



MPA

**Report No: 935**

# Child Health

**To determine compliance of monitoring side effects of medication in the treatment of ADHD in children and young people as advised by NICE guideline No.72**

# 

**Undertaken by**

**Carol Sibbald**

**ADHD Nurse Specialist**

**Children’s Services**

|  |  |  |
| --- | --- | --- |
|  |  | **Report compiled by Dawn Bothwell**  Safe & Effective Care Department |
| **Date of Audit Report: February 2015** |  |

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# Introduction

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Attention Deficit Hyperactivity Disorder (ADHD) has been described as a common, highly heritable neuro-developmental disorder arising in early childhood (Asherson, Kuntsi, and Taylor, 2005). ADHD is a condition with core symptoms of inattention, impulsivity and hyperactivity inappropriate to the developmental stage (National Collaborating Centre for Mental Health 2009).

ADHD occurs in approximately 5.29 per cent of children worldwide making it the most common neuro-developmental disorder in childhood (Polanczyk et al 2007). In the UK there has been an exponential rise in the number of young people diagnosed with ADHD as evidenced by the rise in young people being prescribed medication for ADHD. During the last 30 years in the UK there has been an increase in prescribed medication from 0.5/1000 to 3/1000 (Olfson et al, 2003).

If left untreated symptoms of hyperactivity, inattentiveness and impulsivity are claimed to be predictive of negative outcomes across many domains including self-esteem, peer relationships, academic achievement and occupational status (Coghill 2005). In addition there is a higher incidence of disruptive and anti-social behaviour, mood and anxiety disorders and an increase in accidents (Coghill 2005). Recent studies, including the Lifetime Impairment Survey demonstrate that ADHD, if untreated can have a negative and pervasive impact, with wide ranging associated costs in terms of healthcare and other services and long term consequences for multiple aspects of life (Pitts et al, 2015).. It is well established that effective treatment, pharmacological and non-pharmacological or a combination of both can help improve outcomes (Jenson et al, 2001).

A diagnosis of ADHD is made by assessing a child or young person’s behaviour across a variety of settings. Care must be taken to make a differential diagnosis as ADHD frequently occurs alongside other conditions including autism.

Clinical audit should make the link between the implementation of clinical standards and real life improvement. The function of this audit is to establish a baseline on which to base future audits and to improve the existing service by ensuring compliance of the NICE clinical guideline 72 ([www.nice.org.uk](http://www.nice.org.uk)) The guideline makes recommendations for the diagnosis and management of ADHD in children aged 3 and over, young people and adults. Currently there are approximately 1600 children/young people in the South Eastern Health and Social Care Trust who are in receipt of medication for ADHD/ADD.

NICE Clinical Guideline, No. 72 sets out specific guidelines for monitoring of side effects in terms of height, weight and blood pressure.

The NICE guideline suggests:

* Healthcare professionals should consider using standard symptom and side effect rating scales throughout the course of treatment as an adjunct to clinical assessment for people with ADHD.
* Height should be measured every 6 months in children and young people
* Weight should be measured 3 and 6 months after drug treatment has started and every 6 months thereafter in children, young people and adults
* Height and weight in children and young people should be plotted on a growth chart and reviewed by the healthcare professional responsible for treatment
* In people with ADHD, heart rate and blood pressure should be monitored and recorded on a centile chart before and after each dose change and routinely every 3 months

# Audit Design

## **Objective(s)**

The aim of the audit was to determine a baseline for compliance monitoring of height, weight and blood pressure as recommended by NICE guideline 72. The audit also examined timing of reviews following commencement of medication. The results would provide evidence for service improvement and a baseline for future audits.

* To review 30 records from each of the 3 sectors a total of 90
* To determine if children/young people taking stimulant medication were monitored in line with NICE guidance
* To assess if height, weight and blood pressure were recorded at time intervals as set out by NICE guidelines
* To determine if measurements were plotted on an appropriate centile chart at each review

## **Methodology**

For the purpose of this audit a data collection tool was designed in conjunction with the Multi-professional audit department.. Ninety patient records were reviewed from different sectors to help establish a baseline to work from for future reference. Within the South Eastern Trust ADHD clinics are established in 4 sites to provide ease of access for families. The sites are Scrabo Children’s Centre, the Downe Hospital, Warren Children’s Centre and Stewartstown Road Health Centre. Records from Warren and Stewartstown Road are kept on the same site.. The service has undergone significant change during the last 2-3 years with the introduction of scheduler: an electronic booking system and partial booking.

Currently staffing comprises:

- 2 Consultants, both part-time

- 2 Associate specialists, one part-time and one full time

- 1 nurse prescriber

Data Collection Strategy:

Data was collected prospectively. Records of children and young people who were diagnosed and commenced on medication towards the end of 2011- 2014 were targeted. This provided a sufficient time period in which to ascertain compliance.

Data was collected during December2014 and January 2015.

**Measures of Quality / Standards:**

|  |  |  |  |
| --- | --- | --- | --- |
| Evidence of Quality | % | Exception | Instructions and definitions for data collection |
| Initial review should be 3 months from starting medication | 100% | None |  |
| Was Height measured at initial review appointment and plotted on centile charts | 100% | None |  |
| Was Weight measured at initial review appointment and plotted on centile charts | 100% | None |  |
| Was Blood Pressure measured at initial review appointment and plotted on centile charts | 100% | None |  |
| 2nd review should be 6 months after starting medication | 100% | None |  |
| Was Height measured at every review appointment and plotted on centile charts | 100% | None |  |
| Was Weight measured at every review appointment and plotted on centile charts | 100% | None |  |
| Was Blood Pressure measured at every review appointment and plotted on centile charts | 100% | None |  |

**For information only**:

* Sector
* Date patient first started medication
* Type of 1st contact
* Type of 2nd contact

# Results

The data collection proformas were analysed by the Safe & Effective Care Department using Microsoft Excel.

For information only:

* Sector

|  |  |
| --- | --- |
| Sector |  |
| Ards | 33% (30) |
| Downe | 33% (30) |
| Lisburn | 33% (30) |

(N=90) due to the rounding percentages do not add to 100%

* Date medication first started

The selection of patients examined ranged from their medication starting in 2011 up to August 2014 to give a more complete overview of the service provided.

* Type of 1st contact ( Initial review)

|  |  |
| --- | --- |
| Type |  |
| Face to Face | 92% (83) |
| Telephone | 7% (6) |
| Email | 1% (1) |

(N=90)

The email contact was in the Lisburn sector, 4 of the telephone contacts were in the Ards sector with the other 2 being in Lisburn and Downe.

* Type of 2nd contact (2nd review)

|  |  |
| --- | --- |
| Type |  |
| Face to face | 71% (64) |
| Telephone | 6% (5) |
| Email | 1% (1) |

(N=70) A total of 20 patients did not have a 2nd review within the time frame advised by the guideline and therefore are not applicable

This time the email contact was in the Downe sector, 4 of the telephone contacts were in the Ards sector with the other one being in the Lisburn sector. During data collection it was noted that in several cases appointments had been sent within the time advised by the guideline but the appointment was cancelled or the patient did not attend. Allowances should be made for this in future audits.

Measures of Quality:

1. Date of 1st contact since commencing medication

|  |  |
| --- | --- |
| Length |  |
| 3 months or less | 59% (53) |
| 4 – 6 months | 26% (23) |
| Greater than 6 months | 16% (14) |

(N=90)

Noted during data collection in some cases appointments were cancelled or the patient did not attend

1. Was height measured at initial review?

|  |  |
| --- | --- |
| Height measured | |
| Yes | 87% (78) |
| No | 13% (12) |

(N=90)

* In most of the clinics equipment is available to carry out height and weight but on occasions equipment for measuring height and weight in Stewartstown road was not available. This affected only a small number within the survey.

1. Was height plotted on the centile chart at initial review?

|  |  |
| --- | --- |
| Height plotted | |
| Yes | 41% (32) |
| No | 59% (46) |

(N=78)

1. Was weight measured at initial review?

|  |  |
| --- | --- |
| Weight measured | |
| Yes | 92% (83) |
| No | 8% (7) |

(N=90)

1. Was weight plotted on centile chart at initial review?

|  |  |
| --- | --- |
| Weight plotted on chart | |
| Yes | 40% (33) |
| No | 60% (50) |

(N=83)

1. Was blood pressure measured at initial review?

|  |  |
| --- | --- |
| Blood pressure measured | |
| Yes | 70% (63) |
| No | 30% (27) |

(N=90)

1. Was blood pressure plotted on centile chart at initial review?

|  |  |
| --- | --- |
| Blood pressure plotted on chart | |
| Yes | 1% (1) |
| No | 98% (62) |

(N=63)

* During the period that data was collected, blood pressure centile charts were not available in any clinic locations, it must be assumed that the one per cent was an error

1. Did patient have a 2nd review?

|  |  |
| --- | --- |
| 2nd Review |  |
| Yes | 78% (70) |
| No | 22% (20) |

(N=90)

* 6 of the patients that did not have a 2nd review started the medication in 2014 with only one being less than 6 months but greater than 3 months since starting the medication.
* 14 that did not have a 2nd review since starting their medication in 2013.

The following questions relate to the 70 patients that had a 2nd review

1. Date of 2nd contact since commencing medication?

|  |  |
| --- | --- |
| Length of Time to 2nd contact | |
| 6 months or less | 24 % (17) |
| 7 – 9 months | 19% (13) |
| More than 9 months | 57% (40) |

(N=70)

This

1. Was height reviewed at every review appointment (2nd review onwards)?

|  |  |
| --- | --- |
| Height reviewed | |
| Yes | 90% (61) |
| No | 10% (7) |

(N=68) Recorded as Not Applicable in 2 cases

1. Were all recorded heights plotted on centile chart?

|  |  |
| --- | --- |
| Heights recorded | |
| Yes | 57% (39) |
| No | 43% (29) |

(N=68) Recorded as Not Applicable in 2 cases

1. Was weight measured at every review appointment?

|  |  |
| --- | --- |
| Weight measured |  |
| Yes | 94% (65) |
| No | 6% (4) |

(N=69) Recorded as Not Applicable in 1 case

1. Were all recorded weights plotted on centile chart?

|  |  |
| --- | --- |
| Weights recorded |  |
| Yes | 58% (40) |
| No | 42% (29) |

(N=69) Recorded as Not Applicable in 1 case

1. Was blood pressure measured at every review appointment?

|  |  |
| --- | --- |
| Blood pressure measured | |
| Yes | 85% (58) |
| No | 15% (10) |

(N=68) Recorded as Not Applicable in 2 cases

1. Was all recorded blood pressures plotted on centile chart?

|  |  |
| --- | --- |
| Blood pressures plotted | |
| No | 100% (68) |

(N=68) Recorded as Not Applicable in 2 cases

The breakdown of measures of quality by sector is under the appendices.

# Conclusions

## **Areas of High Compliance** (areas achieving 90% compliance and above)

**Measure of Quality**

|  |  |  |
| --- | --- | --- |
| Measure of Quality | Expected % | Achieved % |
| Weight was measured at initial review appointment | 100% | 92% |
| Height measured was at every review appointment | 100% | 90% |
| Weight was measured at every review appointment | 100% | 94% |

**Areas Identified for Improvement (areas achieving less than 90% compliance)**

**Measure of Quality**

|  |  |  |
| --- | --- | --- |
| Measure of Quality | Expected % | Achieved % |
| Initial review should be 3 months from starting medication | 100% | 59% |
| Height was measured at initial review appointment | 100% | 87% |
| Height measurement was plotted on centile chart at initial review appointment | 100% | 41% |
| Weight measurement was plotted on centile chart at initial review appointment | 100% | 40% |
| Blood Pressure was measured at initial review appointment | 100% | 70% |
| Blood pressure measurement was plotted on centile chart at initial review appointment | 100% | 1% |
| 2nd review should be 6 months after starting medication | 100% | 24% |
| Height measurement was plotted on centile chart after each review appointment | 100% | 57% |
| Weight measurement was plotted on centile chart after each review appointment | 100% | 58% |
| Blood Pressure was measured at every review appointment | 100% | 85% |
| Blood pressure measurement was plotted on centile chart after each review appointment | 100% | 0% |

**Discussion**

Results from the audit were not unexpected. Deficits and inconsistencies were highlighted across the Trust. The process of audit highlighted ssues and already there has been a change in practice with regard to recording on centile charts.

The service deals with large numbers of children and young people, approximately 1,600. across a large geographical area In addition there are high numbers of phone enquiries requiring response by team members and, this along with limited numbers of clinical sessions has impacted on reviews carried out as recommended.

During the past two to three years there has been a change in the service pathway. The introduction of a single point of entry and the scheduler system ensures that children and young people with behavioural issues are directed to the appropriate service in the first instance. The ADHD/ADD service is part of a stepped care pathway. Children and young people now coming to the ADHD/ADD clinic for the first time have had a behavioural assessment, reports from school have been obtained and the majority of cases have received behavioural input from the Primary Mental Health Team. The service has been using Qb testing for almost two years and older children referred with ADHD like symptoms are tested and then seen at the paediatrician’s clinic for feedback and further assessment if indicated.

The service uses Scheduler an electronic system which highlights when reviews are due.Partial booking was introduced which permits service users a degree of choice regarding time and date of appointment. The creation of the role of the ADHD nurse prescriber has increased clinical time. These changes to the service have already reduced time between review appointments and it is hoped future audits will reflect the changes.

Although the audit focused on height, weight and blood pressure the guideline suggests using a rating scales to monitor symptoms and side effects. Recent discussion with clinicians has led to agreement on the use of a rating scale at all reviews.

Equipment to measure height, weight and blood pressure is often not available in the various clinic locations. The equipment is not standardised, some clinicians use electronic devices for measuring blood pressure while others use the old fashioned cuffs. Provision of paediatric cuffs is also important and should be available in all clinic locations.

While auditing the records, it was clear that that while face to face contacts had not taken place within the recommended time there was contact with patients albeit in an ad hoc way, via email and telephone. It was also noted in some cases that while appointments were offered at the appropriate time interval they were either cancelled or the patient did not attend. A further audit should take this into account.

# Recommendations

* Improve compliance with monitoring guidelines by looking at alternative methods of delivery e.g. skill mix and shared care
* ADHD Rating scale to be used at each review on all sites.
* Appropriate sized cuffs to be available to each clinician
* BP centile charts to be placed in all clinical records and spare charts to be made

available in each clinical room.

* Shared care guidelines to be disseminated to all clinicians
* Monitoring guidelines to be disseminated to all clinicians
* Re-audit

**REFERENCES:**

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Olfson, M. Gameroff, M.J., Marcus, S.C., Jensen,P.S. (2003) National trends in the treatment of attention deficit hyperactivity disorder. American Journal of Psychiatry, 160, 1071-1077.

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-Polanczyk, G., Silva de Lima, M., Horta, B.L. (2007) Worldwide prevalence of ADHD. American Journal of Psychiatry*,* 4, 942-948.

MPA/T03

|  |
| --- |
| ***SEHSCT01mainlogo*ACTION PLAN** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Directorate:** | Children’s Services | **Location:** | Trust wide |

|  |  |
| --- | --- |
| **Specialty:** | ADHD |

|  |  |
| --- | --- |
| **Audit Title:** | To determine compliance of monitoring side effects of medication in the treatment of ADHD in children and young peoplein accordance with NICE guideline No. 72 |

|  |  |
| --- | --- |
| **Date Audit Completed:** | January 2015 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Action to be taken** | **Person(s) responsible for action** | **Proposed date of action** | **Date action implemented** |
| **To improve efficiency of timely reviews through skill mix** | **Joanne Lee** |  |  |
| **Shared care guidelines to be placed in shared care folder** | **Administration/Carol Sibbald** |  |  |
| **Meeting with GP representatives to progress shared care** | **Dr. M McConkey** |  |  |
| **Monitoring guidelines to be placed in medical records along with ICD-10 symptoms** | **Administration** |  |  |
| **Provision of blood pressure cuffs to all clinicians** | **Carol Sibbald/ Administration** |  |  |
| **Blood pressure centile charts to be placed in all medical records** | **Administration** |  |  |
| **Re audit to determine higher degree of compliance** | **Carol Sibbald** |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Signature:** |  | **Date:** |  |

***Please complete and return this Action Plan to:***

***Multiprofessional Audit Co-Ordinator,***

***Multiprofessional Audit Department***

***Home 3,***

***Ulster Hospital***

**Breakdown of Measures of Quality by sector:**

1. Date of 1st contact since commencing medication

|  |  |  |  |
| --- | --- | --- | --- |
|  | Ards | Downe | Lisburn |
| 3 months or less | 67% (20) | 50% (15) | 60% (18) |
| 4 – 6 months | 17% (5) | 30% (9) | 30% (9) |
| More than 6 months | 17% (5) | 20% (6) | 10% (3) |

(N=30) \* (N=30) (N=30)

\*Due to rounding percentages do not add to 100%

1. Was height measured at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 73% (22) | 93% (28) | 93% (28) |
| No | 27% (8) | 7% (2) | 7% (2) |

(N=30) (N=30) (N=30)

1. Was height plotted on the centile chart at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 59% (13) | 14% (4) | 54% (15) |
| No | 41% (9) | 86% (24) | 46% (13) |

(N=22) \* (N=28) (N=28)

\*2 cases were recorded as Not Applicable in Ards

1. Was weight measured at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 87% (26) | 93% (28) | 97% (29) |
| No | 13% (4) | 7% (2) | 3% (1) |

(N=30) (N=30) (N=30)

1. Was weight plotted on centile chart at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 54% (14) | 14% (4) | 52% (15) |
| No | 46% (12) | 86% (24) | 48% (14) |

(N=26) (N=28) (N=29)

1. Was blood pressure measured at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 80% (24) | 53% (16) | 77% (23) |
| No | 20% (6) | 47% (14) | 23% (7) |

(N=30) (N=30) (N=30)

1. Was blood pressure plotted on centile chart at initial review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 4% (1) |  |  |
| No | 96% (23) | 100% (16) | 100% (23) |

(N=24) (N=16) (N=23)

1. Did patient have a 2nd review?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 77% (23) | 63% (19) | 93% (28) |
| No | 23% (7) | 37% (11) | 7% (2) |

(N=30) (N=30) (N=30)

1. Date of 2nd contact since commencing medication?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| 6 months or less | 30% (7) | 21% (4) | 21% (6) |
| 7 – 9 months | 22% (5) | 5% (1) | 25% (7) |
| More than 9 months | 48% (11) | 74% (14) | 54% (15) |

(N=23) (N=19) (N=28)

1. Was height reviewed at every review appointment (2nd review onwards)?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 77% (17) | 89% (16) | 100% (28) |
| No | 23% (5) | 11% (2) |  |

(N=22)\* (N=18)\* (N=28)

\*1 case was deemed as Not Applicable in Ards and Downe

1. Were all recorded heights plotted on centile chart?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 65% (11) | 50% (8) | 71% (20) |
| No | 35% (6) | 50% (8) | 29% (8) |

(N=17) (N=16) (N=28)

1. Was weight measured at every review appointment (2nd review onwards)?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 95% (21) | 84% (16) | 100% (28) |
| No | 5% (1) | 16% (3) |  |

(N=22) (N=19) (N=28)

1. Were all recorded weights plotted on centile chart?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 57% (12) | 50% (8) | 71% (20) |
| No | 43% (9) | 50% (8) | 29% (8) |

(N=21) (N=16) (N=28)

1. Was blood pressure measured at every review appointment (2nd review onwards)?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| Yes | 82% (18) | 72% (13) | 96% (27) |
| No | 18% (4) | 28% (5) | 4% (1) |

(N=22)\* (N=18)\* (N=28)

\*1 case was deemed as Not Applicable in Ards and Downe

1. Was all recorded blood pressures plotted on centile chart?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Ards** | **Downe** | **Lisburn** |
| No | 100% (18) | 100% (13) | 100% (27) |