



Delivering a Healthy WA



Government of Western Australia
Department of Health

**WESTERN AUSTRALIAN
ATTENTION DEFICIT HYPERACTIVITY DISORDER
CLINICAL REFERENCE COMMITTEE**

CLINICAL MODEL

**COMPLEX ATTENTION AND HYPERACTIVITY DISORDERS
SERVICE**

23 June 2009





GLOSSARY OF ABBREVIATIONS

Term	Definition
ADHD	Attention Deficit Hyperactivity Disorder
CAHDS	Complex Attention and Hyperactivity Disorder Service
CAHS	Child and Adolescent Health Service
CAMHS	Child and Adolescent Mental Health Service
CDS	Child Development Service
CNS	Clinical Nurse Specialist
CRC	Western Australian Attention Deficit Hyperactivity Disorder Clinical Reference Committee
DET	Department of Education and Training
DOH	Department of Health
EHSC	Education and Health Standing Committee
ERC	Expenditure and Review Committee
FTE	Full Time Equivalent Employee
ICD 10AM	International Classification of Diseases Mental Health Manual, 2002, World Health Organization
JDF	Job Description Form
MHD	Mental Health Division
MICADHD	Ministerial Implementation Committee for Attention Deficit Hyperactivity Disorder in Western Australia
NMAMHS	North Metropolitan Area Mental Health Service
NMCAHDS	North Metropolitan Complex Attention and Hyperactivity Disorders Service
OT	Occupational Therapist
PCG	Project Control Groups
RAINE	Ongoing longitudinal children's health research study in Western Australia, began in 1989, sponsored by the Raine family
SMAMHS	South Metropolitan Area Mental Health Service



**Delivering a Healthy WA**

SMCAHDS	South Metropolitan Complex Attention and Hyperactivity Disorders Service
TICHR	Telethon Institute for Child Health Research
WACHS	Western Australian Country Health Service

Acknowledgements

CRC members would like to thank the late Dr Mark Rooney, Patrick Marwick, MLA Martin Whitely and MLA Dr Graham Jacobs for the individual roles they have had in supporting and ensuring that the plan for this new and innovative service became a reality. The CRC would also like to acknowledge the kind assistance of many people (too numerous to name) from: The WA Parliament & MICADHD, the Mental Health Division, Area Mental Health Executive, North Metropolitan Infant, Child, Adolescent & Youth Mental Health Service, South Metropolitan Child & Adolescent Mental Health Service, the Department of Education & Training, Child Development Services, and the numerous medical specialists, clinicians, public servants, consumers and members of the public who provided consultancy and assistance on this project.

Suggested Citation

Department of Health, (2009), *Complex Attention and Hyperactivity Disorder Service: Clinical Model*, Western Australian Attention Deficit Hyperactivity Disorder Clinical Reference Committee, Department of Health, Western Australia.





CONTENTS

•	Executive Summary	6
•	Aim of Clinical Model	8
•	Background	9
•	Service Objectives	10
•	Service Delivery Model	11
•	Required Clinical Outcomes	11
-	Parliamentary Recommendations	11
•	Corporate Structure	12
-	Metropolitan Area Health Services and Clinical Governance	12
-	WA Country Area Health Service and Clinical Governance	13
-	Figure 1	14
•	Clinic Staff Profile	15
-	Collocation of Clinicians	15
-	Education Specialist Positions	15
-	Clinic Staff Complement	16
-	Figure 2	16
•	Clinical Pathway	17
-	Target Population	17
-	Clinical Intake	17
-	Triage System	18
-	Waitlist Management	19
-	Joint Clinical Consultation Meeting	19
-	Clinical Assessment	19
-	Model of Clinical Assessment	20
-	Clinical Intervention	21
-	Clinical Resource Management	22





•	Capacity Building	22
-	Clinical Training	23
-	Clinical Research	23
-	West Australian Practice Guideline	23
•	Evaluation	24
•	Appendices	25
•	Appendix 1	25
-	Classification System	25
-	Differential Diagnosis	25
-	Diagnostic Criteria	26
•	Appendix 2	27
-	Clinical Reference Committee	27
•	References	28





EXECUTIVE SUMMARY

The Education and Health Standing Committee (EHSC), commissioned by the WA Parliament, reviewed services to West Australians affected by ADHD in October 2004, and made 13 recommendations for the improvement of ADHD services in WA¹. The recommendations call for significant enhancements to clinical and educational services provided within the public sector to children with ADHD by the Department of Health (DOH) and the Department of Education and Training (DET). The **key aims** of the recommendations are to:

1. **Promote safe prescription rates and dosage levels of stimulant medications** for children in WA, and
2. **Develop multidisciplinary assessment and diagnostic services** in the public health sector for children presenting with symptoms of ADHD or related disorders.

The Education and Health Standing Committee's central recommendations will be met primarily through the development of two **Specialist Multidisciplinary Clinics for Attentional Problems** and an online **Western Australian Practice Guideline for Attention and Hyperactivity Related Problems**.

These initiatives will enhance the quality of clinical services for children with ADHD and associated disorders in WA through the provision of consultation services, direct assessment and treatment of complex cases.

The training of health professionals throughout the public sector, including those in rural and remote settings, will also be enhanced thereby enabling the provision of assessment and management of children with less complex attentional difficulties on a decentralized, close-to-home basis.

The new service will provide audio-visual conferencing for rural and remote clinicians to enhance clinical services, and provide cost effective access to supervision and consultation.

Associated initiatives to improve educational outcomes for children with significant attentional or hyperactivity related disorders will be developed.

The original business case for the new service called for the establishment of a Specialist Multidisciplinary Service for Attentional Problems, a service with four sites, to be located in the North and South Metropolitan Areas. Two of these clinics were to be managed by the Child and Adolescent Mental Health Service (CAMHS) within the existing Metropolitan Mental Health Service. The remaining two clinics were to be managed by Child Development Services (CDS) within the existing Child and Adolescent Health Service (CAHS). Funding was received for the two clinics to be located within the North and South Metropolitan Area Mental Health Services. No funding was received for the proposed two clinics to be located within existing Child Developmental Services.

The two funded clinics will be established within the respective CAMHS programmes. These two services will provide specialist clinical assessment and specialist multidisciplinary consultation for complex presentations of attentional disorders, including ADHD, in WA. The





Specialist Clinics will assist the DOH to meet EHSC recommendations 2, 3, 4, 5, 6, 7 and 12, which focus upon research regarding the safety of stimulant treatments, enhancing diagnostic consistency and developing multidisciplinary assessment and diagnostic services within the public sector.

The two Specialist Multidisciplinary Clinics will be located in the North and South Metropolitan Areas. The North Metropolitan Area Health Service Clinic will be located in the Joondalup central business district. The South Metropolitan Area Clinic will be located at Murdoch University. Country Health Districts will be allocated to each metropolitan service.

The Western Australian Attention Deficit Hyperactivity Disorder Clinical Reference Committee (CRC) was commissioned by the Mental Health Division to develop this clinical model. The CRC began meeting in May 2008. A draft of the model was distributed to over 130 key stakeholders for comment during December 2008 and January 2009. A significant majority of stakeholders provided feedback that was supportive of the Tertiary Consultation and Liaison Model.

Final amendments were made to the model in the first quarter of 2009 and the model was endorsed by the Mental Health Operational Review Committee on 6 May 2009.





AIM OF THE CLINICAL MODEL

The aim of the clinical model is to develop a broad service framework to:

- Guide the development of Area Health Service clinical policies and procedures for the new ADHD services.
- Ensure that the new services operate within the parameters of the 13 recommendations of the Education and Health Standing Committee's 2004 review of ADHD services in Western Australia¹.
- Promote consistent clinical service delivery procedures for the two new clinics.
- Enhance and promote improvements to clinical services to the child ADHD patient cohort throughout Western Australia.





BACKGROUND

The Ministerial Implementation Committee for ADHD in WA (MICADHD) developed the plan and business case for the new publicly funded ADHD clinical service. This committee included a broad representation of stakeholders and interest groups and reported to the Director General's of the Department of Health and the Department of Education and Training. The committee met from 2005 to 2009 and has conducted substantial investigations into the options for meeting the recommendations of the WA Parliament's review of ADHD services in WA.

The aim of the MICADHD implementation plan was for the development of new specialist multidisciplinary services and a practice guideline to guide clinical services to the child ADHD cohort in WA. This also included the objective of capacity building within the various relevant sectors, including the public and private health and education sectors.

In August 2007 the Expenditure Review Committee (ERC) committed to funding the two new specialist multidisciplinary clinical teams as described in the MICADHD business case. Recurrent funding of \$3.3 million was allocated for the two new clinics. The Mental Health Division (MHD) was given carriage of the funding with the mandate for the new clinics to be developed within the existing Child and Adolescent Mental Health Services.

The respective Metropolitan Area Health Service Mental Health Executive's established Project Control Groups (PCG) to develop the necessary infrastructure and oversee the implementation of the two teams. Service development was assisted by a Project Manager from Stanton's International, appointed by the MHD.

The clinical model for the new services was developed by the Western Australian Attention Deficit Hyperactivity Disorder Clinical Reference Committee (CRC). The CRC committee commissioned by the MHD and chaired by a Consultant Child and Adolescent Psychiatrist included a membership of senior clinicians from CAMHS, Child and Adolescent Health Services (CAHS) and the Department of Education and Training (DET).

It is planned for the North Metropolitan Area Clinic to commence operations in 2009 with the South Metropolitan Area Clinic to begin operating in 2010.





SERVICE OBJECTIVES

The new services will have the following objectives:

1. Tertiary level consultation, co-location of relevant disciplines, multidisciplinary assessment, treatment and management for severely impaired tier four children (*Tiered System of Care*¹⁶) with significant ADHD and complex co-morbid behavioural syndromes. This will involve:
 - Consultation, assessment and time limited shared care clinical treatment with referrers of metropolitan or rural patients whom meet intake criteria, in vivo, or via audio-visual conferencing.
2. Specialist training for Psychiatric registrars, Paediatric registrars, Clinical Psychology registrars, Neuropsychology registrars and clinicians from other disciplines negotiated with tertiary training institutions.
3. Provision of consultation, liaison and training for the country health sectors to enable staff at each of the clinics to develop dedicated links with a designated region of rural and remote WA with the following components:
 - Hosting training placements for staff from rural or remote locations.
 - Maintaining subsequent supervisory relations as necessary with these staff via audio-visual conferencing.
 - Consultation and liaison.
4. Consultation liaison and training for metropolitan clinicians within the private paediatric, psychiatric, neurology and allied health sectors.
5. Collaboration with the education sector to improve the learning outcomes for children with ADHD and related disorders. Collaboration to include education specialist positions within the new clinics and target ongoing school staff training and consultation provided by clinical staff within the new clinics.
6. Conduct research into the assessment, multidisciplinary treatment and management of ADHD and related disorders.
7. Regularly contribute to an ongoing review and update of the online *WA Practice Guideline for Attention and Hyperactivity Related Problems* and the hosting website.
8. Provide consultation to and collaboration with the Stimulant Regulatory Scheme in WA.





SERVICE DELIVERY MODEL

REQUIRED CLINICAL OUTCOMES

Parliamentary Recommendations

The key Parliamentary Recommendation leading to the allocation of funding for the new ADHD service is Recommendation 7¹. This recommendation states:

'It is the prime recommendation of the (Education and Health Standing) Committee that the State Government urgently develops and adequately funds a primary model of multidisciplinary assessment and diagnosis for ADHD and other behavioural syndromes based on the existing tertiary service provided at the Bentley Health Centre. These services must be available for children undergoing initial assessment and diagnosis and to those already diagnosed.'

The required clinical outcome is the establishment of a public health service that delivers *'...multidisciplinary assessment and diagnosis of ADHD and other behavioural syndromes...'* The new ADHD service, in order to meet the recommendations of the Parliament, will need to deliver a tertiary assessment and diagnostic service for children with ADHD and associated co morbid behavioural syndromes.

The funding granted for the two new services allows for the equivalent of approximately 5.6 clinical FTE in each clinic. With 6,188 WA children currently diagnosed with ADHD and prescribed stimulant medication², the clinical resource will not have the capacity to deliver assessment, diagnostic and treatment services to all children requiring ADHD assessment and treatment services. In order to manage demand and available resources it is planned that the multidisciplinary assessment and treatment service will be for Western Australian children most severely disabled, or most at risk developmentally from ADHD and associated co-morbid behavioural syndromes.

As part of the mandate to enhance the quality of clinical services, the new service will provide a Multidisciplinary Tertiary Consultative Service to clinicians referring or reviewing children with ADHD and co-morbid behavioural syndromes. A regularly reviewed and updated *Western Australian Practice Guideline for Attention and Hyperactivity Related Disorders* will be provided online together with an associated clinical support website.





CORPORATE STRUCTURE

Metropolitan Area Health Services Structure and Clinical Governance

The Clinical Reference Committee has considered the many issues associated with the naming of the new service. The title needs to clearly communicate the business of the new services to stakeholders and the public. It is recommended that the name for the two new teams be the: *Complex Attention and Hyperactivity Disorders Service (CAHDS)*.

In the North Metropolitan Area the new service will be located within North Metropolitan Area Health Service Infant, Child, Adolescent and Youth Mental Health Service (NMAHS ICAYMHS) and will be referred to as the North Metropolitan Complex Attention and Hyperactivity Disorders Service (NMCAHDS). Clinical and operational accountability will be to the NMAHS ICAYMHS Clinical Director and ultimately to the North Metropolitan Area Health Service Mental Health Service Executive Director. Each mental health discipline will have supervision within the existing NMAHS ICAYMHS clinical supervision arrangements. Paediatric and non-mental health disciplines will have supervision arrangements negotiated with the relevant programme areas within the Department of Health and the Department of Education and Training.

In the South Metropolitan Area the team will be located within the Fremantle Health Service District. The new service will be referred to as the South Metropolitan Complex Attention and Hyperactivity Disorders Service (SMCAHDS). SMCAHDS will be incorporated within the existing clinical governance structure for the relevant Health Service District. The Executive Director South Metropolitan Area Mental Health Service (SMAMHS) will be responsible ultimately for clinical and operational matters. Supervision arrangements and line management responsibility will be negotiated for SMCAHDS mental health disciplines within existing South Metropolitan Area Mental Health Service arrangements, and with appropriate local CAHS, CDS and DET offices for non-mental health disciplines.

The new CAHDS services will be subject to the existing CAMHS or ICAYMHS clinical governance, performance reviews and standards assessment processes and requirements. These include clinical governance reviews by the Office of the Chief Psychiatrist, and meeting the requirements of the Australian Council for Health Care Standards (ACHS), the National Standards for Mental Health Services, and existing CAMHS/ICAYMHS staff performance development and management policies and procedures. Each CAHDS service will report to existing Area Mental Health programme management systems. Consumer input processes will be the same as those in the existing CAMHS/ICAYMHS services.

There will be an extensive review of the clinical and operational functioning of both new Complex Attention and Hyperactivity Disorders Services after the first twelve months of operation. The Area Health Services, the Clinical Reference Committee, WACHS and DET will conduct this review jointly. The framework for this review will be developed jointly by the CAHDS services, CRC, the Metropolitan Area Mental Health Services and DET.





WA Country Area Health Service Structure and Clinical Governance

The CAHDS clinics will offer services to allocated WACHS districts. Services will include consultation, liaison, training, and clinical assessment and treatment delivered on a shared care basis with referrers. The allocation of Country Health Service Districts to the South or the North Clinic is based upon geographic location and child population data. The allocation is listed in Figure 1 on page 14.

The allocation will allow specialist multidisciplinary assessment and treatment services to become available to country patients and families. Allocating WACHS Districts to the new Complex Attention and Hyperactivity Disorders Services will also promote a shared understanding of service delivery issues between the metropolitan and country health services. This arrangement will enhance the consultation and liaison arrangement between rural and metropolitan services. A Service Level Agreement with a combination of strategies for service provision to the Country Health Service Districts will be negotiated between the Area Health Services, WACHS and the Clinical Reference Committee. This will include the provision of clinic-based services, consultation via video conferencing and telephone, and some limited country visiting if requested by WACHS.

Case responsibility during assessment and treatment will be negotiated within a shared care assessment and management plan. It is expected that clinic staff will provide consultation and training to rural CAMHS staff in the allocated Health Service Districts. There will also be consultation provided to private sector clinicians in rural settings as well as sector capacity building in Health Districts allocated to each clinic.

Clinical governance for rural clinicians operating within shared care management plans will be via existing Western Australian Country Health Service (WACHS) systems. Clinical and operational responsibility as well as supervision of rural staff will be via existing WACHS corporate and clinical governance arrangements.





**Figure 1: COUNTRY HEALTH SERVICE DISTRICT ALLOCATIONS
And HEALTH DEPARTMENT POPULATION DATA FOR
COUNTRY DISTRICTS**

ADHD Service	Allocated Health Service District	Children 0-18yrs
NMCAHDS	East Pilbara	5,541
	Eastern Wheat belt	2,645
	Gascoyne	2,635
	Geraldton	9,576
	Kimberley	11,217
	Midwest	3,554
	Murchison	827
	Northern Goldfields	10,923
	West Pilbara	6,596
	Western Wheat belt	11,241
	Total	64,755
SMCAHDS	Blackwood	1,699
	Bunbury	11,122
	Busselton	7,411
	Central Great Southern	2,774
	Leeuwin	3,080
	Leschenault	9,062
	Lower Great Southern	11,509
	South East Coastal	4,401
	Southern Wheat belt	4,970
	Warren	2,800
Wellington	3,639	
	Total	62,338





CLINIC STAFF PROFILE

Collocation of Clinicians

The existing MICADHD business case recognizes that effective interventions with children who have disorders that can significantly compromise mental health, development and learning, such as ADHD, will require close collaboration between relevant mental health, children's health and education services.

Effective collaboration needs an ongoing mechanism for linking mental health, children's health and education services. Joint service delivery, evaluation and review are valuable processes for enabling collaboration and for improving interventions.

The clinic staff complement will therefore include the joint placement of mental health, child health and education specialists within the one clinical service. This service delivery model will aim to encourage and promote collaboration between these three important service areas across the state.

Education Specialist Positions

To assist in the development of a formal collaboration process between the Department of Health and the Department of Education and Training (DET) the business case requested that DET fund two Education Specialist positions and place these specialists within each new ADHD clinic. It is planned that the positions be Senior School Psychologists or suitable alternative personnel.

The role within the new service will include:

- Liaison between District Education Office personnel and staff from Primary and Secondary Behaviour Centre's, in relation to specific students with severe ADHD and co-morbid disorders.
- Promoting understanding within the clinics of school and district support processes and documented planning processes.
- Promoting understanding within the clinics of DET funding arrangements for students with additional needs, including funding sources such as the; *Behaviour, Management and Discipline* (BMAD), *Learning Support Coordinator* (LSC) and *Get it Right* (GIR) programmes.
- Participation in the formulation of treatment plans for home and school.
- Liaison with school psychologists, other district education office and key school personnel to inform them of best practice interventions.
- Conducting direct assessments.
- Providing feedback to CAMHS on current issues and difficulties for schools managing children with ADHD and co-morbid behavioural syndromes.





These positions will assist with education assessment and intervention and act as a conduit between schools, District Education Offices, and the new clinics.

The School Psychologist positions will have a dual reporting arrangement. They will report to the Area Manager School Psychology Services for DET and will also report to the Team Manager for the new CAHDS Clinic. It is expected that clinical governance and clinical supervision arrangements will be negotiated between CAMHS and DET Student Services to the satisfaction of both agencies.

Clinic Staff Complement

The new services in each clinic will have the following staff complement:

Figure 2: CAHDS STAFF COMPLEMENT		
CLINICIAN	LEVEL	FTE
Consultant Psychiatrist	MPA 424	0.40
Paediatrician	MPA 424	0.40
Paediatric/Psychiatric Registrar	MOP 413	0.40
Neuropsychologist	HSO 092	0.40
CNS	NEAS 03	0.50
Spec. Clinical Psych/Team Manager	HSO 10	1.00
Clinical Psychologist	HSO 092	0.50
Research Psychologist	HSO 082	0.50
Senior OT	HSO 073	0.50
Senior Speech Pathologist	HSO 073	0.50
Senior Social Worker	HSO 073	1.00
Administration Officer	HSO 034	0.50
Clerical Officer	HSO 019	1.50
		Total 8.60
Senior School Psychologist	DET Funded	1.00
Full Staff Complement		Total 9.60

Note: Some variation in the staff complement may occur due to costs related to accommodation and other fixed goods and service expenses. There may be variations between North Metropolitan and South Metropolitan Area Health Service structures. The above staffing configuration is based upon the North Metropolitan Area PCG budget.





CLINICAL PATHWAY

Target Population

The target patient cohort will be children and young people experiencing the most persistent and severe attentional difficulties and co-morbid complex behavioural syndromes. The target patient cohort will be children aged 0 to 18 years requiring Tier 4 specialist treatment programmes¹⁶. An assessment, diagnostic and time limited shared care treatment service will be offered to children meeting intake criteria. A multidisciplinary consultation service will be offered to clinicians treating children with significant ADHD and co morbid behavioural syndromes.

Clinical Intake

The Tertiary Consultative Clinical Model requires referrals to come from Paediatricians, Psychiatrists, Neurologists and other authorised prescribers. Referrals from general practitioners, allied health and education specialists will be accepted if accompanied by a letter from an authorised prescriber agreeing to the referral and involvement in a shared care management plan. Agreement for the referral by an authorised prescriber is necessary as further medical assessment or management may be required post assessment from the ADHD clinic.

ADHD symptoms in children vary with age and developmental trajectory. The disorder in children is perhaps best conceptualized as a quantitative trait, or series of traits, rather than a categorical disorder¹⁵. Intake criteria will be based upon the phenotype (symptoms/behaviours/impairments) and focus upon levels of impairment, as opposed to 'disruptive behaviours' often associated with the presentation of boys for ADHD assessment and intervention¹⁵.

Referred patients to be accepted into the ADHD service must meet all the following criteria:

Inclusion criteria:

1. Children between the ages of 0 and 18 years, residing in metropolitan or rural Western Australia.
2. Children presently prescribed, or consideration being given to the prescription of medication for the treatment of ADHD.
3. The presence of severely debilitating attentional difficulties and hyperactivity resulting in significant learning and co-morbid behavioural difficulties. There must be evidence for the child experiencing the following levels of impairment within the 6 months preceding the referral:
 1. Long-term significant impairment (≥ 6 months) in ability to sustain attention and debilitating hyperactivity, on a daily basis, irrespective of environment, before the age of six years.
 2. Documented evidence of a marked educational deterioration or lack of developmentally appropriate school performance.





3. Documented evidence that Individual Education Programmes or education or behavioural support programmes are not preventing deterioration in developmentally appropriate learning.
4. The presence of significant psychosocial impairment including poor social skills and ongoing social isolation clearly attributable to symptoms of ADHD.
5. Currently enrolled in an education or training programme, unless the patient is 5 years of age or younger.

Exclusion Criteria

1. Significant unaddressed child protection issues likely to compromise treatment outcomes.
2. Diagnosed physical or medical disability, likely to be a cause of significant symptoms of ADHD and co-morbid disorder, where this disability would be more adequately assessed and managed by a specialist agency for this disability.

Triage System

Written referrals, on an electronic form addressing the intake criteria, will be the accepted format for referring patients to the new services. The referral form will be contained within the online *Practice Guideline*. The form together with the *Practice Guideline* will also be available for downloading at www.adhd.health.wa.gov.au. The triaging of referrals will need to be integrated to an agreed extent within existing specific Area CAMHS/ICAYMHS management and clinical governance systems. The assignment of intake priority into the new clinics will be based upon the existing CAMHS triage model.

The triage model used currently by CAMHS assigns treatment priority based upon symptom severity using the *Tiered System of Care*¹⁶ model. Given the small clinical FTE component available to each service, resources for triage are a significant issue. The development of a separate or centralized triage system for both new services, although of some benefit, will result in the dilution of clinical resources particularly for the clinic in the north, where there is an existing centralized triage system.

The triaging of referrals from WACHS districts will follow the same procedures as for the metropolitan area. Referrals from WACHS districts will be triaged by the metropolitan clinic that the particular district is allocated to, as described in Figure 1 on page 12.

The triage systems for both ADHD clinics will be audited as part of the planned extensive clinical and operational review after the completion of 12 months of service delivery.

Triage for NMCAHDS

In the North a centralized triage system is currently in operation and the new CAHDS clinic in the north will be able to save clinical resources by integrating within the existing centralized triage system.





For North Metropolitan Area CAMHS written referrals are triaged by the centralized triage office based at the Mirrabooka Community Mental Health Centre. NMCAMHS Triage Clinicians will conduct triage assessments and present referred cases each week to a NMAHS CAMHS Multidisciplinary Triage Team meeting. Triage team members will make decisions on the suitability of referrals to the new service. The Team manager of the new north clinic will be a member of the Triage Team and will take accepted referrals to a multidisciplinary team meeting at the new north service for assessment planning. Allocations for assessment will be based upon assessment protocols and the existing capacity for staff members.

Triage for SMCAHDS

In the South Metropolitan Area Health Service the triage system requires that each CAMHS clinic provide its own triage resources. The new service in the south will need to consider the best option for triage. This may include providing triage resources from the existing clinical budget, estimated to be at least one full time FTE. An alternative may be to share triage with an existing CAMHS clinic, within the same Health Service District. This option may reduce the FTE that needs to be dedicated to triage, possibly to approximately 0.5 FTE.

The South Metropolitan Area CAMHS triage system and clinic location for the new CAHDS clinic is being determined and decisions on these matters will be made in consultation with the South Metropolitan Area Mental Health Executive.

Waitlist Management

It is expected that demand for services will exceed CAHDS capacity, and that there may be waiting times for entry into CAHDS clinical services. The CAHDS teams will manage waitlists and service entry processes according to established practice for the Area CAMHS/ICAYMHS service. As referred patients will have existing clinical management from the referrer and/or authorised prescriber, medico legal responsibility will remain with the referrer during any waiting period for admission to CAHDS.

Joint Clinical Consultation Meeting

A mechanism for ensuring service consistency is needed. This mechanism could also be used to oversee an equitable sharing of clinical workload between the services. This would assist the triage process. The mechanism thought to be of most assistance would be a monthly joint clinical consultation meeting for the two new services.

The joint clinical consultation meetings would have agenda items of importance to both services including; clinical work load for the metropolitan and rural services, clinical benchmarks, prescription practice, statewide capacity building, research oversight and communication with stakeholders.

Clinical Assessment

Clinical assessment will follow the assessment protocol as described in the *Western Australian Practice Guideline for Attention and Hyperactivity Related Problems*. The *Practice*





Guideline will be a companion document to this clinical model. The assessment model will be multidisciplinary, with an assigned case manager for each case who is responsible for ensuring the application of the assessment protocol for each child. The assessment protocol includes review by a child and Adolescent Psychiatrist and/or a Paediatrician. The case manager will coordinate the assessment, which will include a medical review, parent interview, psychosocial assessment, psychometric assessment, and an educational assessment.

After allocation, the assigned case manager will review the referral request and the assessment timeframe will be discussed with the referrer and clinical responsibilities negotiated for the assessment period. Treatment and case management during the assessment period will therefore be on an agreed shared care basis with the referring physician. This shared care model will involve negotiation on intervention planning including; prescription and medication review, multidisciplinary input, education objectives and progress, length of assessment and diagnostic services from CAHDS and discharge criteria.

Based upon levels of diagnostic complexity the case manager may, in consultation with the referrer or external case manager, broker in additional specialist services for further assessment and the development of a new, or enhancement of an existing, multidisciplinary intervention plan.

It is expected that some referred children with particularly complex disorders will be receiving poly-pharmacy and may require a lengthy and intensive course of multidisciplinary assessment. Assessment may involve a child being weaned off medication requiring the institution of various arrangements for care and containment. Assessment in these cases may require a referral to existing tertiary inpatient services such as the Families at Work programme and Adolescent Unit at Bentley Hospital, Ward 4H at Princess Margaret Hospital and the Family Pathways programme. Service memorandums of understanding and interagency referral arrangements will be developed between the new Complex Attention and Hyperactivity Disorder Service, Families at Work, Bentley Adolescent Unit, Ward 4H and the Family Pathways programme. For children under the care of the Director General of the Department for Child Protection (DCP), inpatient admission and service agreements will be negotiated jointly with the nominated delegate of the DCP Director General.

For adolescents undergoing assessment and clinical intervention there may be a requirement for negotiated collaboration with services such as the Bentley Adolescent Unit, Youth link, Youth Reach South and the Multi-Systemic Therapy Teams.

The CAHDS services will have limited capacity to provide long term specialist mental health and child health interventions to referred children and adolescents. CAHDS will however provide advice to referrers on follow-up services that may be of assistance to patients post CAHDS assessment and interventions.

Model of Clinical Assessment

The conceptualisation of ADHD as a final common pathway for a variety of complex brain development processes⁵ leads to a complex model of multidisciplinary clinical assessment. It is important that the assessment matches reflected symptoms to an underlying pathological process rather than to external complaints about behaviour¹⁵.





The clinical assessment will attempt to identify a probable pathway for the presenting ADHD symptoms. This assessment methodology will assist the development of a collaborative treatment plan with the patient and family by identifying probable clinical domains triggering or contributing to clinically significant presenting symptoms. Clinical domains may include (but are not limited to) the following;

- Genetic Domain: Genetic influence¹⁴ is likely on presenting symptoms with corroborated evidence of the likely presence of ADHD in the family of origin.
- Neurological Domain: Neurological delay is confirmed or likely, leading to executive dysfunction associated with frontal-striatal circuits¹³. Prominent symptoms in this clinical domain include compromised response inhibition, reduced short-term memory, poor planning behaviour, and difficulties with cognitive flexibility.
- Psychosocial Domain: Psychosocial factors⁵ influencing symptoms including family dysfunction, parenting skill deficits and social adversity, resulting in the possible triggering of an underlying genetic predisposition or susceptibility and a prominence in symptoms.
- Emotional Regulation Domain: Severe effects upon emotional regulation where traumatic episodes⁴ may have led to likely attachment disorder, stress or anxiety related ADHD symptoms.
- Mood Domain: Attentional symptoms are likely to be exacerbated by an underlying or prominent mood disorder^{4, 8}. It may also be the case that academic and social difficulties associated with ADHD symptoms may contribute to reduced mood.

Clinical Domains usually co-occur in children with complex presentations and the assessment will identify the domains and symptom antecedents most likely to be contributing to the presenting clinical symptoms. Severe clinical symptoms in a child can contribute to considerable stress and distress in family members. This can include a sense of failure and possible feelings of hopelessness. The clinical model will encourage a collaborative and supportive approach.

Clinical Intervention

At allocation, and during the assessment process, a shared care arrangement will be negotiated and instituted with the referrer. Treatment protocols, roles and responsibilities will be negotiated within the shared care agreement. The shared care management plan will be written on an electronic form that will be an extension of the original referral form. Ongoing feedback between the referrer and the case manager will occur via the electronic shared care management format. Multidisciplinary intervention will be brokered in by the case manager and negotiated with the referrer. Clinical intervention will be time limited. The time limit will be decided within the clinical team and negotiated at allocation and on an ongoing basis with the referrer.

For private practitioners involved in ongoing shared care management the Medicare Benefits Scheme (MBS) has provider numbers that may support shared care planning and management.





The model of intervention will be based upon probable symptom pathways and associated clinical domains identified at assessment. Medical therapy, behavioural interventions, cognitive training, allied health, education and family interventions will form the basis of multidisciplinary-shared care intervention plans. The CAHDS model of intervention will also include General Practitioners as an important part of the shared care management process. Medical and allied health interventions will be guided by the *Western Australian Practice Guideline for Attention and Hyperactivity Related Problems*. Guidance will be provided on prescription practice and medical therapy, including titrating dosage and poly pharmacy.

Clinical Resource Management

Clinical Assessment, Diagnostic and Intervention Service

It is planned that each clinician will have between 10 and 15 patients being assessed or treated at any one time. The service target goal for both new clinics is for a multidisciplinary diagnostic service to be delivered to approximately 300 children residing in metropolitan or rural Western Australia each year.

It is planned that there will be an audio-visual conferencing service provided to clinicians in rural and remote settings. Provision will be made for the assessment of rural children whom meet intake criteria.

Group treatment and intervention programmes with patients and families will be developed depending upon clinical demand and resources available.

Discharge from the clinical service will be governed by a time limit, agreed clinical outcomes and non-attendance criteria. Shared care plans will incorporate clear time limits and clinical outcome criteria in order to ensure equity of access to the available clinical service. Re-referral process and criteria will follow existing CAMHS procedures and be based upon intake criteria.

Specialist Multidisciplinary Tertiary Consultation Service

The new clinics will offer a Specialist Multidisciplinary Tertiary Consultation Service to clinicians and school staff assessing, treating or educating children 0 to 18 years with debilitating attentional symptoms and co-morbid behavioural syndromes. Consultation will be delivered to referrers on an ongoing basis via an online shared-care communication process. Access to consultation for the broader health and education community will be negotiated within parameters set by resources available and governed by policy and procedure manuals to be developed for the new services.

CAPACITY BUILDING

One of the major goals of the new service is to enhance and guide improvements to clinical and educational services for children with ADHD and co-morbid disorders in WA. International evidence supports the development of new services as Tertiary Consultative





services with a mandate to build capacity in the public and private health and education sectors¹⁷.

Building capacity is defined as; conducting publishable research, teaching, developing and promoting the practice guideline, supervision of other health and education professionals, supervision and teaching of registrars and students, consultation, and community education. This will also include conducting and supporting relevant programme development in the health and education sectors.

Staff Job Description Forms (JDF's) will therefore be developed with a proportional time allocation. The services will aim for a 40% clinical, 40% consultation and capacity building and 20% administration split in the duties written into the clinic JDF's. Some disciplines may have differing proportions of the consultation, capacity building and clinical split.

Clinical Training

There are part time training positions in Child and Adolescent Psychiatry and Paediatrics available. All clinical staff will be encouraged to take on students in the capacity building component of their professional roles.

There will be a focus upon the training of clinicians in rural and remote areas utilizing audio-visual conferencing.

Clinical Research

The Telethon Institute for Child Health Research (TICHR) has recently completed a research study titled: *Long Term Effects of Stimulant medication in the Treatment of ADHD Children*. This study, undertaken by Grant Smith and a research team from TICHR has extracted health data from the longitudinal RAINE Child Health study, and examined health indices for children prescribed stimulant medication. Another aim of this pilot study was to use the RAINE database to examine symptom antecedents. The project plan for this research was developed by MICADHD, and the study was funded by the Health Department. MICADHD member Paediatrician Dr Brad Jongeling wrote the original project plan.

Following on from this pilot study, a longitudinal research project will be designed to examine health data for children on long-term stimulant medication, and continue the examination of symptom antecedents. It is planned that this new study will be a joint venture between the new Complex Attention and Hyperactivity Disorder Service, the Telethon Institute for Child Health Research (TICHR), the Child Development Service (CDS) and other interested stakeholders. A proposal to develop the research design is to be discussed with TICHR, CDS, interested participants and stakeholders in the second half of 2009.

West Australian Practice Guideline

A subcommittee of senior clinicians and education specialists from MICADHD has prepared a first draft of the practice guideline. However the guideline will need to be further refined and re-written into an online format. The hosting website for the guideline is www.adhd.health.wa.gov.au the online draft and the website are being developed in collaboration with a web design team from the Health Department. The conversion of the practice guideline to an online document and the development of the hosting website will





commence when the clinical model is endorsed by the Mental Health Operational Review Committee. Extensive development, stakeholder consultation and piloting of the guideline is scheduled to begin in the second half of 2009.

EVALUATION

The evaluation programme for the new services is to be developed collaboratively by the Area Health Services, the Clinical Reference Committee and if funds are available, TICHR.

The evaluation methodology, including the key performance indicators will be developed collaboratively by the Clinical Reference Committee and the Area Mental Health Services. Part of the ongoing research programme will include gathering data on the medium to longer term outcomes for the patient cohort and their families, for the collating of evidence on the effectiveness of the CAHDS service.

To assist evaluation and service planning, CAHDS will work with partners and collaborators to collate relevant data on current stimulant prescription and dosage, numbers of children and young people diagnosed with ADHD and related disorders, authorised prescribers, and ADHD patient co-morbidities.

CRC will begin the development of the evaluation programme in the second half of 2009. There will be an extensive clinical and operational review of the new services after the first 12 months of service delivery. The Metropolitan Area Health Services, the Clinical Reference Committee, WACHS, TICHR and staff from CAHDS will conduct this review. The review is due to begin in the first quarter of 2011.





APPENDICES

APPENDIX 1

Classification system

The new services, as mental health facilities, will use the current disease classification system used by the Health Department and all Western Australian public mental health services. The classification system used will be the International Classification of Diseases Mental Health Manual (10) Australian Modification (ICD 10AM). The current version of this manual is referred to as the ICD 10AM, developed in 2002 by the World Health Organization⁴. The ICD 10AM refers to ADHD as a Disturbance of Activity and Attention with the clinical code F90.0. To avoid community confusion and for the sake of stakeholder clarity the current clinical model will at this point in time use the term ADHD rather than the less well know term Disturbance of Activity and Attention.

Core symptoms of ADHD can be caused by numerous factors. Jensen⁵ argues that as the evidence does not support a single plausible cause of ADHD it may be more realistic to conceptualize ADHD as a final common pathway for a variety of complex brain developmental processes. There may well be multiple pathways from the etiological causes to the manifestation of the cluster of behavioural symptoms that comprise the disorder.⁶

In determining a diagnosis of ADHD the developmental status and history, age, gender, cognitive functioning, emotional maturity, familial and social circumstances of the child need to be examined. Accuracy in the identification and diagnosis of ADHD is related directly to the rigor of the clinical assessment, with due regard for the origin, clinical significance, persistence and stability of core symptoms within the developmental and social context of each child.

Differential diagnosis

It is essential that clinicians perform multi-axial assessment and examine for the likely causes of core symptoms, and for the presence of co-existing conditions and disorders. Treatment should not normally begin until the likely origins of presenting core symptoms have been fully examined and a clear diagnosis has been confirmed. Treatment will vary according to the differential diagnosis and co-morbidities, and treatment efficacy will be assisted by examining whether presenting core symptoms may be occurring during the course of another disorder. Other disorders and conditions found to be associated with the presence of core symptoms in pre-school and school age children include the following conditions:

- Snoring, sleep disordered breathing, obstructive sleep apnea⁹
- Generalized resistance to thyroid hormone (GRTH)¹¹
- Personality change due to a general medical condition⁸
- Behaviour change due to the use of medication⁸
- Intellectual disability⁸
- Childhood mood disorder^{4, 8}
- Childhood anxiety disorder⁸
- Attachment disorder^{4, 7}
- Conduct Disorder⁴
- Post Traumatic Stress Disorder⁴





Delivering a Healthy WA

- Maternal depression¹⁰
- Abuse, and social adversity⁵

Diagnostic criteria

The core symptoms of ADHD comprise of developmentally inappropriate levels of:

- inattention (difficulty in concentrating, premature ceasing of tasks, changing frequently from one task to another)
- overactivity or hyperactivity (excessive restlessness, disorganized excessive levels of activity)
- impulsive behaviour (disinhibition, ill regulated behaviour).

In order to meet ICD 10AM diagnostic criteria it is essential that symptoms of hyperactivity and inattention both be present and:

- have their onset before the age of six years
- have persisted for at least six months
- must be pervasive (present in more than one setting, e.g. at home, at school, socially)
- have caused significant functional impairment
- are not better accounted for by other disorders (e.g. pervasive developmental disorder, schizophrenia, other psychotic disorders, disorders of psychological development, depression, anxiety, metabolic disorder, and other general health conditions).



**APPENDIX 2****Western Australian Attention Deficit Hyperactivity Disorder Clinical Reference Committee**

Members	Clinical Speciality
Dr Cathy Nottage	Chair & Consultant Psychiatrist South Metropolitan Mental Health Service
Patrick Marwick	Clinical Director, North Metropolitan Child & Adolescent Mental Health Service
Dr Rowan Davidson	Chief Psychiatrist, Office of the Chief Psychiatrist, Department of Health
Dr John Wray	Paediatrician, Head of Department, State Child Development Centre & Senior Clinical Advisor to the Child & Adolescent Community Health Service
Dr Claire Pattison	Consultant Psychiatrist, North Metropolitan Mental Health Service
Adrienne Wills	Area CAMHS Coordinator, South Metropolitan Child & Adolescent Mental Health Service
Chris Gostelow	Area Manager Student Services, Department of Education and Training
Leah Barton	Senior Occupational Therapist, Way Centre, Bentley Health Service
Dr Prue Stone	Acting Director CAMHS, Western Australian Country Health Service
Paul Williamson	Clinical Nurse Specialist, CAMHS, Great Southern Mental Health Service
Lee-Ann Bamess	Senior Speech Pathologist, Way Centre, Bentley Health Service
Craig Russell	Specialist Clinical Psychologist, NMCAMHS, Executive Officer, Clinical Reference Committee, Executive Officer, Ministerial Implementation Committee for ADHD in WA





REFERENCES

- 1) Western Australia Legislative Assembly, *Attention Deficit Hyperactivity Disorder in Western Australia, Report Number 8*, Education and Health Standing Committee, Parliament of Western Australia, 2004.
- 2) Department of Health, *Western Australian Stimulant Regulatory Scheme 2007 Annual Report*, Pharmaceutical Services Branch, Health Protection Group, Department of Health, Western Australia, 2008.
- 3) Department of Health, *Discussion Paper: Notification of Persons with Stimulant Induced Psychosis*, Pharmaceutical Services Branch, Environmental Health Directorate, Department of Health, Western Australia, 2006.
- 4) World Health Organization, *International Classification of Diseases. Mental Health Manual (ICD 10AM)*. Sydney: National Centre for Classification in Health, 2002.
- 5) Jensen PS. *ADHD: Current concepts on etiology, pathophysiology, and neurobiology*. Child Adolesc Psychiatr Clin N Am: 2000; (3): 557-72.
- 6) Sonuga-Barke E. *The dual pathway model of AD/HD: an elaboration of neuro-developmental characteristics*. Neurosci 7 Biobehav Rev 2003; 27: 593-604.
- 7) Roy P, Rutter M, Pickles A. *Institutional care: associations between overactivity and lack of selectivity in social relationships*. Jou of Child Psychol & Psychiatr: 2004; 45 (4): 866-73.
- 8) American Psychiatric Press. *Diagnostic and statistical manual of mental disorders (DSM-IV)*. Washington (DC): The Press; 1994.
- 9) O'Brien LM, Holbrook CR, Mervis CB, et al. *Sleep and neurobehavioural characteristics of 5 to 7 year-old children with parentally reported symptoms of attention-deficit/hyperactivity disorder*. Pediatrics 2003; 111(3): 554-63.
- 10) Cunningham CE, Boyle MH. *Preschoolers at risk for attention-deficit hyperactivity disorder and oppositional defiant disorder: family, parenting and behavioural correlates*. J Abnorm Child Psychol 2002; 30(6): 555-69.
- 11) Hauser P, Zametkin AJ, Martinez P, Vitiello B, Matochik JA, Mixson AJ, et al. *Attention deficit-hyperactivity disorder in people with generalised resistance to thyroid hormone*. N Engl J Med 1993; 328: 997-1001.
- 12) The MTA Cooperative Group. *A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. Multimodal Treatment Study of Children with ADHD*. Arch Gen Psychiatry 1999; 56: 1073-86.
- 13) Durston S. *A review of the biological bases of ADHD: What have we learned from imaging studies?* Ment Retard Dev Disabil Res Rev 2003; 9 (3): 184-95.
- 14) Cook E H. *Genetics of attention deficit hyperactivity disorder*. Ment Retard Dev Disabil Res Rev 1999; 5 (3): 191-8.





- 15) Nutt et al. *Evidence based guidelines for the management of attention-deficit/hyperactivity disorder in adolescents in transition to adult services and in adults: recommendations from the British Association for Psychopharmacology.* *Jou of Psychopharmacol* 2007; 21; 10: 9-41.
- 16) Department of Health, *Infancy to Young Adulthood: A Mental Health Policy for Western Australia*, Mental Health Division, 2001.
- 17) Schwab-Stone ME & Briggs-Gowan MJ, The scope and prevalence of psychiatric disorders in childhood and adolescence, in Young JG and Ferrari P (eds) *Designing Mental Health Services and Systems for Children and Adolescents: A Shrewd Investment*, International Association for Child and Adolescent Psychiatry and Allied Professions, Philadelphia, Brunner/Mazel, 1998.

