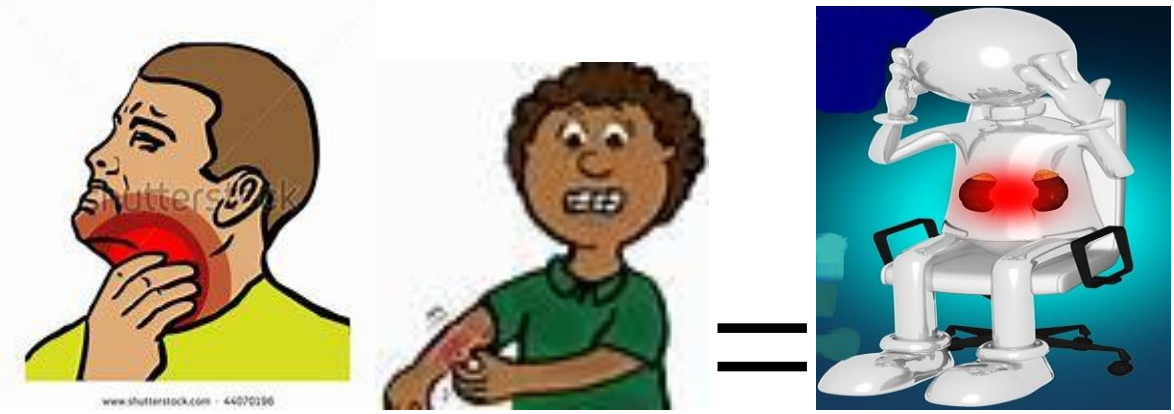
Community	
Screening Coordinator	
No. of children screened	
Total number of children aged 12 months to 17 years living in the community	
No. of children with skin sores	
No. of children with scabies	
No. of children with oedema	
No. children referred to DMO	
No. probable cases APSGN	
No. confirmed cases of APSGN	

Please return this report with screening forms to [INSERT]

Appendix 6

Skin Sores, Sore throats and Kidney Disease

A member of your school community has recently been diagnosed with Acute Post Streptococcal Glomerulonephritis (gloe-mer-u-low-nuh-FRY-tis) or APSGN. Other people at school may also be affected.



Acute Post-streptococcal Glomerulonephritis (APSGN) is a kidney disease that can develop after certain skin and throat infections. You cannot give APSGN to other people. However, the bacteria that cause the skin infections and sore throats can be passed from person to person. APSGN is most common in children, but adults are more likely to have long-term health problems if they get it.

What parents/carers should do

Get all skin sores treated quickly; keep skin clean by washing with soap and water every day. Cover all skin sores with a clean dressing.

Go to the clinic or hospital straightaway, if your child has:

- Dark, coke coloured urine
- Puffy eyes, a swollen face or swollen feet
- Headache
- Fever
- Tummy pain or swelling

Please read the attached fact sheet for more information on APSGN or contact your school health nurse or Kimberley Population Health Disease Control team on 91941643

Appendix 7

Kidney Disease Community Screening Consent Form

A number of people in our community are sick with a kidney disease called Acute Post-Streptococcal Glomerulonephritis (APSGN). This disease develops after certain skin and throat infections. The bacteria that cause these skin and throat infections can be passed on to other people. Because of this it is important that health care staff check all at risk children aged 12 months to 16 years for skin sores, scabies and signs of APSGN. APSGN in the Kimberley is most common in school aged children.

The health staff will be visiting homes to look at the skin of all children checking for skin sores and/or scabies.

If any skin sores are present the recommended treatment is an injection of penicillin.

If scabies are present a cream will need to be applied all over the body of the child and also everyone who lives with the child.

Please complete the section below if you give consent for your child to be screened and treated. You can also bring your children to the clinic for a healthy skin check.

I …….. parent/carer

mobile number…….. House number or address……..

give consent for the following children:

Names of children in your care

Child's Name	Age or Date of Birth	Allergies

Do any of the children listed have any allergies? YES/NO

What are they? ……

.....

Signed: …….

Date: …….

Appendix 8

Kidney Disease and Skin Sores
School Screening and Consent Form

A number of people in our community are sick with a kidney disease called Acute Post-Streptococcal Glomerulonephritis (APSGN). This disease develops after certain skin and throat infections. The bacteria that cause these skin and throat infections can be passed on to other people. Because of this it is important that health care staff check all at risk children aged 12 months to 16 years for skin sores, scabies and signs of APSGN. APSGN in the Kimberley is most common in school aged children.
The health staff will be looking at the skin of all children and checking for skin sores and/or scabies.
If any skin sores are present the recommended treatment is an injection of penicillin.
If scabies are present a cream will need to be applied all over the body of the child and also everyone who lives with the child.
Pleas circle the YES/NO answers below if you give consent for your child to be screened and treated.
I …… parent/carer
mobile number……..give consent for the following children:
Names of children in your care

Name	Class

To be screened for skin sores/scabies and APSGN Yes/No
To be given a penicillin injection if they have skin sores Yes/No
To be treated with cream for scabies Yes/No
I wish to be present if my child needs treatment Yes/No

- Does your child have any allergies? YES/NO
  - what are they.....

Appendix 9

Government of **Western Australia**
Department of **Health**
WA Country Health Service

Date: xxxxxx

Dear Parents and Carers,

Some members of your community have recently been diagnosed with Acute Post Streptococcal Glomerulonephritis (commonly referred to as APSGN).

APSGN is a kidney disease that can develop after certain skin and throat infections. You cannot give APSGN to other people. However, the bacteria that cause the skin infections and sore throats can be passed from person to person by close contact and through sharing towels and bedding.

Because APSGN is most common in children a team of health workers from Kimberley Population Health Disease Control, XXX Community Health and XXX Aboriginal Health Service (DAHS) will be visiting your school to complete Skin Health Checks.

Who will we be checking?
Aboriginal children under the age of 17.

What will we be looking for?
Skin sores
Scabies
Head Lice

Where will we be checking?
Head
Stomach
Back
Feet
Legs

No treatment will be completed without further consent from you. If you child has anything of concern we will send a letter home directing you to attend XXX Aboriginal Health Service (DAHS) or XXX Community Health or the HOSPITAL for treatment

If you would like further information please contact XXX Community Health on XXXX

If you do not wish to have your child screened please notify your school.

Appendix 10

Government of **Western Australia**
Department of **Health**
WA Country Health Service

Date:

Dear Parent/Carer

Child's name_____

Skin Health Checks were completed today at your child's school

We identified the following concerns that require treatment:

Skin Sores ☐

Scabies ☐

Head Lice ☐

Puffy Face ☐

There is currently an illness in the community that is making some children very sick. This illness is closely linked to skin sores.

To help protect your child and other children in the community please take them to xxxxxxxxx AMS xxxxxx Community Health xxxxxxxxx Clinic or xxxxxxxxxx Hospital; for treatment as soon as possible.

To discuss this further please call XXXXXX