

Remote Temperature Monitoring with Podimetrics SmartMat™: The Reality of Provider Workflow Impact

A White Paper for Clinicians Managing High-Risk Patients with Diabetes

EXECUTIVE SUMMARY

A common misconception about the Podimetrics Remote Temperature Monitoring (RTM) System with the SmartMat device is that it will significantly burden provider workflow with excessive alerts and clinic visits. Evidence from both research studies and real-world implementation data demonstrates the opposite: when properly implemented with care management support, the Podimetrics Program actually improves clinic efficiency by ensuring the right patients are seen at the right time, while reducing the resource-intensive burden of treating advanced ulcers and complications.

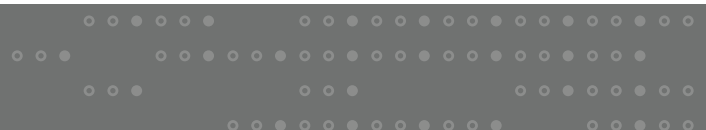
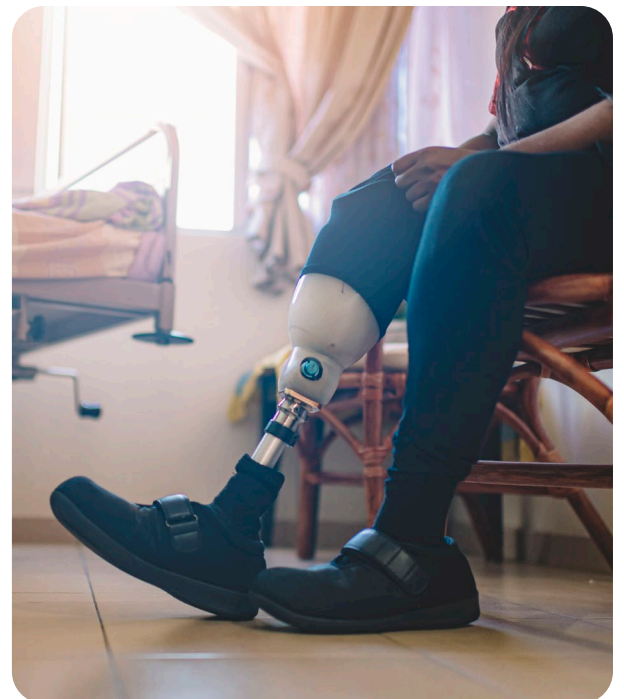
This white paper reviews data on alert frequency and workflow impact, distinguishing between research settings and real-world clinical practice, to provide clinicians with realistic expectations about implementing RTM in their practices.

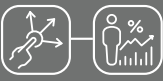
THE HIGH-RISK PATIENT ACCESS CHALLENGE

Patients with diabetes who have healed from a diabetic foot ulcer (DFU) face a 30-40% risk of recurrence within the first year after healing^{1,2}. These high-risk patients require regular specialist foot care, yet many healthcare systems struggle to provide adequate preventive access. Traditional reactive care models result in:

- Patients presenting with advanced, infected ulcers requiring weekly wound care visits
- High hospitalization rates (odds ratio 3.4 for DFU, 6.7 for diabetic foot infection)³
- Significant clinic burden from frequent follow-up of chronic wounds
- Limited appointment availability for patients needing preventive care or acute care

The fundamental question is not whether to see these high-risk patients, but when to see them. RTM enables proactive, efficient scheduling by identifying patients with subclinical inflammation before wounds develop.





Understanding Alert Rates: Research vs. Real-World Data

RESEARCH SETTING: Controlled Studies Without Intervention

Early accuracy studies of the SmartMat were designed to measure predictive performance without clinical intervention. In the Frykberg et al. multicenter trial, investigators were blinded to temperature data to assess the mat's ability to predict ulcers⁴. Using the standard 2.22°C threshold:

- **Alert frequency:** 3.1 notifications per patient-year
- **Detection rate:** 97% of developing plantar ulcers identified
- **Lead time:** Average 37 days before clinical presentation
- **Context:** No interventions were performed when inflammation was detected

Importantly, this study counted any inflammation detection as an “alert,” even when it represented preulcerative lesions, dorsal wounds, or Charcot episodes—all clinically meaningful findings that would warrant intervention.

REAL-WORLD IMPLEMENTATION: Managed Care with Staged Response

When the Podimetrics Program was implemented in real-world clinical practice with care management support, alert rates decreased substantially. Data from Kaiser Permanente Mid-Atlantic showed¹:

- **Inflammation calls:** 1.6 per patient-year (requiring podiatry outpatient visits)
- **Re-engagement calls:** 5.1 per patient-year (nurse calls to encourage adherence)
- **Clinical outcomes:** 52% reduction in hospitalizations (RRR=0.52; NNT=3.4)
- **Ulcer severity:** 91% reduction in moderate/severe ulcers (RRR=0.91; NNT=4.4)

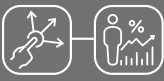
Veterans Health Administration (VHA) implementation across 13 medical centers demonstrated even lower alert rates with optimized care management protocols²:

- **Alert frequency:** 1.4 alerts per patient-year
- **Resolution without visit:** 68% of inflammation episodes resolved with telephone-guided offloading alone
- **Clinically meaningful findings:** 76% of patients requiring examination received preventive care (callus debridement, subungual hemorrhage treatment, early ulcer identification)

Cumulative Podimetrics data from a variety of health care systems shows the following trends⁵:

- **Current Patients Under Management (PUM):** Among the most recent cohort of over 12,500 current PUM, the number of escalations sent to providers was 1.7 per patient-year
- **Escalations over Time:** Since the Podimetrics Program has been commercially available, trends show the longer a patient is in the program, the fewer escalations are needed. This is likely attributed to overall better preventive care
 - 2.6 escalations per patient-year – 1st year from onboarding n=31,525
 - 1.9 escalations per patient-year – 2nd year from onboarding n=20,937
 - 1.6 escalations per patient-year – 3rd year from onboarding n=9,997

KEY INSIGHT: The difference between research (3.1 alerts/year) and real-world practice (1.4-1.7 alerts/year) reflects successful early intervention. When inflammation is detected and offloading initiated promptly, the inflammatory cascade is interrupted, preventing progression and avoiding subsequent alerts.



The Care Management Model: Minimizing Provider Burden

The Podimetrics Program includes care management support that filters alerts and manages patient engagement, significantly reducing provider workload:

STAGED RESPONSE PROTOCOL

STAGE 1: NURSE TRIAGE (NO PROVIDER TIME)

When inflammation is detected, a trained Podimetrics team member contacts the patient to:

- *Collect subjective history about recent activity, footwear changes, or symptoms*
- *Instruct offloading with target 50% reduction in step count*
- *Assess whether caregiver/spouse can inspect feet for visible changes*
- *Educate on signs of infection requiring urgent attention*

OUTCOME: 68% of inflammation episodes resolve with offloading alone, never requiring provider examination².

STAGE 2: PROVIDER EXAMINATION (ONLY WHEN INDICATED)

If patient reports concerning findings, provider examination is scheduled. In these cases:

- *76% reveal clinically meaningful preventive care opportunities*
- *Early-stage findings (callus, pre-ulcer) require brief interventions*
- *Patients are identified 5+ weeks before they would have self-presented*

ADHERENCE MANAGEMENT (PODIMETRICS DRIVEN)

Non-adherence triggers (4+ consecutive days without mat use) prompt outreach for re-engagement—no provider time required. These interactions also serve as health check-ins and reinforce preventive behaviors.

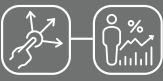
WORKFLOW IMPACT: PREVENTION VS. TREATMENT BURDEN

TRADITIONAL REACTIVE MODEL

CLINICAL SCENARIO	PROVIDER TIME INVESTMENT
Patient presents with infected ulcer	Initial evaluation + weekly wound care visits (12+ weeks)
Hospitalization for severe infection	Daily rounding + discharge coordination
Patient with chronic non-healing wound	Ongoing weekly visits for months, expensive wound care product costs

RTM PROACTIVE MODEL

CLINICAL SCENARIO	PROVIDER TIME INVESTMENT
Inflammation detected, resolves with offloading	Podimetrics-managed, zero provider time
Examination reveals preulcerative callus	Single visit for debridement, inflammation resolves
Early superficial ulcer identified	Fewer visits vs. 12+ for advanced wound healing



NET EFFECT: Replacing resource-intensive chronic wound management with brief preventive interventions dramatically reduces overall provider burden while improving patient access.

These outcomes translate directly to reduced clinic burden: fewer patients requiring weekly wound care, fewer urgent visits for infections, and fewer hospitalizations requiring provider coordination.

REALISTIC WORKFLOW EXPECTATIONS

For a provider managing 100 high-risk patients on the Podimetrics Program⁵:

- *Podimetrics-managed inflammation alerts: 140-160 per year (68% resolve without provider involvement)*
- *Provider examinations required: ~45-50 per year*
- *Clinically meaningful findings: 34-38 examinations (76% yield preventive care)*
- *Prevented complex wounds: Estimated 40-45 ulcers prevented (based on 40% baseline recurrence rate and 52-71% reduction)*

TIME SAVED: Each prevented moderate/severe ulcer eliminates 12+ weeks of weekly wound care visits. Preventing 40+ ulcers translates to hundreds of wound care visits avoided annually.

Addressing Common Concerns

“WON’T THIS OVERWHELM MY SCHEDULE WITH UNNECESSARY VISITS?”

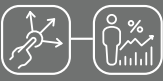
No. The care management model filters alerts through triage. Two-thirds of inflammation episodes never require provider examination. The remaining one-third predominantly reveal early-stage, easily treatable findings that prevent progression to time-consuming chronic wounds.

“WHAT ABOUT FALSE POSITIVES?”

In research settings, “false positives” often represented clinically relevant inflammation from calluses, dorsal wounds, or Charcot episodes. In real-world practice with intervention, many “alerts” are true subclinical inflammation that resolves with offloading before ulceration. The 1.4-1.6 alerts per patient-year in managed care represents optimized clinical sensitivity.

“MY PATIENTS WON’T USE THE MAT CONSISTENTLY.”

Published adherence data shows 74% of patients remain engaged at one year, with 86% averaging 3+ uses per week.⁵ This exceeds adherence to therapeutic footwear (as low as 15%).² The automated wireless connectivity, simple 20-second use, and care management support drive high sustained engagement.



Conclusion: Right Patient, Right Time, Right Care

The Podimetrics Program addresses a fundamental challenge in diabetic foot care: ensuring high-risk patients have timely access to preventive specialist care without overwhelming clinic resources. Rather than increasing provider burden, the program:

- *Enables efficient, data-driven scheduling of preventive visits*
- *Reduces time-intensive chronic wound management*
- *Decreases hospitalizations and urgent/after-hours demands*
- *Improves patient outcomes while optimizing clinic workflow*

Real-world implementation data demonstrates that with appropriate care management support, alert rates are modest (1.4-1.7 per patient-year), two-thirds of alerts resolve without provider examination, and the net effect is reduced clinical burden through prevention of complex, resource-intensive complications.

For providers managing high-risk diabetic foot patients, the question is not whether these patients need to be seen, but when they should be seen. RTM ensures they are seen at the right time when brief preventive interventions can avoid weeks of chronic wound care.



References

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4. Frykberg RG, Gordon IL, Reyzelman AM, et al. Feasibility and efficacy of a smart mat technology to predict development of diabetic plantar ulcers. *Diabetes Care*. 2017;40:1-8. <https://doi.org/10.2337/dc16-2294>.
5. Podimetrics, data on file