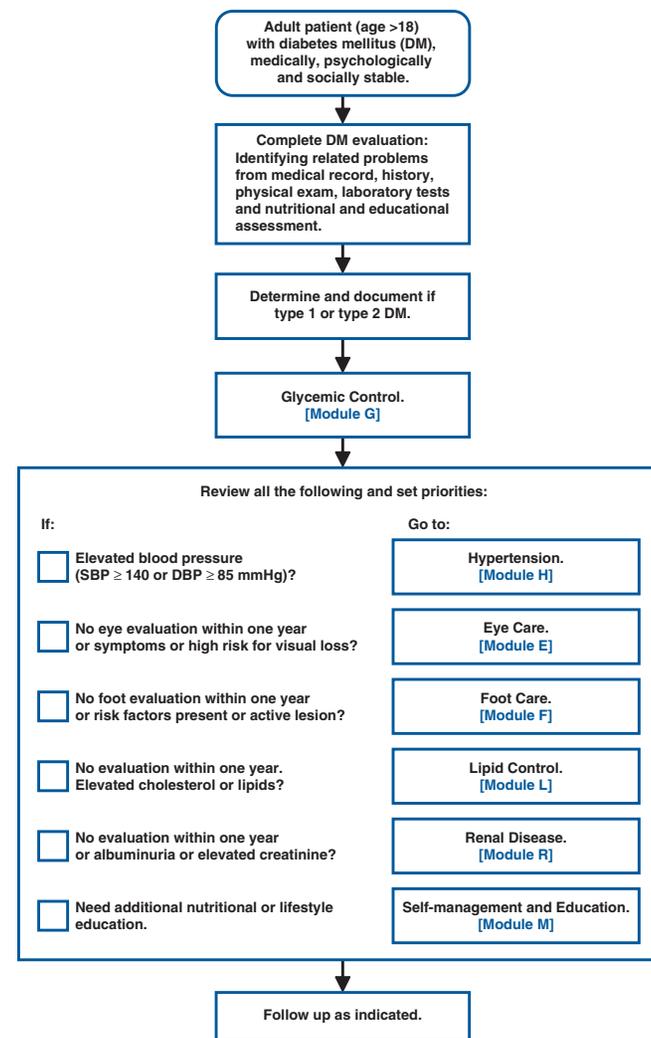


PROVIDER REFERENCE CARD Management of Diabetes Mellitus

Oral Hypoglycemic		Dosing	Comments
Sulfonylureas 2nd generation			
<i>glyburide</i>	Initial	1.25–5mg once daily	Administer once daily doses with breakfast or first main meal.
	Maintenance	1.25–20mg in 1 or 2 divided doses	
	Maximum	20mg in 1 or 2 divided doses	
<i>glyburide micronized</i>	Initial	0.75–3mg once daily	Administer once daily doses with breakfast or first main meal.
	Maintenance	0.75–12mg in 1 or 2 divided doses	
	Maximum	12mg in 1 or 2 divided doses	
<i>glipizide</i>	Initial	2.5–5mg once daily	Administer once daily doses with breakfast or first main meal. Doses greater than 15mg/day should be divided and given twice daily.
	Maintenance	5–20mg once daily	
	Maximum	40mg in 2 divided doses	
<i>glipizide extended release</i>	Initial	5mg once daily	Administer with breakfast.
	Maintenance	5–10mg once daily	
	Maximum	20mg once daily	
<i>glimiperide</i>	Initial	1–2mg once daily	Administer with breakfast or first main meal.
	Maintenance	1–4mg once daily	
	Maximum	8mg once daily	
Biquanides			
<i>metformin</i>	Initial	500mg bid or 850mg qam	Administer with meals; contraindicated if creatinine > 1.5 (male) or > 1.4 (female); hold for patients undergoing IV dye procedures.
	Maintenance	850mg bid	
	Maximum	2550mg in 3 divided doses	
Alpha-glucosidase Inhibitors			
<i>acarbose</i>	Initial	25mg tid	Administer with first bite of each main meal.
	Maintenance	50mg tid	
	Maximum	100mg tid; 50mg tid (≤60kg)	
<i>miglitol</i>	Initial	25mg tid	Administer with first bite of each main meal.
	Maintenance	50mg tid	
	Maximum	100mg tid	
Thiazolidinediones			Liver function tests at baseline with monitoring every two months during the first year.
<i>rosiglitazone</i>	Initial	4mg qd or 2mg bid	May be given without regard to meals.
	Maintenance	8mg qd or 4mg bid	
	Maximum	8mg qd or 4mg bid	
<i>pioglitazone</i>	Initial	15 or 30mg qd	May be given without regard to meals. 45mg dose studied only as monotherapy.
	Maintenance	30mg qd	
	Maximum	45mg qd	
Meglitinides			
<i>repaglinide</i>	Initial	0.5mg tid (patients who are hypoglycemic agent naive or have HbA _{1c} < 8%). 1–2mg tid (patients previously treated with hypoglycemics or have HbA _{1c} > 8%)	Administer within 15–30 minutes of each meal.
	Maintenance	0.5–4mg tid	
	Maximum	16mg/day	

Primary Care - Core Algorithm



Classification of Blood Pressure in DM^(a)

	Systolic		Diastolic
Optimal	< 120 mm Hg	and	< 80 mm Hg
Normal	< 130 mm Hg	and	< 85 mm Hg
High-normal	130-139 mm Hg	or	85-89 mm Hg
Hypertension	> 140 mm Hg	or	> 90 mm Hg

Blood pressure goal should be less than < 140/85, with lower target levels individualized.

Major co-morbidity includes, but is not limited to, any or several of the following conditions: cardiovascular disease, chronic obstructive pulmonary disease, chronic liver disease, stroke, malignancy, etc.

¹ Mild microvascular disease is defined by early background retinopathy, and/or microalbuminuria and/or mild neuropathy.

² Moderate microvascular disease is defined by pre-proliferative retinopathy, macroalbuminuria and/or demonstrable peripheral neuropathy (sensory loss).

³ Advanced microvascular disease is defined by severe non-proliferative, retinopathy and/or renal insufficiency (serum creatinine > 2.0mg/dl) and/or insensate extremities or severe autonomic neuropathy (gastroparesis, impaired sweating, orthostatic hypotension, etc.).

⁴ Surrogate for > 15 years of life expectancy.

⁵ Moderate degree of major co-morbid condition (surrogate for 5-15 years of life expectancy).

⁶ Severe degree or end-stage major co-morbid condition (surrogate for < 5 years of life expectancy).

Every person with diabetes must have an annual documented foot risk assessment. Visual inspection at routine primary care visit is recommended for high-risk patients.

Target Value for Hemoglobin A1c (HbA_{1c})

RISK FACTORS			
Major Co-morbidity or Advanced Physiological Age	Microvascular Disease		
	Absent or Mild ¹	Moderate ²	Advanced ³
Absence ⁴	< 7% (< 1% above upper normal range)	< 8% (< 2% above upper normal range)	< 9% (< 3% above upper normal range)
Present ⁵	< 8% (< 2% above upper normal range)	< 8% (< 2% above upper normal range)	< 9% (< 3% above upper normal range)
Marked ⁶	< 9% (< 3% above upper normal range)	< 9% (< 3% above upper normal range)	< 9% (< 3% above upper normal range)

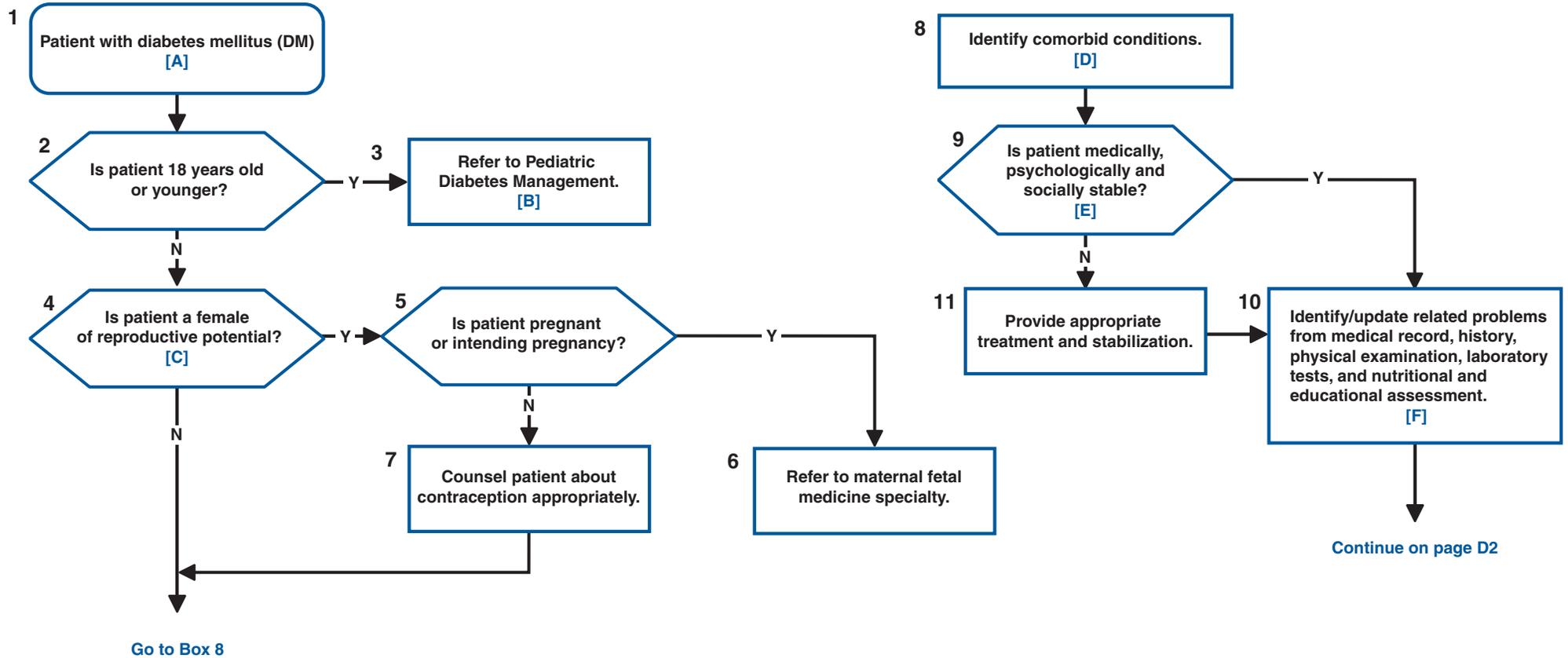
Recommended Treatment Options for Type 2 DM

Therapy	Drugs	Expected reduction in HbA _{1c} over a 2-3 mo. period of follow-up
Lifestyle modification, diet and exercise	None	
Lifestyle modification, diet and exercise Monotherapy with oral agent	Sulfonylurea or biguanide	1-2 percent
Lifestyle modification, diet and exercise Combination (add a second oral agent)	Sulfonylurea or biguanide	1-2 percent
	Sulfonylurea or biguanide + alpha-glucosidase inhibitor	0.5 to 1 percent
	Sulfonylurea or biguanide + thiazolidinedione	0.7 to 1.75 percent
Insulin with oral agent	Biguanide + repaglinide	0.1 to 0.3 percent
	Biguanide + insulin Thiazolidinedione + insulin Sulfonylurea + insulin	
Insulin	Insulin alone	
Referral		

1. Carefully selected individuals may benefit from three-drug oral hypoglycemic therapy. In general, such patients may benefit from referral to a diabetes care team.

November 2000

Algorithm D1: Management of Diabetes Mellitus in the Primary Care Setting Module D - Core Algorithm



**Algorithm D2:
Management of Diabetes Mellitus in the Primary Care Setting
Module D - Core Algorithm**

Continued from page D1

12 Determine and document if DM is type 1 or 2 (if not already done).
[G]

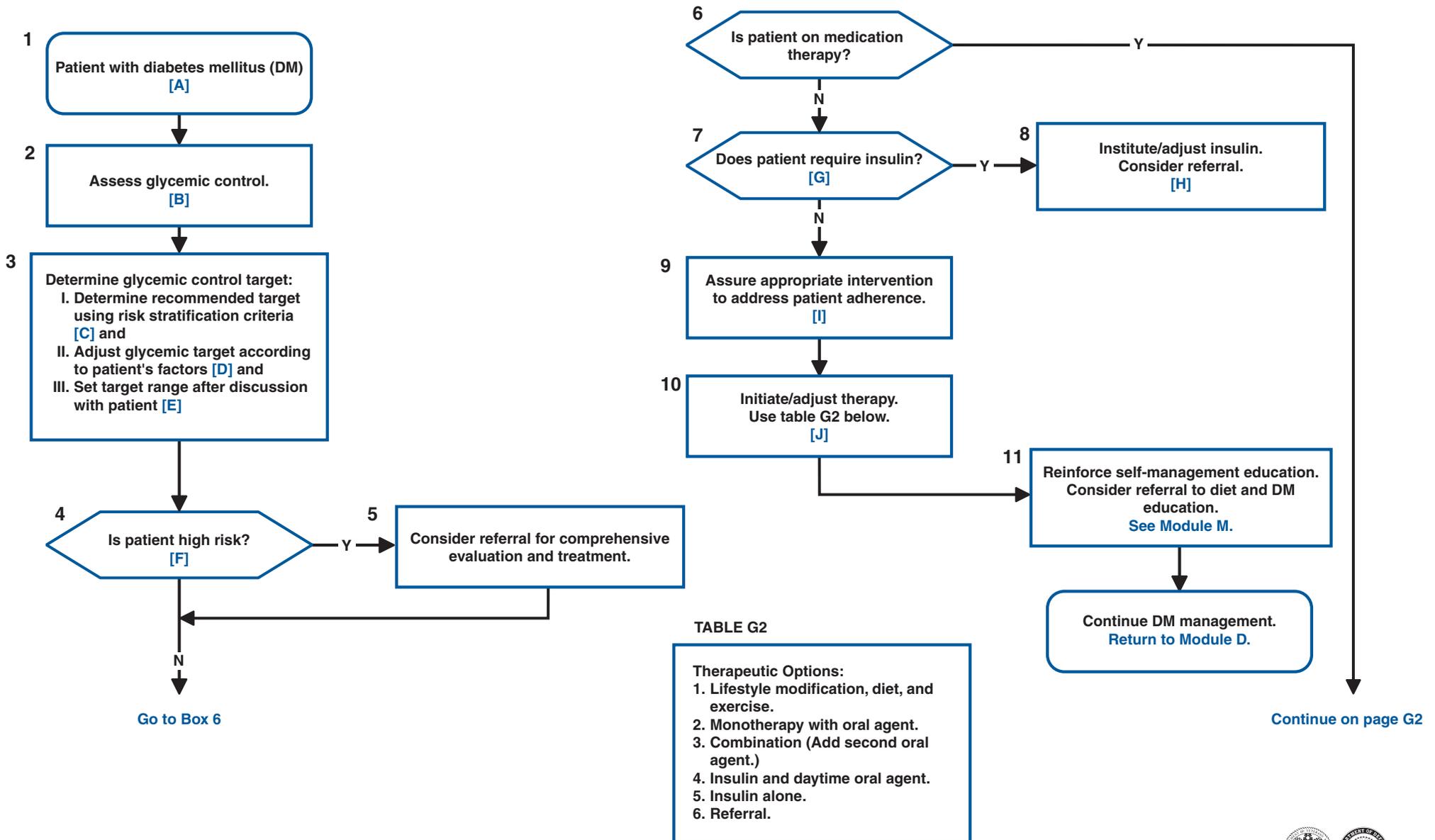
13 Evaluate/manage Glycemic Control.
[Module G]

14 Review systems and set priorities for patient's care.
[H]

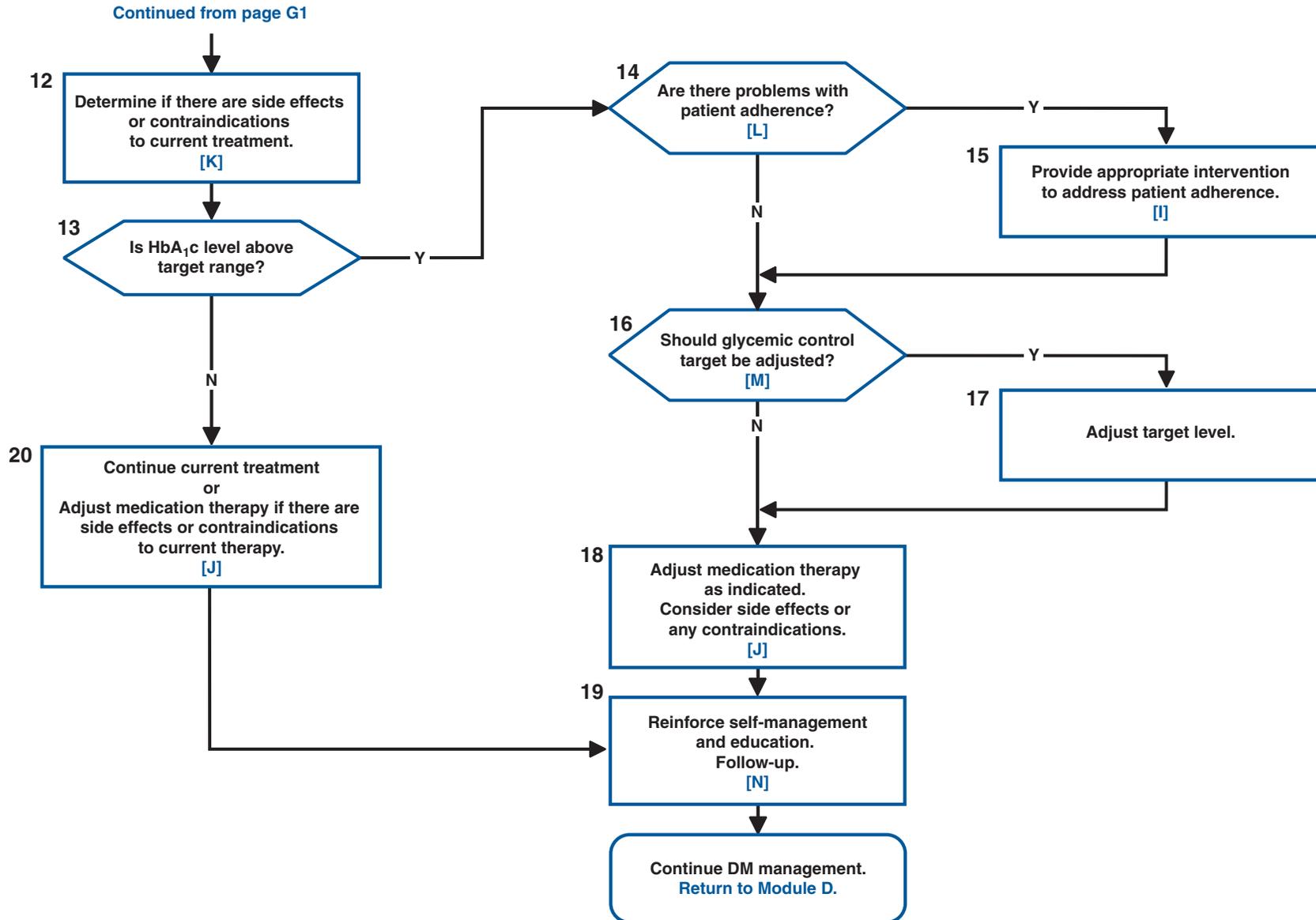
If:	Go to:
<input type="checkbox"/> Elevated blood pressure (SBP \geq 140 or DBP \geq 85 mmHg)?	Hypertension. [Module H]
<input type="checkbox"/> No eye evaluation within one year or symptoms or high risk for visual loss?	Eye Care. [Module E]
<input type="checkbox"/> No foot risk assessment within one year or risk factors present or active lesion?	Foot Care. [Module F]
<input type="checkbox"/> No lipids evaluation within one year or elevated cholesterol or lipids?	Lipid Control. [Module L]
<input type="checkbox"/> No renal evaluation within one year or albuminuria or elevated creatinine?	Renal Disease. [Module R]
<input type="checkbox"/> Need additional nutritional or lifestyle education.	Self-management and Education. [Module M]

15 Follow up as indicated.

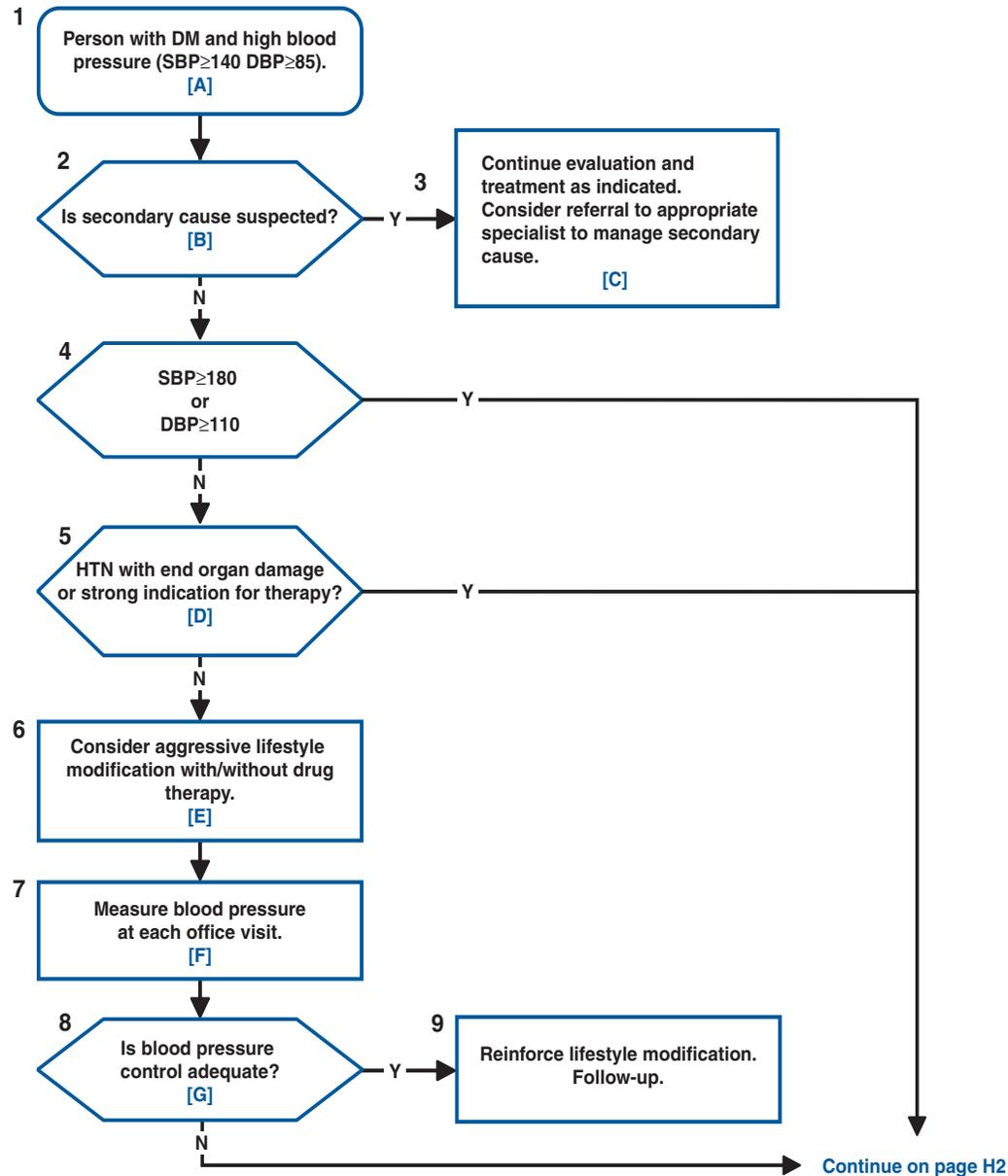
Algorithm G1: Management of Diabetes Mellitus in the Primary Care Setting Module G - Glycemic Control



**Algorithm G2:
Management of Diabetes Mellitus in the Primary Care Setting
Module G - Glycemic Control**

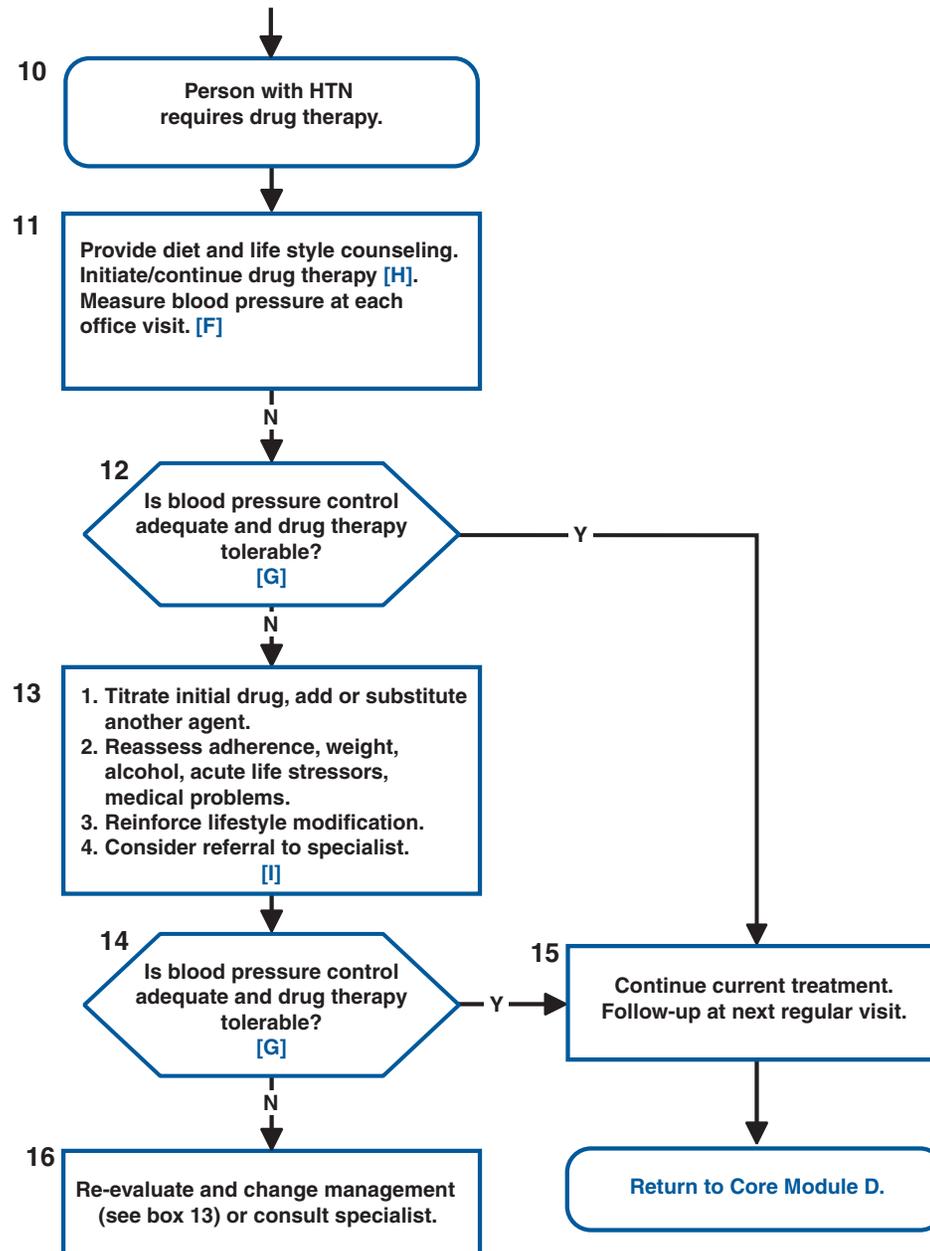


Algorithm H1: Management of Diabetes Mellitus in the Primary Care Setting Module H - Hypertension (HTN) Management

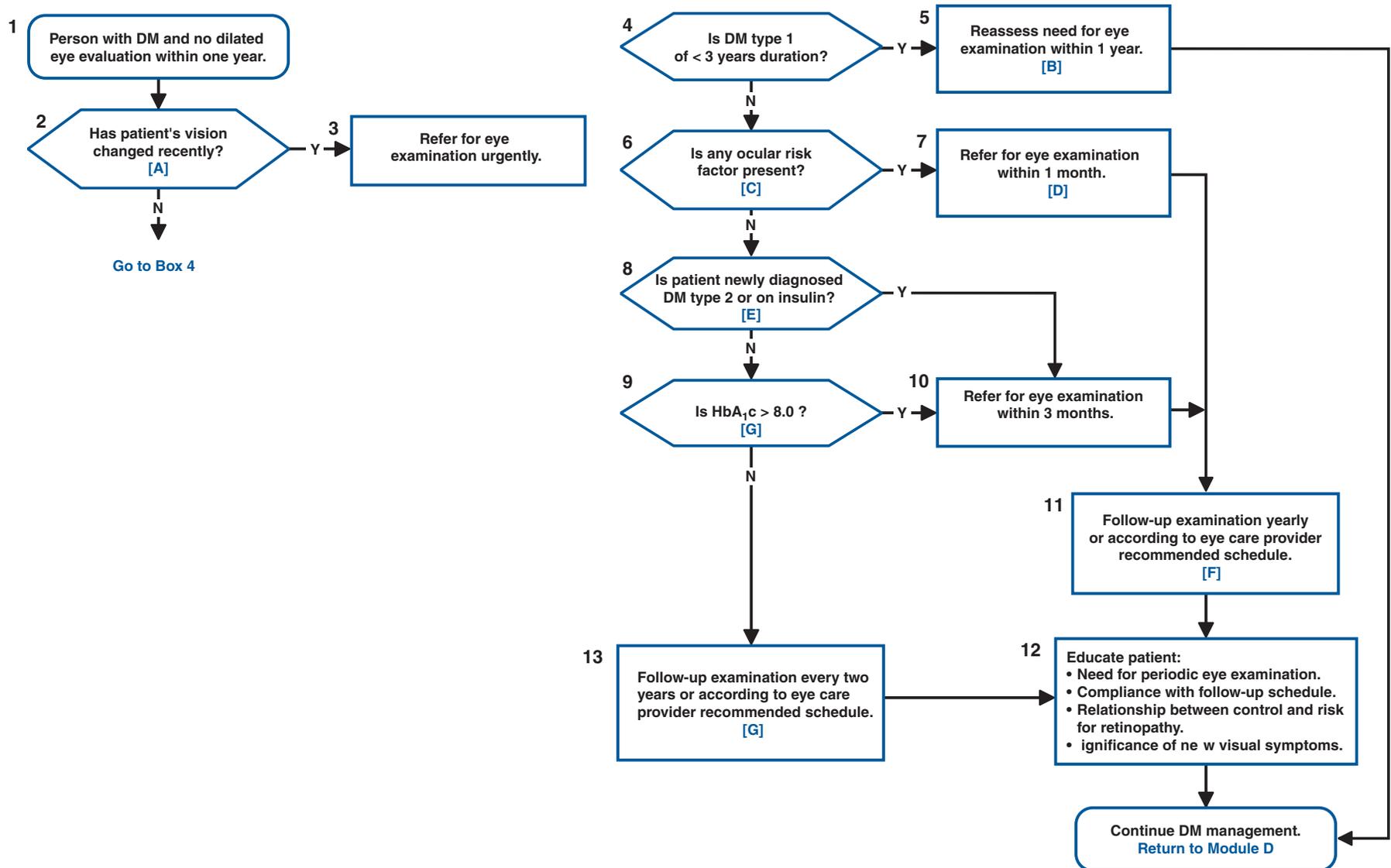


**Algorithm H2:
Management of Diabetes Mellitus in the Primary Care Setting
Module H - Hypertension (HTN) Management**

Continued from page H1



Algorithm E: Management of Diabetes Mellitus in the Primary Care Setting Module E - Eye Care



Diabetes Foot Screen

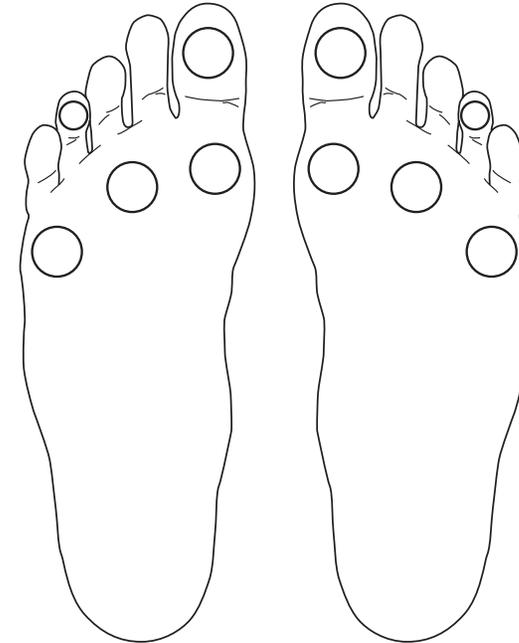
Fill in the following blanks with a “Y” or “N” to indicate findings on the right or left foot.

	R	L
Is there a foot ulcer now?	_____	_____
Is there a history of foot ulcer?	_____	_____
Is there an abnormal shape of the foot?	_____	_____
Is there toe deformity?	_____	_____
Are the toenails thick or ingrown?	_____	_____
Is there callus buildup?	_____	_____
Is there swelling?	_____	_____
Is there elevated skin temperature?	_____	_____
Is there muscle weakness?	_____	_____
Can the patient see the bottom of his/her feet?	_____	_____
Is the patient wearing improperly fitting shoes?	_____	_____
Does the patient use footwear appropriate for his/her category?	_____	_____

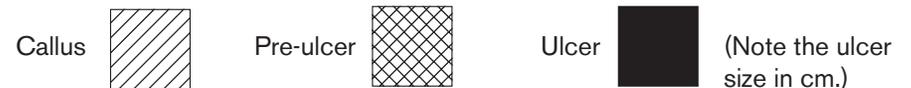
Indicate the level of sensation in the circles:

⊕ = Can feel the 10 gram nylon filament.

⊖ = Cannot feel the 10 gram nylon filament.



Draw the pattern where there is:

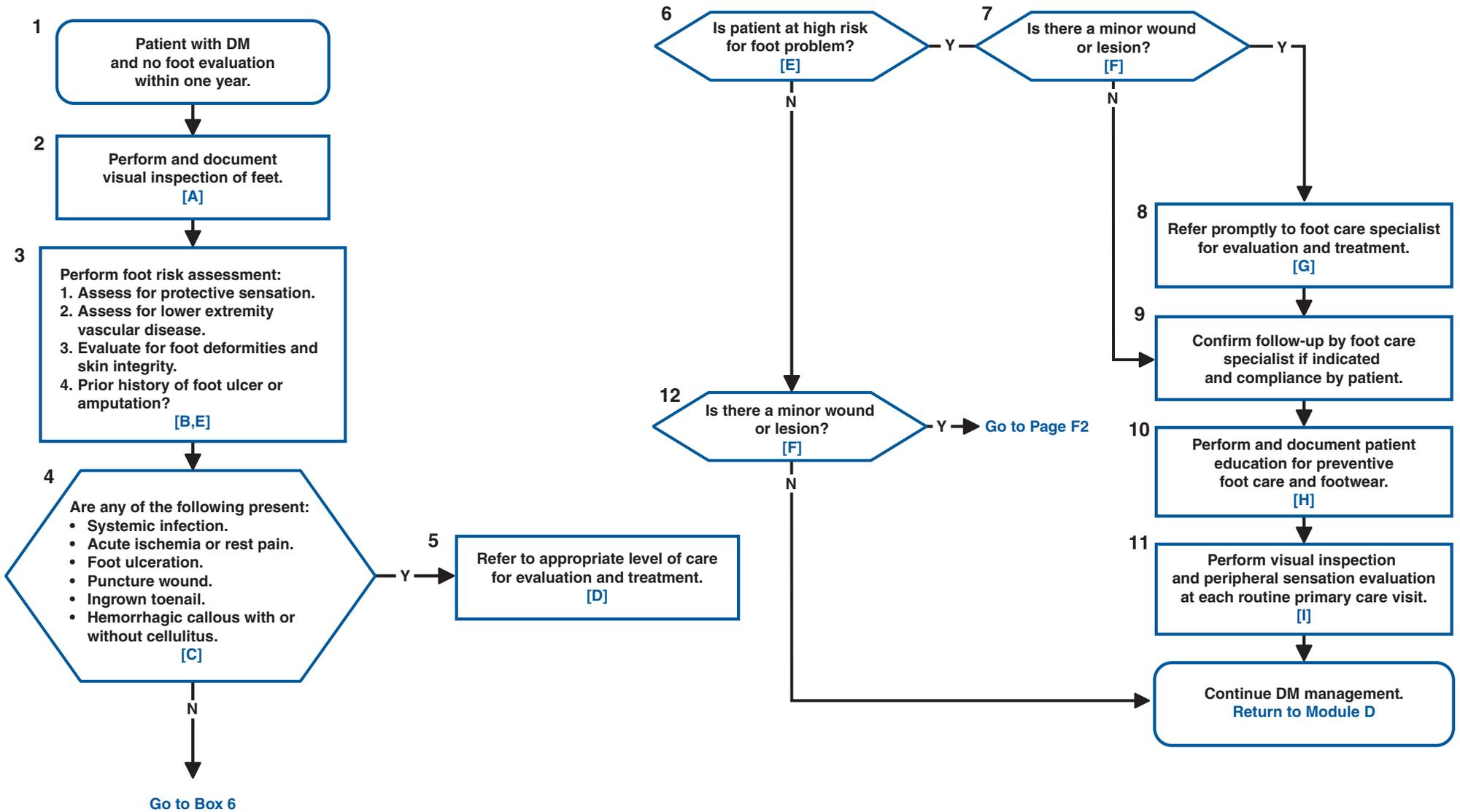


Label: Skin condition with **R**–Redness, **S**–Swelling, **W**–Warmth, **D**–Dryness, and/or **M**–Maceration

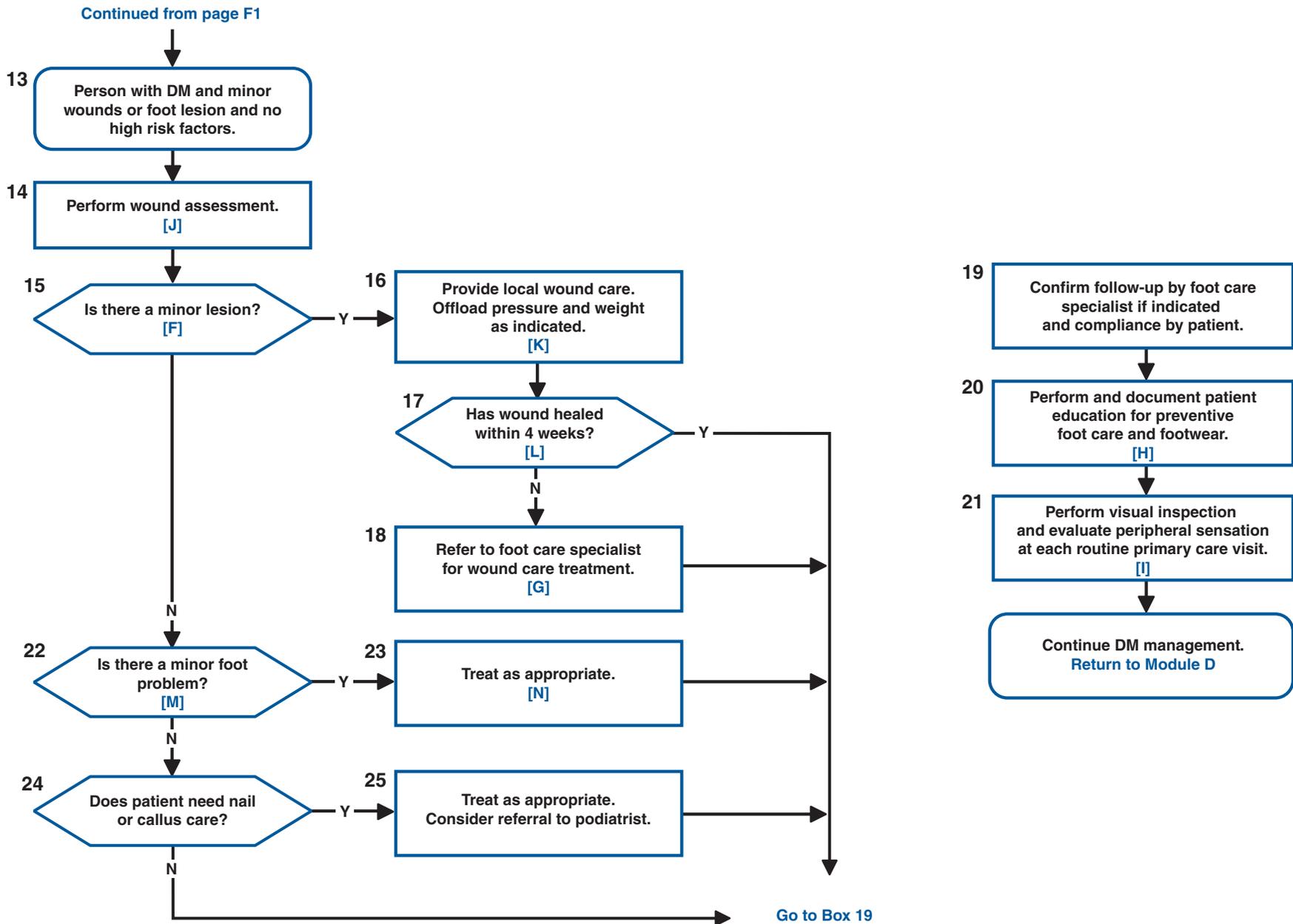
Risk Category:

- ___ 0 No loss of protective sensation.
- ___ 1 Loss of protective sensation with no weakness, deformity, callus, pre-ulcer or history of ulceration.
- ___ 2 Loss of protective sensation with weakness, deformity, pre-ulcer or callus but no history of ulceration.
- ___ 3 History of plantar ulceration.

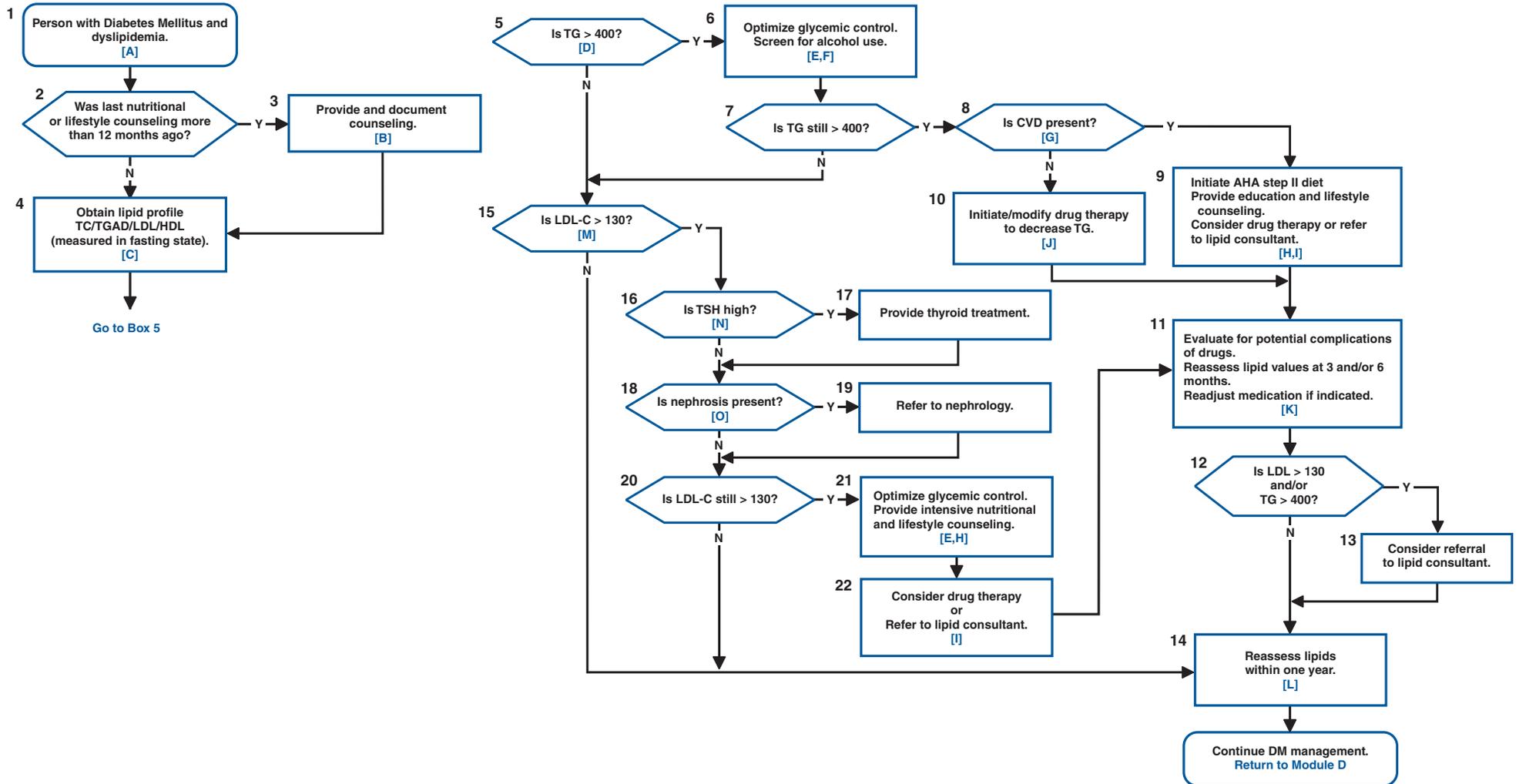
**Algorithm F1:
Management of Diabetes Mellitus in the Primary Care Setting
Module F - Foot Care**



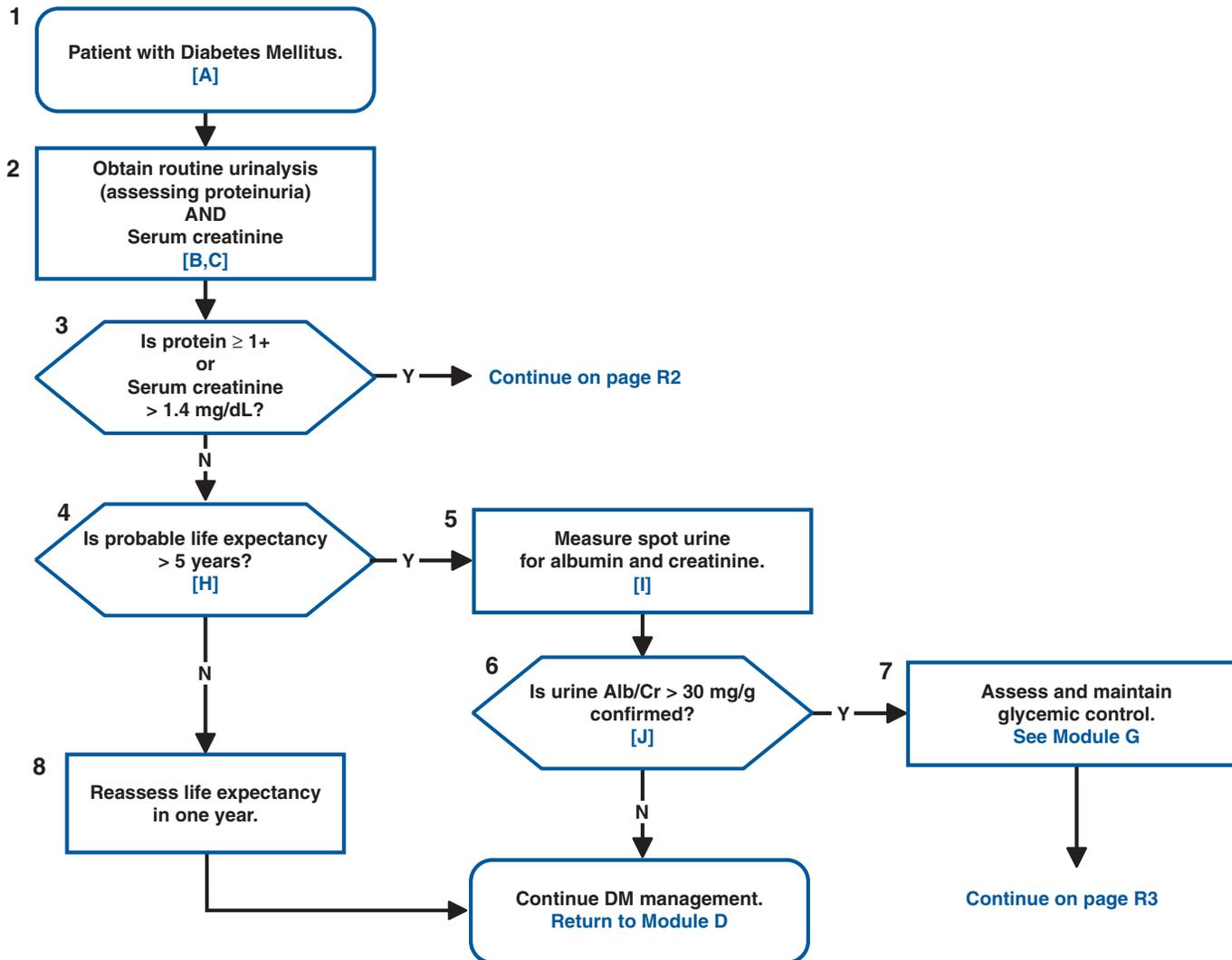
**Algorithm F2:
Management of Diabetes Mellitus in the Primary Care Setting
Module F - Foot Care**



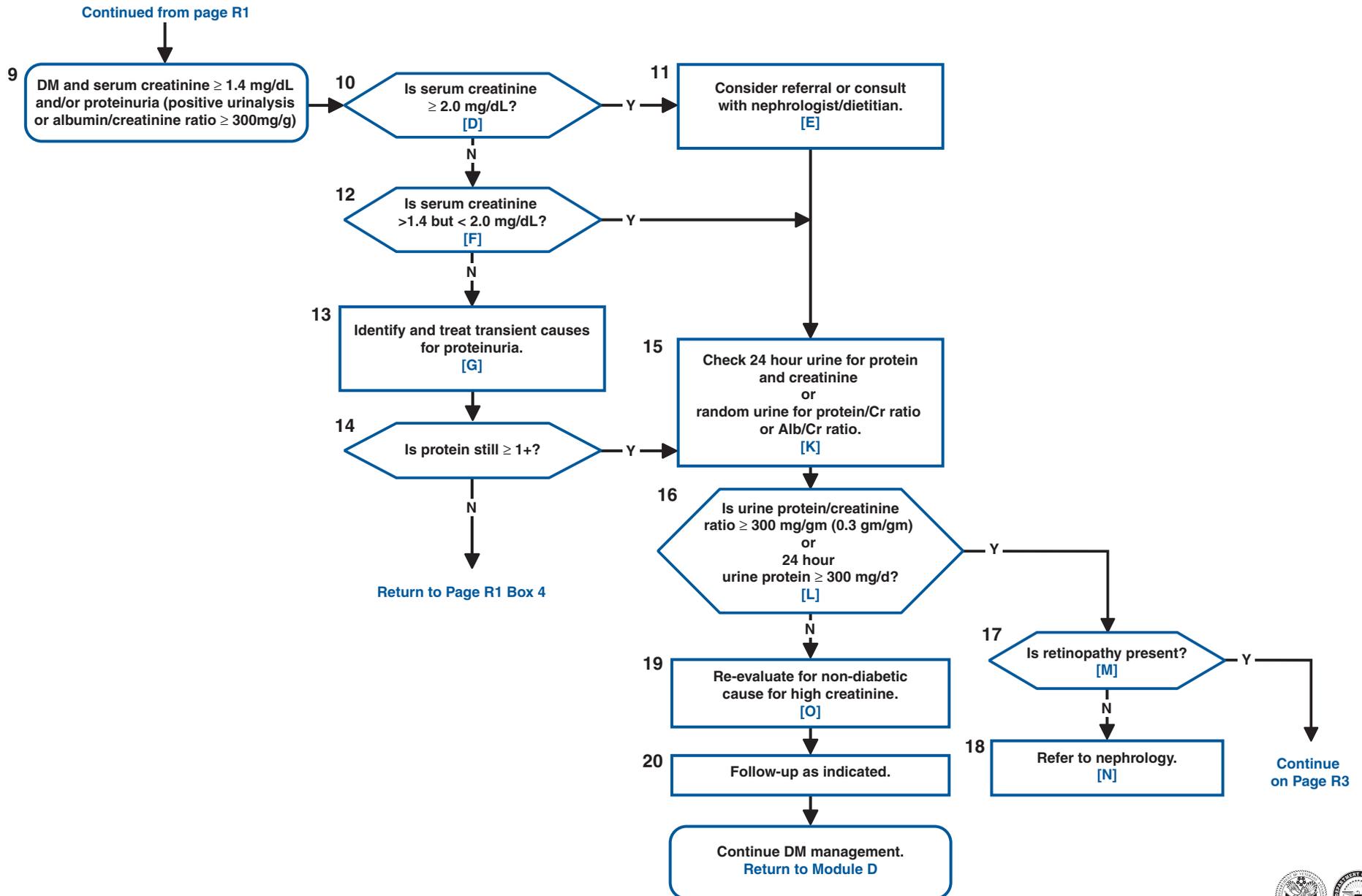
Algorithm L: Management of Diabetes Mellitus in the Primary Care Setting Module L - Lipid Control



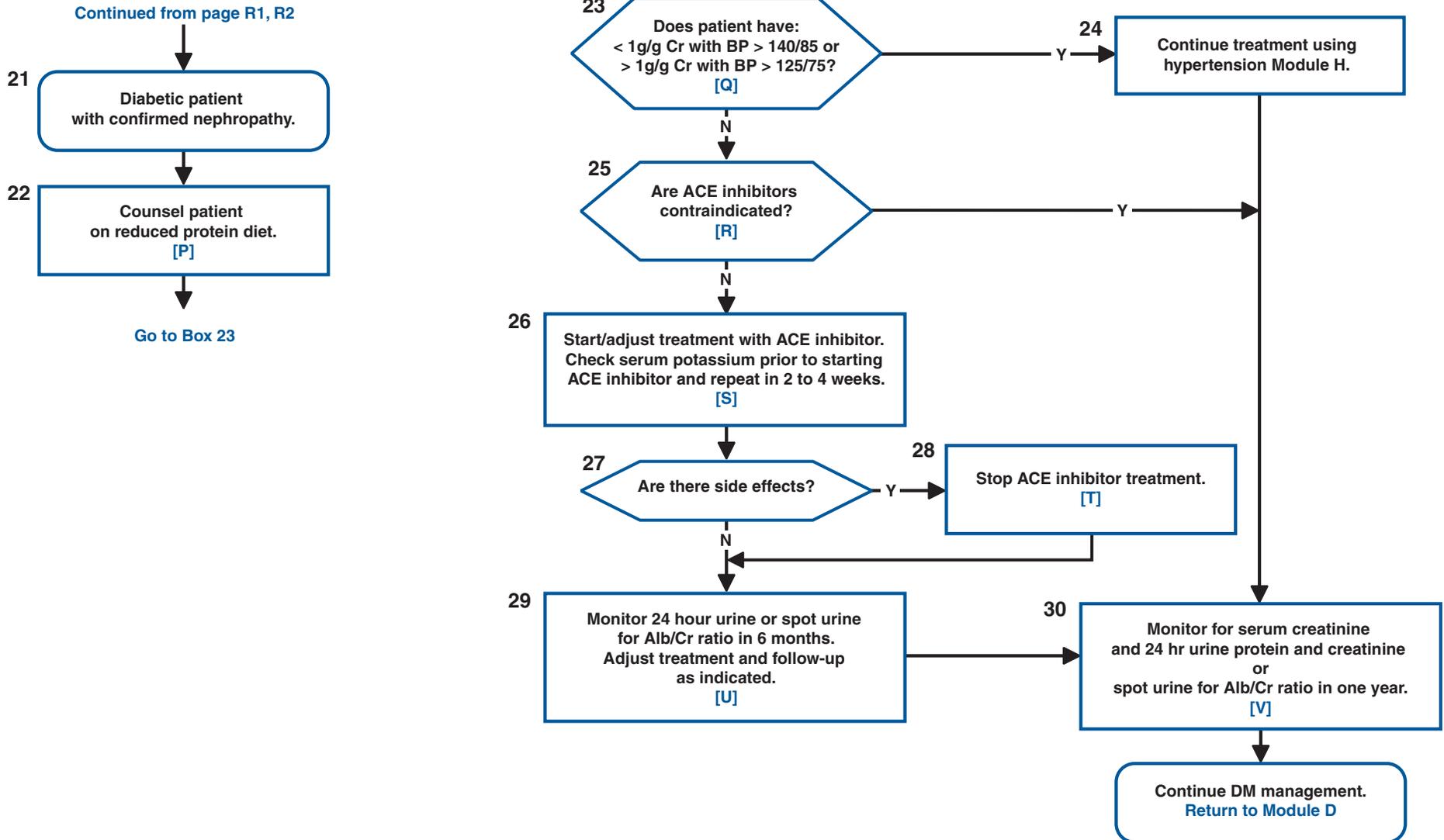
**Algorithm R1:
Management of Diabetes Mellitus in the Primary Care Setting
Module R - Renal Disease - Screening**



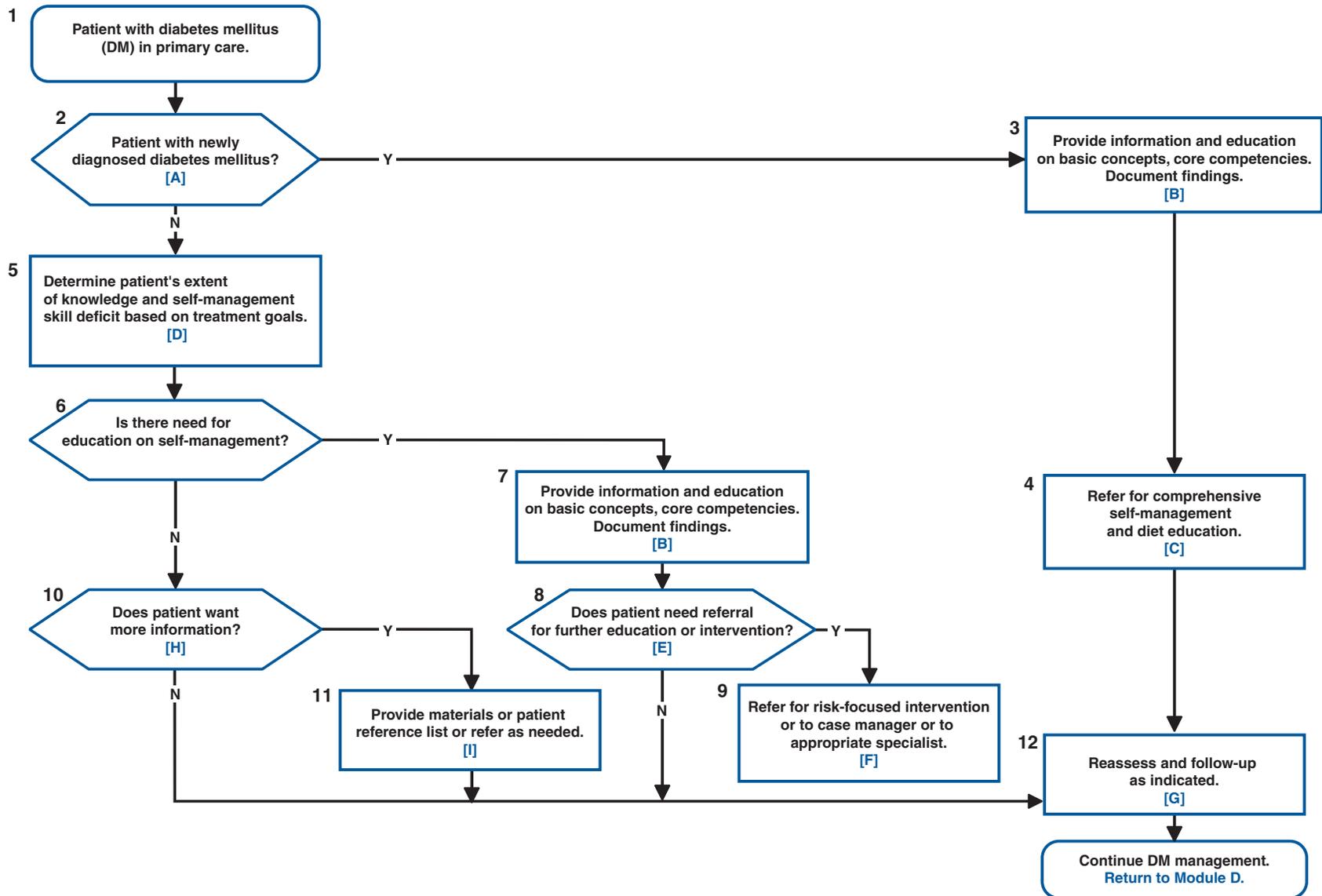
Algorithm R2: Management of Diabetes Mellitus in the Primary Care Setting Module R - Renal Disease - Proteinuria



**Algorithm R3:
Management of Diabetes Mellitus in the Primary Care Setting
Module R - Renal Disease - Treatment**



Algorithm M: Management of Diabetes Mellitus in the Primary Care Setting Module M - Education and Self-management



Diabetes Quality Improvement Project Metrics

Percentage of patients receiving having \geq one HbA1c test/year.

Percentage of patients with the highest risk: HbA1c $>$ 9.5 %.

Percentage of patients receiving dilated eye exam.

Percentage of patients receiving a lipid profile once in 2 years.

Percentage of patients with LDL $<$ 130 mg/dL.

Percentage of patients assessed for nephropathy.

Percentage of patients with BP $<$ 140/90 mm Hg.

Percentage of patients receiving a comprehensive foot exam annually.

DoD/VA Diabetes Mellitus Clinical Practice Guideline
PROVIDER REFERENCE CARD
Key Elements

Goals at a glance

- ▶ Establish diagnosis
- ▶ Maintain glycemic control
- ▶ Education and Self-Management
- ▶ BP < 140/85
- ▶ LDL < 130mg/dl, Triglycerides < 400mg/dl
- ▶ Annual dilated eye exam
- ▶ Annual foot exam
- ▶ Annual urine protein screen

Core Algorithm - Diabetes Mellitus (DM)

- ▶ Patient with DM, > 18 years, not pregnant
- ▶ Establish diagnosis
- ▶ Identify co-morbid conditions
- ▶ Assess physical, psychological and emotional stability
- ▶ Identify/update DM related problems
- ▶ Is it Type 1 or 2 (i.e., is insulin required for management)?
- ▶ Glycemic control (Module G)
- ▶ Review systems and set priorities for care
- ▶ Manage:
 - Patient Education
 - Eye care
 - Lipids
 - Hypertension
 - Foot care
 - Renal Disease

Glycemic Control (Module G)

- ▶ Assess glycemic control at each visit
- ▶ Set HbA1c target level based on risk & discussion with patient:

Major Co-morbidities or Advanced Physical Age	Microvascular Complications		
	Absent/Mild	Moderate	Advanced
Absent	7%	8%	9%
Present	8%	8%	8%
Marked	9%	9%	9%

- ▶ If high risk, consider for aggressive management or referral
- ▶ Initiate/adjust therapy as indicated for Type 1 or 2 DM

Self-Management & Education Module (Module M)

- ▶ Educate new patient with diabetes on basic concepts and core competencies
 - Management of acute complications
 - Medication education
 - Basic dietary guidelines
 - Sick day management
 - When to seek further treatment/medical advice
- ▶ Determine any deficit in self-management skill or knowledge, plan & give education, then reassess
- ▶ Refer for comprehensive education
- ▶ Refer for risk focused intervention as needed

Hypertension (Module H)

Goal < 140/85

- ▶ Assess blood pressure at each visit
- ▶ Initiate/adjust drug therapy and/or life style modification as appropriate to achieve BP average < 140/85
- ▶ Evaluate, treat, & refer for secondary causes as indicated.

Eye Care (Module E)

Annual eye exam except:

- ▶ Immediate referral if visual changes present
- ▶ Referral in 1 mo. if ocular risk factors present
- ▶ Referral in 3 months if no ocular risk factors present
- ▶ Every 2 years if low risk Type 2:
 - no ocular risk factors
 - not on insulin AND
 - HgA1c < 8 for over 1 year

Foot Care (Module F)

Perform foot risk assessment and visual exam at each visit to include:

- ▶ Risk factors for LE ulceration/amputation
 - History of foot ulcer
 - Prior amputation
 - Loss of protective sensation (monofilament testing)
 - Absent pedal pulses
 - Severe foot deformity
- ▶ Treat emergent conditions
- ▶ Refer high risk patients to foot care specialist as needed
- ▶ Educate patients on foot care

Lipid Control (Module L)

Goal - LDL < 130mg/dl, TG < 400mg/dl

- ▶ Obtain fasting lipid profile every one to two years; exclude secondary causes for high levels
- ▶ Initiate/adjust diet and/or medications as appropriate for lipid control for LDL >130mg/dl; triglycerides > 400mg/dl

Renal Disease (Module R)

Annual check for urine microalbumin* and serum creatinine

Table R - 2. Diagnosis of Proteinuria Diabetes Mellitus

<i>Condition</i>	<i>24-Hour Urine Collection</i>	<i>Alb/Cr</i>	<i>Timed Urine Collection</i>
Normal Albuminuria	≤ 30 mg/24h	< 30 mg/g creatinine	≤ 20 µg/min
Microalbuminuria	30 - 300 mg/24h	30 - 300 mg/g creatinine	20 - 200 µg/min
Macroalbuminuria	≥ 300 mg/24h	≥ 300 mg/g creatinine	≥ 200 µg/min

- ▶ Assess spot urine for microalbuminuria* by dipstick method
 - Microalbuminuria = 30 - 300 mg albumin/gm creatinine
 - Interventions for microalbuminuria = intensified glycemic control AND ACE inhibitor AND/OR BP control < 130/85 mg/Hg.
 - Albuminuria = > 300 mg albumin/gm creatinine = overt diabetic nephropathy
- ▶ Assess serum creatinine
 - Serum Creatinine > 1.4 mg/dl and < 2.0 mg/dl requires further evaluation
 - Serum Creatinine > 2.0 mg/dl, overt proteinuria, nephrotic syndrome, consider referral to nephrology

* *May do conventional urine dipstick first; if proteinuria is present, perform microalbumin test and do 24-hour urine for total protein.*

DoD/VA Diabetes Mellitus Clinical Practice Guideline
PROVIDER REFERENCE CARD
Checklist for Planned Visit for Diabetic Patients

History

1. Interval history.
2. Review home blood sugar testing regime and glucose measurements.
3. Signs and symptoms of hypo- and/or hyperglycemia.
4. Review current medications.
5. Review current status of self-care and lifestyle factors:
 - Diet
 - Exercise/physical activity
 - Foot and skin care
 - Smoking status
6. Review self-management goals including physical activity, sick day plan, etc.
7. Review of Systems for signs and symptoms of:
 - Retinopathy
 - Cardiovascular disease
 - Nephropathy
 - Neuropathy
 - Skin breakdown
8. Other _____.

Physical Exam:

1. Vital signs including BP, weight and BMI.
2. Respiratory exam.
3. Detailed cardiovascular exam including cardiac and peripheral vascular status.
4. Abdominal exam.
5. Lower extremities focusing on circulatory status, skin and nail integrity.

6. Dilated eye exam preferably performed by ophthalmologist/optometrist every one to two years as indicated.
7. Comprehensive foot examination annually.

Laboratory:

1. HbA1c annually or as indicated.
2. Lipid panel every one to two years as indicated.
3. Urine microalbumin screen annually.
4. Other _____.

Care Plan Considerations:

1. Further diagnostic testing and referrals as indicated.
2. Medication adjustments including daily aspirin.
3. Home care adjustments as indicated.
4. Refer for Diabetes Education as indicated.
5. Reinforce self-management goals and patient's personal role in the management of their own care.
6. Preventive measures as indicated. (e.g. annual dilated eye exam, routine foot care, flu/pneumonia vaccines, etc.)
7. Schedule next visit with laboratory tests as indicated.

Billing:

Documented correctly, a planned visit should meet billing criteria as a Level 4 (i.e. 99214) patient encounter.

Diabetes Mellitus ICD - 9 and CM Codes/CPT 2000

Diabetes Mellitus - Type 2 (Type II)	
W/O Complications	250.00
Uncontrolled	250.02
Hyperosmolar Coma	250.22
Hypoglycemia	250.82

Diabetes Mellitus - Type 1 (Type I)	
W/O Complications	250.01
Uncontrolled	250.03
Ketoacidosis	250.13
Hypoglycemia	250.83

Diabetes Mellitus Complications Type 1 and Type 2 (Type I and Type II)

<i>Neuropathy</i>	
Type 2 Diabetes Neuropathy	250.6x*
Peripheral Autonomic Neuropathy	[337.1]
Polyneuropathy	[337.20 - 337.29]

<i>Retinopathy</i>	
Type 2 Retinopathy	250.5x*
Background Diabetic Retinopathy	[362.01]
Proliferative Diabetic Retinopathy	[362.02]
Retinal Edema	[362.83]
Blindness	[369.00 - 369.9]

<i>Nephropathy</i>	
Type 2 Diabetic Nephropathy	250.4x* [583.81]

<i>Angiopathy, Peripheral</i>	
Type 2 Angiopathy, Peripheral	250.7x* [443.81]
Gangrene	[785.4]

Diabetes Mellitus Complications Type 1 and Type 2 (Type I and Type II)

<i>Ulcer</i>	
Type 2 Skin Ulcer	250.8x* [707.1x*]
Type 2 Lower Extremity	250.8x* [707.1x*]
Ulcer of Lower Limbs, Except Decubitus	707.1x
Ulcer of Lower Limb, Unspecified	707.10

Diabetes Mellitus Complications Type 1 and Type 2 (Type I and Type II)

<i>Ulcer (cont.)</i>	
Ulcer of Thigh	707.11
Ulcer of Calf	707.12
Ulcer of Ankle	707.13
Ulcer of Heel and Midfoot	707.14
Ulcer of Other Part of Foot (i.e. toes)	707.15
Ulcer of Other Part of Lower Limb	707.19
Chronic Ulcer of Other Specified Sites	707.8
Chronic Ulcer of Unspecified Site	707.9

Diabetes Mellitus - Type 1 and Type 2 (Type I and Type II)

Co-morbidities

<i>Cardiovascular</i>	
Unspecified Hypertension	401.9
Hypertensive Renal Disease	403.90
Coronary Artery Disease	414.01

<i>Hyperlipidemia</i>	
Hyperlipidemia	272.4
Hyperlipidemia Carbohydrate Induced	272.1
Hyperlipidemia Combined	272.4
Hyperlipidemia Endogenous	272.1
Hyperlipidemia Exogenous	272.3
Mixed	272.2

Diabetes Mellitus - Type 1 and Type 2 (Type I and Type II)

<i>Procedure Codes (not for ADS or KGADS form)</i>	
Diabetes Foot Exam*	V72.9_ _3
Comprehensive Eye Exam* (Eye Care Clinic)	V72.9_ _4
Group Education (Privileged Providers)	99078 with E/M codes 99212/215
(Non-privileged Providers)	99078 with E/M code 99211

NOTE: x* is 0 for Type 2 controlled or 2 for Type 2 uncontrolled; 1 for Type 1 controlled or 3 for Type 1 uncontrolled

NOTE: [] Required Explanatory Phrase

NOTE: * Pending DoD Uniform Biostatistical Utility Approval and System Update