Walk This Way: An Interprofessional Approach for Prevention and Management of Diabetic Foot Pathologies

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We have no financial relationships to disclose.

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Objectives

1. Discuss clinical practice guidelines for interprofessional prevention and management of diabetic foot pathologies.

2. Recognize best practices for interprofessional teams managing patients with diabetes.

3. Describe application of best practices to a patient case.

Goals of Interprofessional Collaboration

Reduce variation in practice

Prevent complications

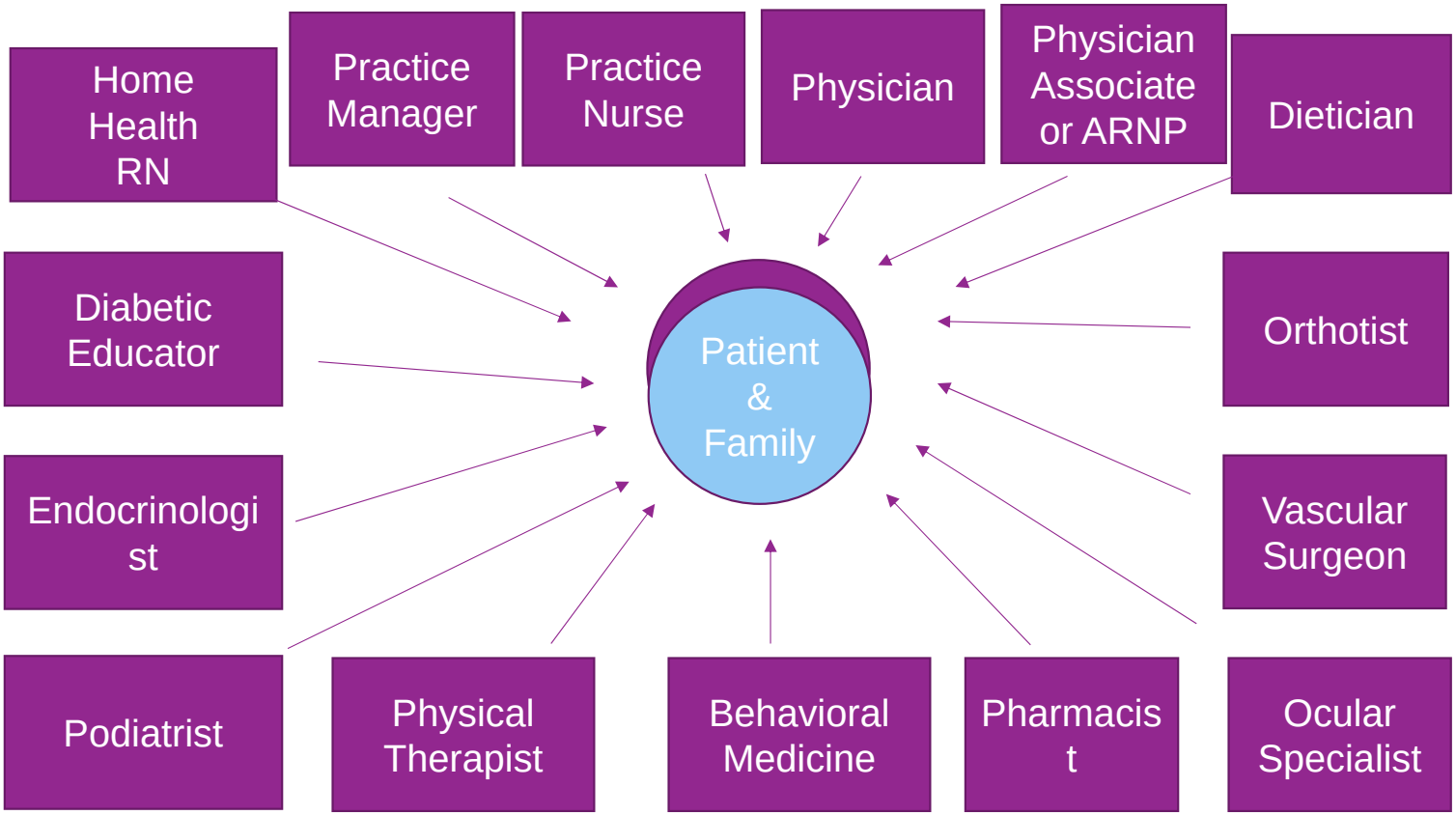
- Integumentary
- Amputation
- Falls

Reduce antibiotic prescription for foot infections

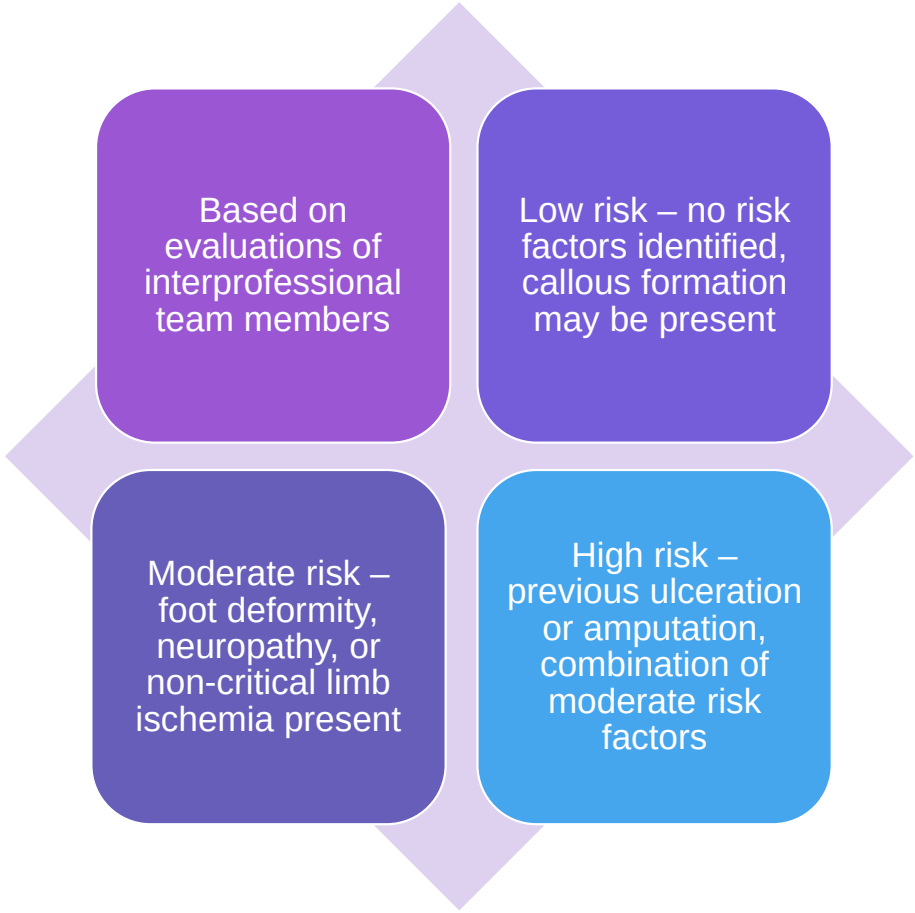
Interprofessional Care Pathways

Initiated at diagnosis of diabetes and at least annually thereafter
Initiated at identification of complication (including foot ulceration)
Initiated at hospitalization

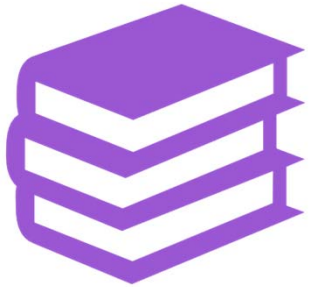
Interprofessional Team Members



Risk Stratification



Ongoing Team Communication



Reinforce consistent educational messages

Identify emergency triggers and communication structure

Case Report – Background Information

- 62-year-old male recently discharged from the hospital where he had been admitted with congestive heart failure, urinary retention and newly diagnosed with type 2 diabetes.
- His HbA1c value was high at 9.6%. He was started on metformin 1000mg bid and glargine insulin 24 units qd.
- Patient was discharged to follow up with his newly established primary care physician within 3 days and cardiology within 2 weeks.

Primary Care Evaluation and Management

FIRST VISIT:

Reviewed discharge summary, attention to medications and labs to make sure renal function is OK as patient on insulin and metformin, reviewed preventive care self-report from form patient filled out prior to coming to office

Asked patient to demonstrate how he checks his blood sugar using his new glucometer provided at hospital, inquired about status of lancets, strips, etc.

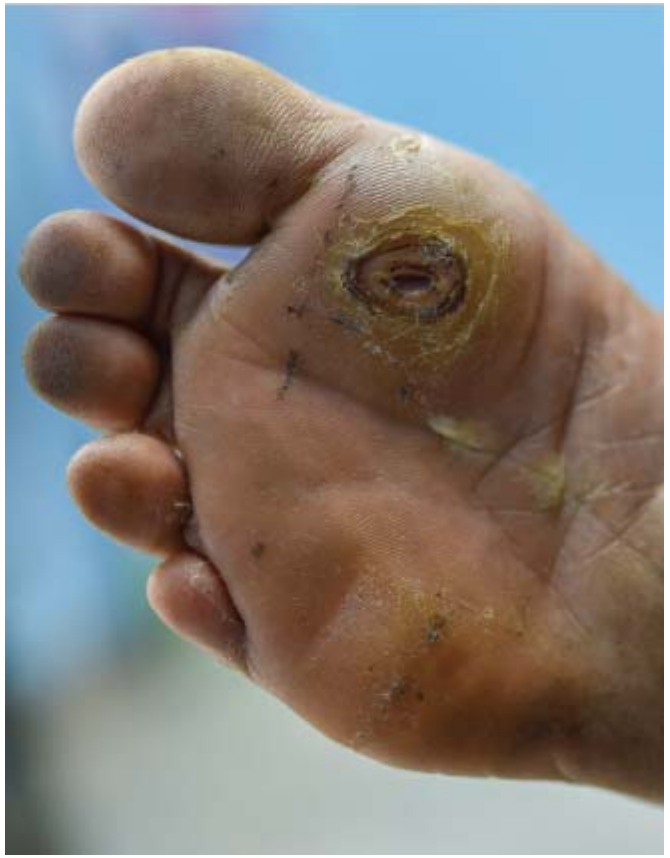
Thorough history with expanded social history to screen for support network and learning needs

Physical exam

Primary Care Evaluation and Management

Exam revealed

- Obese male
- 2+ LE edema to mid-shin
- decreased sensation bilateral feet with monofilament
- A wound on plantar surface right foot that patient had no idea existed



Primary Care Evaluation and Management

Patient agreed to the following consults: Diabetes educator, dietitian, ophthalmology, physical therapy and podiatry

Patient agreed to monthly visits with PCP until relationship is firmly built and acute problems are resolved.

Gave preview that we would explore diet and exercise options at next visit.

Sent orders for test strips and lancets to local pharmacy

Consult Placed, Provider-to-Provider Communication

PCP office staff arranged for him to see podiatry immediately after leaving primary care clinic for wound evaluation, so called to discuss with consultant.

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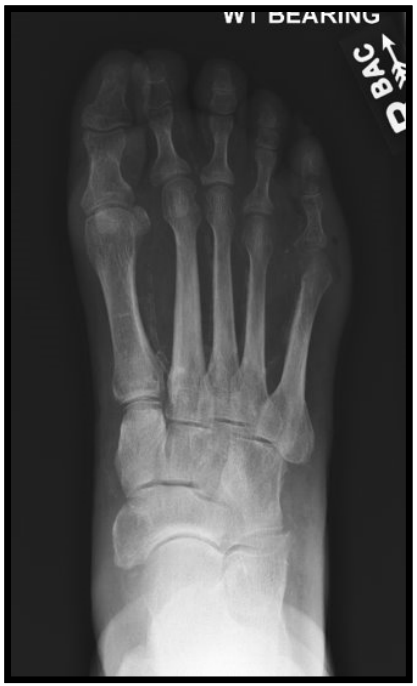
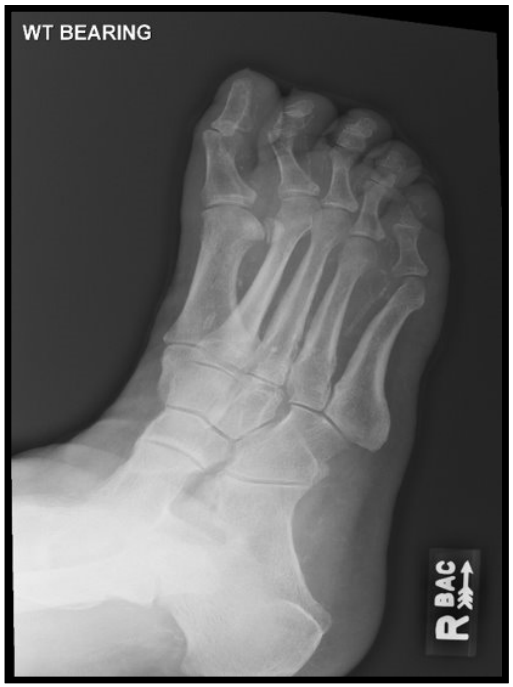
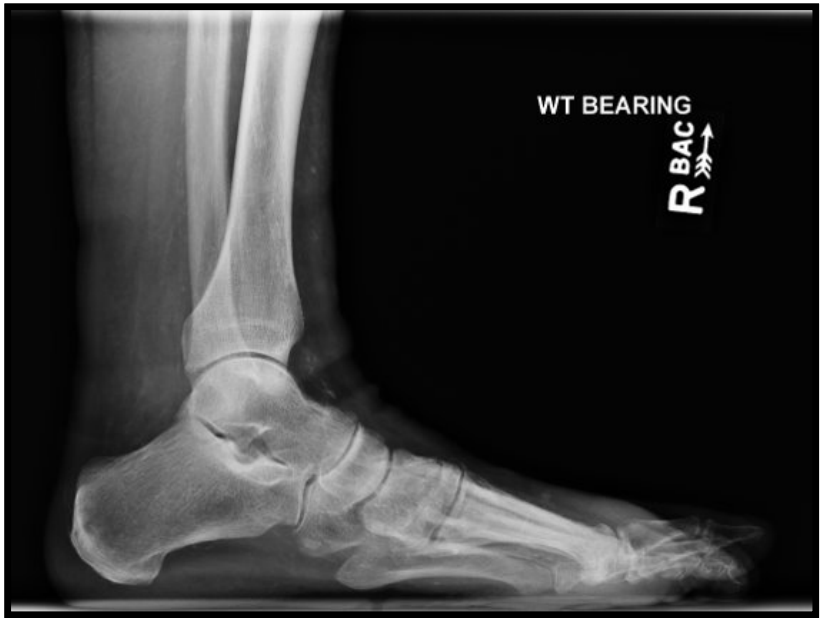
Podiatry Evaluation and Management

- Review of H&P per primary care provider
- Risk factors:
  - Prior history of ulcer
  - Peripheral neuropathy
  - Amputation
  - PAD
  - Poorly-controlled DM
- Obtain imaging
  - 3 view x-ray

Podiatry Evaluation and Management





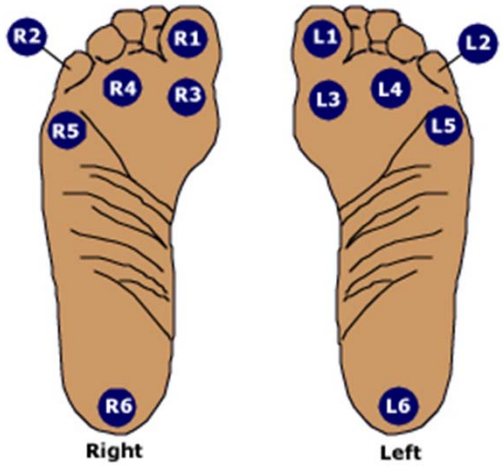


Podiatry Evaluation and Management

Problem-Focused Physical Exam

- **Vascular**:
  - Pedal pulses faintly palpable bilaterally. CFT is less than 5 secs to digits. Lack of pedal hair growth. 2+ edema bilateral leg. Temperature warm-to-cool from proximal-to-distal.

- **Neurologic**:
  - 5/10 to SWM exam bilaterally.



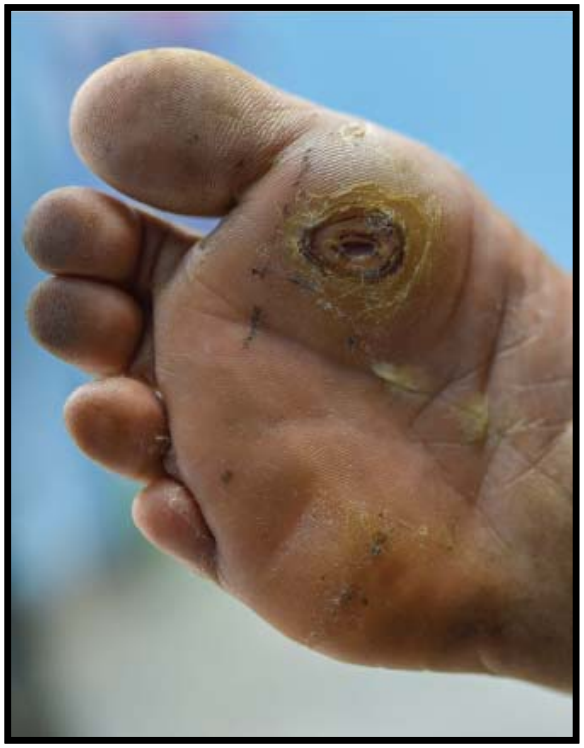
https://www.uptodate.com/contents/evaluation-of-the-diabetic-foot

Podiatry Evaluation and Management

Problem-Focused Physical Exam

- **Dermatologic**:
  - Full-thickness ulceration plantar right foot at first metatarsal head with granular base, peri-wound callus formation and no acute signs of infection noted.

- **Musculoskeletal**:
  - Plantarflexed first ray with mild hallux malleus and flexion contracture of lesser digits. Gastrocnemius equinus.



Podiatry Evaluation and Management

Assessment:

1. Neuropathic ulcer of the right foot
2. Plantarflexion of first ray with associated hallux malleus deformity
3. Gastrocnemius equinus

Podiatry Evaluation and Management

Plan:

- Sharp debridement of ulceration
- Offloading with pneumatic walking boot
- Dressing changes
- Order noninvasive vascular studies
- Patient education
- Follow-up within two weeks

Podiatry Evaluation and Management

- Stressed importance of keeping scheduled appointment for consultation with physical therapy and follow-up with PCP
- Weightbearing restrictions
  - WBAT in pneumatic walking boot

Physical Therapist Evaluation and Management

Physical therapy history with emphasis on:

- Activity level
- History of previous falls
- Presence of pain or sensation changes
- Perceived barriers and readiness for change

Physical therapy examination with emphasis on:

- Balance
- Sensation
- Strength
- Ambulation
- Aerobic capacity

History

Patient reports no regular exercise/activity but enjoys walking his dog daily approximately ¼ mile. Reports one fall which occurred 2 months ago when working in his yard. Has stumbled 2-3 times recently but caught himself. Occasionally experiences “pins and needles” in both feet. Perceives his lack of prior regular activity to be a barrier, but also is more concerned due to his recent hospitalization and ulcer on his foot.

Examination

Balance: Patient has fair balance with a Dynamic Gait Index score of 18 (predictive of fall risk). Has most difficulty with tasks with eyes closed.

Sensation: Decreased light touch sensation bilaterally in “sock” distribution. Decreased proprioception bilaterally.

Strength: Dorsiflexors 3/5, plantarflexors 4/5, quadriceps 3+/5, hamstrings 4/5, hip abductors 3/5, gluteus max 3+/5 (all findings bilateral)

Ambulation: Decreased heel strike bilaterally, slightly widened base of support

Aerobic capacity: Formal testing deferred due to presence of foot ulcer

Physical Therapy Plan of Care and Subsequent Visit

Until wound closure, patient continued with physical therapy bi-weekly to monitor and progress balance and strengthening program.

Dressing change and integument monitoring was part of bi-weekly PT appointment.

After wound closure occurred, physical therapist completed measures of aerobic capacity deferred from initial visit.

Patient was seen for 3 additional physical therapy visits to prescribe movement-based activities aimed at glycemic control.

Patient was connected to a community-based, supervised exercise class.

Challenges and Opportunities in Establishing Interprofessional Care Pathways

- Coordinating visits
- Financial barriers
- Patient volume

References

National Institute for Health and Care Excellence (NICE) (2015). *Diabetic foot problems: prevention and management.* Available at: www.nice.org.uk/guidance/ng19.

Harris-Hayes M, Schootman M, Schootman J, Hastings M. The role of physical therapists in fighting the type 2 diabetes epidemic. *Journal of Orthopaedic and Sports Physical Therapy.* 2020;50(1):6-15.

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Questions?