CIRCULATION OF DRAFT CDL ALGORITHMS FOR INDUSTRY COMMENTS

The Council for Medical Schemes (CMS) in March (Circular 13 of 2006) embarked on a review process of 9 CDL algorithms. The industry provided significant contributions, and this amongst other evidence were duly reviewed by the CDL Advisory Panel. Further contributions to the process are invited. It should be noted that it is not the intent of CMS to implement the final reviewed algorithms in January 2007.

Firstly, CMS would like to invite further comments on the attached draft algorithms. It is important to note that comments must be in a specific format. The format is included for your convenience (click here). Should the need arise to include additional substantive information this should be forwarded simultaneously.

Consequent to the review process, the need was identified to clarify the management of those exceptional patients who do not respond to the therapy included in the algorithms. These patients generally suffer from severe forms of disease and would have exhausted all treatment options of the algorithms. Although provision has been made in the algorithms for a review process, the mechanisms for this are mostly vague or non-existent. Since these patients might need access to more advanced treatment, not specified in the algorithms, it is necessary to objectively review their cases and formulate access strategies to these treatments, where appropriate.

Secondly, CMS would like to invite comments regarding the management of these patients. The following three strategies need to be debated and comments are invited:

1. Initiation and maintenance of a national registry for specified diseases e.g. multiple sclerosis, rheumatoid arthritis, etc.
2. Setting objective entry and exit criteria for expensive high-technology treatments.
3. Implementation of review committees to consider applications for access to these treatments.
Should you wish to contribute, your comments must be received by this office not later than by Thursday 30 November 2006.

Kind regards,

KP MATSHIDZE
Head: Research and Monitoring
Glossary:
- DSM-IV – Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition
- ECT – Electroconvulsive Therapy

Applicable ICD 10 Coding:
- F31 Bipolar Affective Disorder
  - F31.0 Bipolar affective disorder, current episode hypomaniac
  - F31.1 Bipolar affective disorder, current episode manic without psychotic symptoms
  - F31.2 Bipolar affective disorder, current episode manic with psychotic symptoms
  - F31.3 Bipolar affective disorder, current episode mild or moderate depression
  - F31.4 Bipolar affective disorder, current episode severe depression without psychotic symptoms
  - F31.5 Bipolar affective disorder, current episode severe depression with psychotic symptoms
  - F31.6 Bipolar affective disorder, current episode mixed
  - F31.7 Bipolar affective disorder, currently in remission
  - F31.8 Other bipolar affective disorders
  - F31.9 Bipolar affective disorder, unspecified

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3. This algorithm may not necessarily always be clinically appropriate for the treatment of children. If this is the case, alternative paediatric clinical management is included within this benefit if it is supported by evidence-based medicine, taking into account considerations of cost-effectiveness and affordability.
References: (NOT PART OF ALGORITHM SUBMISSION - only for notice)

13. NICE:www.bps.org.uk/publications/core/core_home.cfm
Diagnosis

Active erosive disease?

NO

Non drug measures (rest, range-of-motion exercises) and add NSAID

Adequate response?

YES

Continue therapy

NO

Therapy fails

NO

Continue therapy

YES

Add a DMARD i.e. methotrexate or sulphasalazine

Consider chloroquine

Prednisone ≤ 7.5 mg/day orally can be utilized for all stages and intra-articular steroids consisting of 4 joint/year can be added

Adequate response?

YES

Continue therapy

NO

Review management:

Consider other DMARD therapies: i.e. penicillamine, azathioprine, cyclophosphamide, leflunamide

Treatment failure?

YES

Review management:

- Biologics
  - Entry/exit criteria
  - National registry
  - Evaluation panel

NO

Review management
### Glossary:
- **DMARD** – Disease modifying antirheumatic drugs
- **NSAID** – Non-steroidal anti-inflammatory agents

### Applicable ICD 10 Coding:
- **M05 Seropositive rheumatoid arthritis**
  - M05.0 Felty's syndrome
  - M05.1 Rheumatoid lung disease (J99.0*)
  - M05.2 Rheumatoid vasculitis
  - M05.3 Rheumatoid arthritis with involvement of other organs and systems
  - M05.8 Other seropositive rheumatoid arthritis
  - M05.9 Seropositive rheumatoid arthritis, unspecified
- **M06 Other rheumatoid arthritis**
  - M06.0 Seronegative rheumatoid arthritis
  - M06.1 Adult-onset Still's disease
  - M06.2 Rheumatoid bursitis
  - M06.3 Rheumatoid nodule
  - M06.4 Inflammatory polyarthritis
  - M06.8 Other specified rheumatoid arthritis
  - M06.9 Rheumatoid arthritis, unspecified
- **M08.0 Juvenile rheumatoid arthritis**

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MULTIPLE SCLEROSIS – DRAFT 1 2006

Symptomatic treatment:

Spasticity
Consider: baclofen

Hyperreflexic bladder
Consider: oxybutinin or imipramine or amitriptyline

Pain
Consider: amitriptyline or carbamazepine or opioid analgesic

Diagnosis

Relapsing-remitting

Benign

Reassure
Continued observation

Frequent relapse
Secondary progressive

Consider Beta Interferon

Response?

NO
Review management

YES
Continue therapy

Active disease

Symptomatic treatment:

Spasticity
Consider: baclofen

Hyperreflexic bladder
Consider: oxybutinin or imipramine or amitriptyline

Pain
Consider: amitriptyline or carbamazepine or opioid analgesic

Chronic progressive

Supportive therapy

Acute relapse

IV methylprednisolone for 5 days (500mg to 1g daily)

Glossary:

• IV – Intravenous

Applicable ICD 10 Coding:

• G35 Multiple sclerosis
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**HYPERTENSION – DRAFT 1 2006**

**Assessment**

**Major Risk Factors:**
- Levels of systolic & diastolic BP
- Smoking
- Dyslipidaemia
- Diabetes Mellitus
- Men > 55 years and Women > 65 years
- Family history of early onset of cardiovascular disease
- Waist circumference – abdominal obesity

**Target Organ Disease:**
- Left Ventricular Hypertrophy
- Microalbuminuria: albumin creatinine ratio
- Slightly elevated creatinine

**Associated Clinical Conditions:**
- Coronary Heart Disease
- Heart Failure
- Chronic Renal disease
- Stroke or transient ischaemic attack
- Peripheral arterial disease
- Advanced retinopathy

**Measure Blood Pressure**

<table>
<thead>
<tr>
<th>OTHER RISK FACTORS AND DISEASE HISTORY</th>
<th>NORMAL SBP120-129 or DBP 80-84 mmHg</th>
<th>HIGH NORMAL SBP 130-139 or DBP 85-89 mmHg</th>
<th>STAGE 1 MILD HYPERTENSION SBP 140-159 or DBP 90-99mmHg</th>
<th>STAGE 2 MODERATE HYPERTENSION SBP 160-179 or DBP 100-109 mmHg</th>
<th>STAGE 3 SEVERE HYPERTENSION SBP &gt;180 or DBP &gt;110 mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>No other major risk factors</td>
<td>Average risk</td>
<td>Average risk</td>
<td>Low added risk</td>
<td>Moderate added risk</td>
<td>High added risk</td>
</tr>
<tr>
<td>1-2 major risk factors</td>
<td>Low added risk</td>
<td>Low added risk</td>
<td>Moderate added risk</td>
<td>Moderate added risk</td>
<td>Very High added risk</td>
</tr>
<tr>
<td>≥ 3 major risk factors or target organ damage or diabetes mellitus</td>
<td>Moderate added risk</td>
<td>High added risk</td>
<td>High added risk</td>
<td>High added risk</td>
<td>Very High added risk</td>
</tr>
<tr>
<td>Associated clinical conditions</td>
<td>High added risk</td>
<td>Very High added risk</td>
<td>Very High added risk</td>
<td>Very High added risk</td>
<td>Very High added risk</td>
</tr>
</tbody>
</table>

**Determine Risk**

- **LOW ADDED RISK**
  - Monitor BP and other risk factors for 6-12 months
  - Monitor BP and other risk factors for 3-6 months
  - SBP ≥ 140 or DBP ≥ 90
  - Continue to monitor

- **MODERATE ADDED RISK**
  - Monitor BP and other risk factors for 3-6 months
  - SBP < 140 or DBP < 90

- **HIGH / VERY HIGH ADDED RISK**
  - Begin drug treatment
  - Is there SEVERE HYPERTENSION? SBP>180 or DBP>110mmHg
Are there compelling indications?

**YES**

Compelling indications:
- Angina: β-blocker or CCB (rate lowering preferred)
- Prior myocardial infarct or CAD: β-blocker and ACE inhibitor (ARB if ACE intolerant). Verapamil if β-blockers contraindicated.
- Heart Failure: ACE inhibitor (ARB if ACE intolerant) and certain β-blocker and aldosterone antagonist. Loop diuretics for volume overload.
- Left ventricular hypertrophy: ACE inhibitor or ARB.
- Stroke – secondary prevention: ACE inhibitor and diuretic, or ARB
- Diabetes type 1 or 2 with or without evidence of microalbuminuria or proteinuria: ACE inhibitor or ARB, usually in combination with diuretic
- Isolated systolic hypertension: Low dose thiazide or thiazide-like diuretic or long-acting CCB
- Chronic renal disease: ACE inhibitor or ARB, usually in combination with diuretic

**NO**

Routine Management:
1. Low dose hydrochlorothiazide (12.5mg preferred up to a maximum of 25mg) or thiazide-like diuretic.
2. ACE inhibitor or CCB long-acting dihydropyridines or non-dihydropyridines (ARB if ACE intolerant)
3. Add second agent from different class (especially diuretic if not already used)

Inadequate response?

**YES**

Consider referral to specialist

**NO**

Review Management

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**TARGETS FOR BP-LOWERING TREATMENT**

<table>
<thead>
<tr>
<th>Stage</th>
<th>BP Level (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All stages</td>
<td>&lt;140/90</td>
</tr>
<tr>
<td>Isolated Systolic Hypertension</td>
<td>Do not lower the DBP to &lt; 65</td>
</tr>
<tr>
<td>High-risk patients (e.g. stroke, transient ischaemic attack, heart failure, angina, MI, diabetes, renal disease, etc.)</td>
<td>&lt;130/80</td>
</tr>
</tbody>
</table>
Glossary:
- BP – Blood pressure
- SBP – Systolic blood pressure
- DBP – Diastolic blood pressure
- α-blocker – Alpha-receptor blocker
- ACE inhibitor – Angiotensin converting enzyme inhibitor
- ARB – Angiotensin receptor blocker
- β-blocker – Beta-receptor blocker
- CCB – Calcium channel blocker
- MI – Myocardial infarct

Applicable ICD 10 Coding:
- I10 Essential (primary) hypertension
- I11 Hypertensive heart disease
  - I11.0 Hypertensive heart disease with (congestive) heart failure
  - I11.9 Hypertensive heart disease without (congestive) heart failure
- I12 Hypertensive renal disease
  - I12.0 Hypertensive renal disease with renal failure
  - I12.9 Hypertensive renal disease without renal failure
- I13 Hypertensive heart and renal disease
  - I13.0 Hypertensive heart and renal disease with (congestive) heart failure
  - I13.1 Hypertensive heart and renal disease with renal failure
  - I13.2 Hypertensive heart and renal disease with both (congestive) heart failure and renal failure
  - I13.9 Hypertensive heart and renal disease, unspecified
- I15 Secondary hypertension
  - I15.0 Renovascular hypertension
  - I15.1 Hypertension secondary to other renal disorders
  - I15.2 Hypertension secondary to endocrine disorders
  - I15.8 Other secondary hypertension
  - I15.9 Secondary hypertension, unspecified
- O10 Pre-existing hypertension complicating pregnancy, childbirth and the puerperium
  - O10.0 Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium
  - O10.1 Pre-existing hypertensive heart disease complicating pregnancy, childbirth and the puerperium
  - O10.2 Pre-existing hypertensive renal disease complicating pregnancy, childbirth and the puerperium
  - O10.3 Pre-existing hypertensive heart and renal disease complicating pregnancy, childbirth and the puerperium
  - O10.4 Pre-existing secondary hypertension complicating pregnancy, childbirth and the puerperium
  - O10.9 Unspecified pre-existing hypertension complicating pregnancy, childbirth and the puerperium
- O11 Pre-existing hypertensive disorder with superimposed proteinuria
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Fasting plasma TC > 5mmol/l

manifest vascular heart disease? Other risk factors? E.g. diabetes, smoking, hypertension

characterise hyperlipidaemia
Full risk assessment, fasting TG, TC, HDLC, LDLC
Screen for secondary causes e.g. diabetes, hypothyroidism

primary hyperlipidaemia

secondary hyperlipidaemia

Genetic dyslipidaemia present?

manifest / established vascular disease present?

YES

NO

persistent hyperlipidaemia

resolved hyperlipidaemia

10 year MI risk > 20% (If age<60 years, extrapolate to age 60) Utilise Framingham Risk Score

YES

NO

consider drug therapy Life style & risk-factor modification

lifestyle modification Modify other risk factors Follow up
Predominant hypercholesterolaemia

Consider the use of a statin
Use the lowest dose possible to achieve target response

Target achieved?
LDLC ≤ 3mmol/l or a reduction of 45%

NO
Review management

YES
Follow up 6-12 monthly

Predominant hypertriglyceridaemia
(triglycerides > 5mmol/l)

Consider fibrate therapy

Poor response
Review management

Glossary:
- TC – Total cholesterol
- TG – Triglycerides
- HDLC – High density lipoprotein cholesterol
- LDLC – Low density lipoprotein cholesterol
- MI – Myocardial infarction

Applicable ICD 10 Coding:
- E78.0 Pure hypercholesterolaemia
- E78.1 Pure hyperglyceridaemia
- E78.2 Mixed hyperlipidaemia
- E78.3 Hyperchylomicronaemia
- E78.4 Other hyperlipidaemia
- E78.5 Hyperlipidaemia, unspecified
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GLAUCOMA – DRAFT 1 2006

Diagnosis

Closed angle
- Start with β-blocker eye drops
  - Advanced and high-risk glaucoma
    - Review for surgery
  - Intolerance?
    - Decrease dose or switch to alternative second line agent

Open angle
- Contraindications?
  - Second-line topical monotherapies:
    - α₂-agonist,
    - carbonic anhydrase inhibitor,
    - prostaglandin analogue, pilocarpine
  - Poor response?
    - Check adherence
      - Increase dose if possible
      - Switch to alternative second line agent

Inadequate response to monotherapy?
- Check adherence
  - Try combination therapy

Inadequate intra-ocular pressure or disease progression despite maximum medical therapy?
- Check adherence
- Review for further medication or surgery

Intolerance?
  - Decrease dose or switch to alternative combination
Glossary:
- **β-blocker** – Beta-receptor blocker
- **α₂-agonist** – Alpha-2 receptor agonist

Applicable ICD 10 Coding:
- **H40 Glaucoma**
  - H40.0 Glaucoma suspect
  - H40.1 Primary open-angle glaucoma
  - H40.2 Primary angle-closure glaucoma
  - H40.3 Glaucoma secondary to eye trauma
  - H40.4 Glaucoma secondary to eye inflammation
  - H40.5 Glaucoma secondary to other eye disorders
  - H40.6 Glaucoma secondary to drugs
  - H40.8 Other glaucoma
  - H40.9 Glaucoma, unspecified
- **Q15.0 Congenital glaucoma**

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Diagnosis

Primary partial seizures

- Start with phenytoin or carbamazepine or sodium valproate or valproic acid or lamotrigine or phenobarbitone

- Not tolerated or controlled?
  - Alternatives: Phenytoin or carbamazepine or sodium valproate or valproic acid or topiramate or oxcarbazepine

- Ongoing seizures?
  - Add second drug
  - Suggested combinations: Carbamazepine and sodium valproate or valproic acid, Phenytoin and sodium valproate or valproic acid, Sodium valproate or valproic acid and lamotrigine, Anticonvulsant and topiramate

- Uncontrolled seizures
  - Review for further management

Primary generalised seizures

- Start with sodium valproate or valproic acid or lamotrigine

- Not tolerated or controlled?
  - Alternatives and/or addition:
    - For absence seizures: ethosuximide
    - For myoclonic seizures: clonazepam
    - For tonic-clonic seizures: carbamazepine or phenytoin or topiramate or oxcarbazepine

- Ongoing seizures?
  - Add second drug:
    - If taking sodium valproate or valproic acid for absence seizures add ethosuximide,
    - If taking sodium valproate or valproic acid for myoclonic seizures add clonazepam
    - If taking sodium valproate or valproic acid for tonic-clonic seizures add lamotrigine

- Uncontrolled seizures
  - Review for further management
Applicable ICD 10 Coding:

- **G40 Epilepsy**
  - G40.0 Localization-related (focal)(partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset
  - G40.1 Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures
  - G40.2 Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures
  - G40.3 Generalized idiopathic epilepsy and epileptic syndromes
  - G40.4 Other generalized epilepsy and epileptic syndromes
  - G40.5 Special epileptic syndromes
  - G40.6 Grand mal seizures, unspecified (with or without petit mal)
  - G40.7 Petit mal, unspecified, without grand mal seizures
  - G40.8 Other epilepsy
  - G40.9 Epilepsy, unspecified

- **G41 Status epilepticus**
  - G41.0 Grand mal status epilepticus
  - G41.1 Petit mal status epilepticus
  - G41.2 Complex partial status epilepticus
  - G41.8 Other status epilepticus
  - G41.9 Status epilepticus, unspecified

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**CHRONIC RENAL DISEASE – DRAFT 1 2006**

**Diagnosis**

**Stage 1**
- GFR > 90
- Renal damage with normal GFR

**Stage 2**
- GFR 60-90
- Renal damage with mild ↓ GFR

**Stage 3**
- GFR 30-59
- Moderate ↓ GFR

**Stage 4**
- GFR 15-29
- Severe ↓ GFR

**Stage 5**
- ESRD / GFR <15 (or on dialysis)
- Renal failure requiring renal replacement
- End Stage Renal Disease

### Progressive Management Stage 1 to Stage 5:

- Ideal target is proteinuria <1g/24h to induce remission in deterioration and <0.3g for regression.

- Aim for a stable or increasing GFR. Note that a normal decline is observed with ageing at a GFR decline of 1 mL/min/1.73 m2 per year after 45 years.

- Start with low dose sodium diet or Thiazide diuretic therapy, or both

- Add low dose ACE inhibitor or start immediately with an ACE inhibitor (Best effects when used with a diuretic e.g. hydrochlorothiazide or loop diuretic if required)

- Up titrate the ACE inhibitor to the maximum dose tolerated. A decline in function may occur but patients should be observed every one to two weekly allowing GFR to settle. (Consult a specialist if necessary)

- Checking of serum potassium only required when using higher doses of ACE inhibitors and CRD stage 3 or greater is present. If hyperkalaemia a problem then use other anti-proteinuric drugs i.e. beta blocker or calcium antagonist. Note: These drugs are not as good as ACE inhibitors for proteinuria reduction.

- Add and uptitrate beta blocker and/or non-dihydropyridine CCB’s even if blood pressure is controlled.

- Optimise blood pressure control with other antihypertensive agents; Blood Pressure <130/80mmHg lower if diabetes or proteinuria (morning pre-treatment value)

- Patients require early nephrological referral for management and assessment for dialysis and transplant when GFR < 60ml/min
**Prevent Osteodystrophy**

- Give phosphate binder with meals (Calcium carbonate)
- Maintain normal calcium and phosphate levels, monitor PTH levels
- Reserve 1α-hydroxy cholecalciferol for hypocalcaemia or progressive hyperparathyroidism
  - Monitor serum calcium and/or PO₄ for high levels

**Prevent Anaemia**

- Annual Screen for anaemia Hb<11g/dl
  - Assess type of anaemia – RBC indices
  - Assess iron status – serum ferritin (target 200-500ng/ml) and TSAT (20-50%)
  - Exclude blood loss and other causes of anaemia – faecal occult blood test, etc.
  - Ensure adequate dialysis dose
  - Exclude inflammation
  - If iron deficient then supplementary iron to reach and then maintain targets
    - Trail of Oral Fe for 1 month at 2-3 mg/kg/day elemental then switch to IV iron if still Fe deficient
- Treat folate deficiency
  - 2.5-5mg/day folic acid

**Iron status good but Hb still <11g/dl**

- Erythropoietin (EPO) required if patient enrolled/on chronic dialysis
  - Subcutaneous route preferred
  - Once target Hb reached, reduce EPO and/or frequency to maintain at target

**Glossary:**
- GFR - Glomerular filtration rate
- ACE inhibitor – Angiotensin converting enzyme inhibitor
- Hb - Haemoglobin
- CRD – Chronic renal disease
- 1α-hydroxy – 1-alpha-hydroxy
- PO₄ – Phosphate
- ESRD – End stage renal disease
- CCB – Calcium channel blocker
- TSAT – Total iron saturation
- Fe – Iron
- EPO – Erythropoietin
- PTH – Parathyroid hormone

**Applicable ICD 10 Coding:**
- N03 Chronic nephritic syndrome
  - N03.0 Chronic nephritic syndrome, minor glomerular abnormality
  - N03.1 Chronic nephritic syndrome, focal and segmental glomerular lesions
  - N03.2 Chronic nephritic syndrome, diffuse membranous glomerulonephritis
Applicable ICD 10 Coding: (continued)

- N03.3 Chronic nephritic syndrome, diffuse mesangial proliferative glomerulonephritis
- N03.4 Chronic nephritic syndrome, diffuse endocapillary proliferative glomerulonephritis
- N03.5 Chronic nephritic syndrome, diffuse mesangiocapillary glomerulonephritis
- N03.6 Chronic nephritic syndrome, dense deposit disease
- N03.7 Chronic nephritic syndrome, diffuse crescentic glomerulonephritis
- N03.8 Chronic nephritic syndrome, other
- N03.9 Chronic nephritic syndrome, unspecified

- N11 Chronic tubulo-interstitial nephritis
  - N11.0 Nonobstructive reflux-associated chronic pyelonephritis
  - N11.1 Chronic obstructive pyelonephritis
  - N11.8 Other chronic tubulo-interstitial nephritis
  - N11.9 Chronic tubulo-interstitial nephritis, unspecified

- N18 Chronic renal failure
  - N18.0 End-stage renal disease
  - N18.8 Other chronic renal failure
  - N18.9 Chronic renal failure, unspecified

- I12.0 Hypertensive renal disease with renal failure
- I13.2 Hypertensive heart and renal disease with both (congestive) heart failure and renal failure
- O10.2 Pre-existing hypertensive renal disease complicating pregnancy, childbirth and the puerperium
- O10.3 Pre-existing hypertensive heart and renal disease complicating pregnancy, childbirth and the puerperium

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All patients should stop smoking, avoid irritants and have an annual influenza immunisation
Early effective treatment of exacerbations

**Stage I**
FEV1 60-79% of predicted value
Limits strenuous activity
6 minute walking distance <600-200m
BMI ≤ 25-21

Consider oral corticosteroid trial: prednisone 40mg/day for 14 days

**Bronchodilators**: relieve symptoms, do not alter decline in FEV1
β2 agonist inhaler: 2 puffs 6 hourly as needed
or
Ipratropium bromide inhaler: 2 puffs 6 hourly as needed
or
Combination of above: 6 hourly as needed
Oral theophylline 6-8mg/kg/day in divided doses adjusted to plasma trough levels

**Objective improvement in FEV1 of >12% and >200ml to more than 80% predicted**
Treat as for Asthma

**Stage II**
FEV1 40-59% of predicted value
Limits activities performed at 'normal' pace
6 minute walking distance <600-200m
BMI ≤ 25-21

Consider oral corticosteroid trial: prednisone 40mg/day for 14 days

**Bronchodilators**: relieve symptoms, do not alter decline in FEV1
β2 agonist inhaler: 2 puffs 6 hourly as needed
or
Ipratropium bromide inhaler: 2 puffs 6 hourly as needed
or
Combination of above: 6 hourly as needed and consider
Oral theophylline 6-8mg/kg/day in divided doses adjusted to plasma trough levels

**Improvement of FEV1 < 10 % and significant symptomatic improvement**
Optimise bronchodilator therapy

**Stage III**
FEV1 < 40% of predicted value
Impairs activities of daily living, to virtual inactivity
6 minute walking distance <200m
BMI ≤ 25-21

Consider oral corticosteroid trial: prednisone 40mg/day for 14 days

**Bronchodilators**: relieve symptoms, do not alter decline in FEV1
β2 agonist inhaler: 2 puffs 6 hourly as needed or
Ipratropium bromide inhaler: 2 puffs 6 hourly as needed or
Combination of above: 6 hourly as needed and consider
Oral theophylline 6-8mg/kg/day in divided doses adjusted to plasma trough levels

**No objective response**: Stop corticosteroids
Optimise bronchodilator therapy and other supportive therapy

**Severe advanced disease**
Consider long term domiciliary oxygen
Treat complications
Prevent weight loss

**Review management**
Glossary:
- FEV1 – Forced expiratory volume in 1 second
- β2 – Beta-2 receptor
- PFT – Predicted

Applicable ICD 10 Coding:
- J43 Emphysema
  - J43.0 MacLeod's syndrome
  - J43.1 Panlobular emphysema
  - J43.2 Centrilobular emphysema
  - J43.8 Other emphysema
  - J43.9 Emphysema, unspecified
- J44 Other chronic obstructive pulmonary disease
  - J44.0 Chronic obstructive pulmonary disease with acute lower respiratory infection
  - J44.1 Chronic obstructive pulmonary disease with acute exacerbation, unspecified
  - J44.8 Other specified chronic obstructive pulmonary disease
  - J44.9 Chronic obstructive pulmonary disease, unspecified

Note:
1. Medical management reasonably necessary for the delivery of treatment described in this algorithm is included within this benefit, subject to the application of managed health care interventions by the relevant medical scheme.

2. To the extent that a medical scheme applies managed health care interventions in respect of this benefit, for example clinical protocols for diagnostic procedures or medical management, such interventions must –
   a. not be inconsistent with this algorithm;
   b. be developed on the basis of evidence-based medicine, taking into account considerations of cost-effectiveness and affordability; and
   c. comply with all other applicable regulations made in terms of the Medical Schemes Act, 131 of 1998

3. This algorithm may not necessarily always be clinically appropriate for the treatment of children. If this is the case, alternative paediatric clinical management is included within this benefit if it is supported by evidence-based medicine, taking into account considerations of cost-effectiveness and affordability.