

Lymphedema Program Growth through Standardization: *Going Back to the Future*

The Hartford Treatment Model
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Presentation Overview:

1. A Journey through Lymphedema Protocols
2. The Case for an Intensive & Comprehensive Protocol
3. Program Benefits & Growth through Standardization

STAGE 1

A Journey through Lymphedema Protocols

1997-2004
Outpatient Rehab Hospital



2004-2015
Private Practice:
Therapeia
Lymphedema Center



2016-present
Hartford Healthcare



1998-2004: Outpatient Rehab Hospital

Treatment Protocol

- ▶ Twice a week CDT treatment
- ▶ Patient issued 2 sets of bandages at no charge
- ▶ Used cotton or roll on foam as base
- ▶ Patient given list of DME and pharmacies to acquire compression garments after discharge
- ▶ Patient directed to call for follow up as needed

Outpatient Rehab Hospital

Protocol Deficiencies:

- ▶ Pt self bandages on off days with poor degree of success
- ▶ Pt refilled with edema before compression garment was acquired after D/C
- ▶ Pt sometimes did not acquire garment, seen as “optional”
- ▶ Pt had difficulty with donning, doffing and caring for garments due to lack of training

Outpatient Rehab Hospital

Protocol Deficiencies (continued):

- ▶ Pt often did not see value of bandages and would not return with needed supplies to treatment sessions
- ▶ Program review by CFO found low profitability with bandage expense and intensity of treatment
- ▶ Protocol most effective for stage 1 lymphedema

Outpatient Rehab Hospital

Impetus for Change:

- ▶ Lymphedema certification class
- ▶ LANA certification
- ▶ Hospital's Barrier to Change
- ▶ Crossroads in career
- ▶ Personal decision to try and meet the need for comprehensive lymphedema treatment in my local community
- ▶ Created Therapeia Lymphedema Center



Dr. Janet Freedman

Best Practice Role Models



Dr. Ethel Foldi



Jan Weiss, PT, DHS, CLT-LANA



Guenter Klose & Klose Faculty

2004-2015 Therapeia Lymphedema Center

Treatment Protocol Core Values:

- ▶ 5 day a week treatment protocol
- ▶ Comprehensive bandaging, including:
 - ❑ Custom-fit foam panels
 - ❑ Bandaged fingers/toes
 - ❑ Full foot bandage with cast boot

Therapeia Lymphedema Center

Treatment Protocol Core Values: (continued)

- ▶ Provide compression garments to patients as part of standard CDT
- ▶ Regularly scheduled patient follow ups to monitor progress and replace garments
- ▶ Focus on environment (music, aromatherapy, non-medical décor) and client satisfaction

Therapeia
LYMPHEDEMA
CENTER







Therapeia Lymphedema Center

Successes:

- ▶ 1000+ patients
- ▶ Excellent reputation in the community
- ▶ Loyal support of physicians & patients

Barriers:

- ▶ Reimbursement rates
- ▶ Insurance contracts
- ▶ Attracting therapists to meet demand

Therapeia Lymphedema Center

New Opportunities:

- ▶ Find a larger, like-minded partner.
 - Hartford Healthcare
 - Core Values: Integrity, Excellence, Caring, Safety
- ▶ Provide quality care to more patients
- ▶ Effect change on a broader scale



2016-Present: Hartford Healthcare (HHCRN)

“Find someone who is an expert in their field and who has generated respect in the community, and follow their lead.”

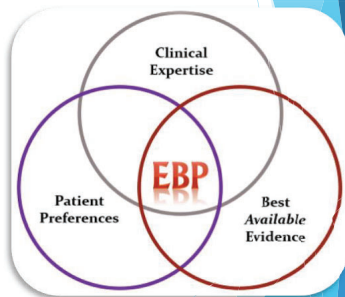


Eric Smullen PT, OCS
Executive Director
Hartford Healthcare
Rehabilitation Network

Hartford Healthcare

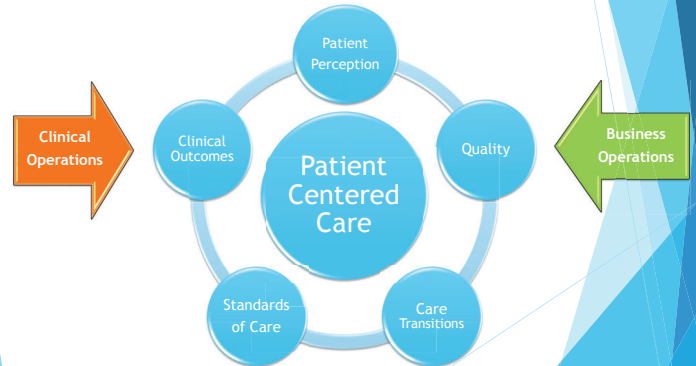
Clinical Services Vision

“To define, implement and maintain a culture of evidence based best practice that ensures competency and quality care to optimize patient experience and functional outcomes.”



Hartford Healthcare

Patient Centric Clinical Structure



Hartford Healthcare:

Program Standardization Mission

“Standardize and grow the lymphedema program across the state of Connecticut, following best practice.”



Hartford Healthcare

Identifying HHCRN Previous Treatment Protocol

- ▶ Methods of Assessment:
 - Staff surveys
 - Site visits
- ▶ Baseline Areas of Assessment:
 - Treatment Protocol
 - Level of certification and educational background
 - Current trends in lymphedema referrals (UE vs LE, percent of schedule dedicated to pt with LE)

Hartford Healthcare

State of the Union: 2016

- ▶ 5 therapists not certified with 135hr training
- ▶ Over 50% providing CDT 2-3x/week during phase I
- ▶ 70% treating <2-3 lymphedema patients per week
- ▶ 50% were treating UE only
- ▶ 30% not bandaging as a regular part of treatment protocol
- ▶ 60% were using cotton & soft roll foam for the base layer of bandaging
- ▶ 60% were not measuring and fitting compression garments
- ▶ 70% were recommending daytime compression only
- ▶ No formal f/u procedure at any sites

Hartford Healthcare

Creating Change: New Treatment Protocol

- ▶ Replicate Therapeia/“Best Practice” Protocol
- ▶ “Four Pillars of Standardization”

Lymphedema: Four Pillars of Standardization



1. Certified Lymphedema Therapists
2. 5-Day per Week CDT Protocol
3. Compression Garments
4. Follow Up Evaluations

Take Home Message...

STAGE 1: A Journey through Lymphedema Protocols

Two Lymphedema Protocols:

Two day a week CDT, simplified bandaging, no garment support from therapist, no follow up
VS.

Five day a week CDT, bandage with customized grey foam, garment fit and training, regular follow ups

STAGE 2

The Case for an Intensive & Comprehensive Protocol

5 Day a Week CDT: Literature

5 Day a Week CDT

What are we doing?

- ▶ Surveyed 598 therapist from NLN conference attendees list
- ▶ 107 responded
- ▶ Most common reported dosing of Intensive Phase CDT:
 - ❑ 3 days per week (35%)
 - ❑ 5 days per week (26%)
 - ❑ 2 days per week (12%)

Reference:

Polo, K., Rundquist, P., Krumdick, N., Gamble, G. (2017). National survey of lymphedema therapists' dosing of complete decongestive therapy in breast cancer survivors with lymphedema. *Internet Journal of Allied Health Sciences and Practice*. Dec; 16(1): 5.

5 Day a Week CDT

Why Bandage Daily?

- ▶ Compression bandage profiles change over wear time due to edema reduction
 - ❑ 50% pressure drop in 2 hours
 - ❑ 2/3 loss after 24 hours
- ▶ Chronic edema/lymphedema requires constant compression; if discontinued, edema will recur rapidly
- ▶ The greatest edema reduction occurs in the first week of treatment



Reference:

Compression therapy: a position document on compression bandaging. *International Lymphoedema Framework: Best Practice for the Management of Lymphoedema, 2nd Edition*. 2012: 5. <https://www.lympho.org/wp-content/uploads/2016/03/Compression-bandaging-final.pdf>.

5 Day a Week CDT

Why bandage Daily?

- ▶ 220 Women with breast cancer related LE
- ▶ Treated 5 days a week for 2 weeks with comprehensive CDT
- ▶ Greatest edema reduction occurs in first week (50% edema reduction)
- ▶ Results stabilized in the second week with a slight decrease

Reference:

Leduc, O., Leduc, A., Bourgeois, P., & Belgrado, J. (1998). The physical treatment of upper limb edema. *Cancer*, 83(S12B), 2835-2839.

5 Day a Week CDT

Why bandage Daily?

- ▶ 83 patients with stage 2 lymphedema
- ▶ Daily comprehensive CDT
- ▶ Greatest edema reductions occur in the first few days of CDT
 - UE:54% reduction day 2 □ LE:56% reduction day 2
 - 8% reduction day 3 □ 11% day 3
 - 1-3% reduction days 3-6 □ <1-1% days 4-6

Reference:

Yamamoto, T., Todo, Y., Kaneuchi, M., Watanabe, K., & Yamamoto, R. (2008). Study of edema reduction patterns during the treatment phase of complex decongestive physiotherapy for extremity lymphedema. *Lymphology*. Jun; 41(2):80-6.

5 Day a Week CDT

Why bandage Daily?

“Optimally, CDT is performed daily (5 days/week) until the reduction of fluid volume has reached a plateau, which can take 3 to 8 weeks. Some patients may have good results from CDT with modifications of the frequency and duration of treatment. CDT frequency and duration should be individualized to produce the greatest reduction of swelling and improvement of skin condition in the shortest period of time.”

Reference:

NLN Medical Advisory Committee. (2011). The diagnosis and treatment of lymphedema. *National Lymphedema Network: Position Statement of the National Lymphedema Network*, 5.

5 Day a Week CDT

Why bandage Daily?

“In the literature concerning other chronic conditions, condition-related factors that decrease adherence include previous treatment failures, delay of beneficial effects.”

“Duration of treatment also plays a role; treatments that extend farther in time are less likely to foster adherence.”

Reference:

Palmer, S. C. (2006). Barriers and facilitators to successful lymphedema therapy: the role of adherence. *NLN LymphLink*, 18(4).

5 Day a Week CDT: Professional Experience

5 Day a Week CDT

Comparison of 2 Treatment Models

Total visits; 11 years of data:

Therapeia Model

5 days a week for 2-3 weeks, reducing to 3 times a week until arrival of garments

Total: 13 visits

HHCRN Model

2 days a week for 8-12 weeks

Total: 17 visits

5 Day a Week CDT

Daily CDT Reduces Risk & Increases Effectiveness

- ▶ Reduces chance of skin irritation, rash, and skin breakdown
- ▶ Reduces chance for bandages to cause harm from slippage and binding
- ▶ Does not allow refill of edema between therapy appointment



Quality Supplies & Comprehensive Bandaging

Provides More Efficient Results

- ▶ Using custom cut ½' foam for LE, ¼" custom cut panels for UE
- ▶ Bandaging toes and feet
- ▶ Using a cast boot to accommodate appropriate bandaging on foot
- ▶ Addressing proximal edema

Quality Supplies & Comprehensive Bandaging

Custom Cut Foam

- ▶ Reduces slippage over 24 hour period between sessions.
- ▶ Protects skin from injury
- ▶ Evens out difficult-to-bandage areas
- ▶ Breaks down fibrosis

Quality Supplies & Comprehensive Bandaging

The Importance of Bandaging Toes and Feet

- ▶ Law of Laplace: $Pressure = Tension / Radius$
- ▶ Protect delicate foot and hand with foam
- ▶ Gradient bandage system
- ▶ Dr. Foldi, "American's often ignore the toes, leading to chronic infections from skin alterations and breakdown"

Compression Garment Chaos

Circular Knit: High resting pressure, low working pressure

Velcro:

- Low resting pressure
- Medium-high working pressure

Elastic garment are reset in size and pressure through washing

Flat Knit: Lower resting pressures, higher working pressure



Donning compression without rubber gloves or training is almost guaranteed failure

Ready-to-wear garment sizes based on the volume of a cone

The Essential Compression Garment

- ▶ Therapist best knows the limb after Intensive Phase of CDT to select appropriate style and pressure grade
- ▶ Therapist can provide ADL assessment to select best garment for home program
- ▶ Therapist can provide best ADL training and introduce adaptive equipment as needed
- ▶ Therapist can support replacement of garments at follow up



Follow-Up Appointments

- ▶ 6 months for new patients or patients with unstable lymphedema
- ▶ 1 year for patients with effective compression garments and stable lymphedema
- ▶ Epic “Follow Up” function in patient discharge (or postcard reminders)

Follow-Up Appointments

Stages of Grief: Coming to Terms with the Diagnosis of Lymphedema

- ▶ Anger → Denial → Bargaining → Depression → Acceptance → Advocacy
- ▶ Many patients do not reach acceptance of their disease with the first exposure to CDT



Creating a Therapeutic Environment

- ▶ Consider: artwork, optimizing environmental light, incorporating musical sound.
- ▶ “Many of the design interventions convey positive distractions for patients and staff, in terms of views of pleasant outside vistas, soothing sound, artwork and music.”
- ▶ Conclusions: Well-designed physical settings play an important role in the healing process of patients in health care facilities.

Reference:

Iyendo, T., Uwajeh, P., Ikenna, E. (2016). The therapeutic impacts of environmental design interventions on wellness in clinical settings: A narrative review. *Complementary Therapies in Clinical Practice*.

Take Home Message...

STAGE 2: The Case for Intensive & Comprehensive Protocol

- ▶ 5 day per week phase 1 CDT promotes safe, effective bandaging for the most efficient and dramatic results
- ▶ Using custom cut grey foam can improve efficiency of results
- ▶ Therapist commitment to garment selection and training is essential to the long term patient success

Take Home Message...

STAGE 2: The Case for Intensive & Comprehensive Protocol (continued)

- ▶ Formalized follow up program catches set backs earlier, and provides reinforcement of phase 2 CDT
- ▶ Creating a therapeutic environment plays an important role in best care

STAGE 3

Program Benefits & Growth through Standardization

Benefits & Growth

Program Benefits

Standardization Leads to Increased Effectiveness:

“Results versus life-changing results”

Goal:

- ▶ Complete CDT in the most effective way possible
- ▶ Produce best outcomes
- ▶ Promote patient compliance

Program Benefits

Increased Efficiency:

- ▶ Patient compliance increases with shorter duration
- ▶ Reduces cancellation rate
 - Dr. Freedman Stamford Hospital reviews cancellation rate for lymphedema
 - 8-12% normal in OP rehab
 - 2-3% lymphedema

Program Benefits

Increased Efficiency (continued):

- ▶ Patients complete treatment in average of 13 visits
- ▶ Less costly to insurance benefits, job, and family with less total visits
- ▶ Follow-up visits reduce risk of edema exacerbation

Program Benefits

Imbedding a Lymphedema Clinician Enables Non-traditional Referrals & Collaboration

- ▶ Educates fellow clinicians about what lymphedema clinicians can do
- ▶ Improves the outcomes of other specialties
 - TKR can get surgery that was denied due to edema
 - Reduce edema in recovery of TKR to produce more comfortable and efficient orthopedic outcome

Program Benefits

Improves the outcomes of other specialties (continued):

- Improve wound healing at wound centers as we assist with edema and compression garments
- Improve functional return of patients with neurological deficits by reducing dependent edema
- Support ER admissions for cellulitis with identification and treatment of underlying lymphedema

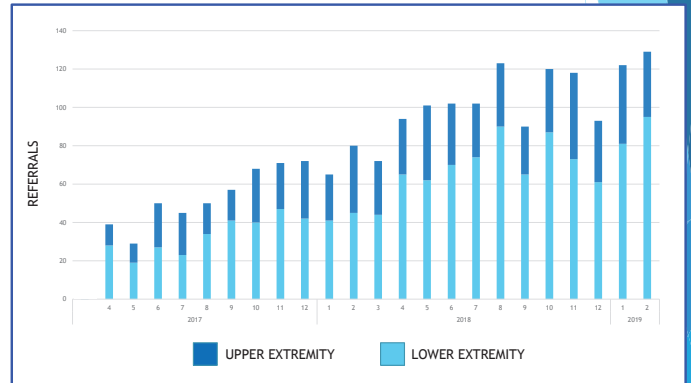
Program Benefits

Customer Loyalty through Quality Care

- ▶ Promoting an Integrative Healthcare System
- ▶ Customers associate excellence with entire system
- ▶ Return to treat other conditions
- ▶ Recommend to other family members and friends

Program Growth

Referral Growth from 2017-19



Program Growth

HHCRN Lymphedema Program Growth:

Total Referral Growth

- ▶ 230% from 2017-2019:
 - 39 to 129 referrals (Apr 2017 to Feb 2019)
 - More than triple the number of initial referrals
- ▶ LE 239% growth
- ▶ UE 209% growth

Program Growth

HHCRN Lymphedema Program Growth:

- ▶ All CLTs treating both UE and LE
- ▶ Increased collaboration with non-traditional referral sources:
 - Primary Care Physicians
 - Cardiology
 - Wound center
 - Vascular
 - Orthopedics
 - Nuro
 - Podiatry
 - ER (cellulitis incidents)

Program Growth

In three years...

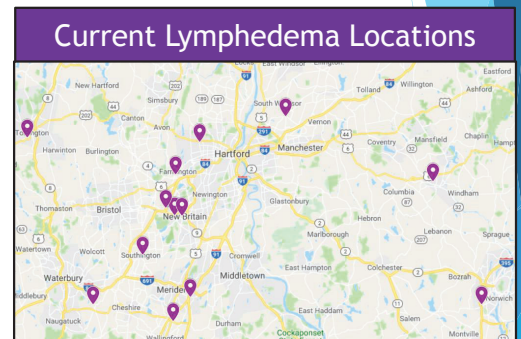
- ▶ 12 to 21 CLT's
- ▶ 5 to 12 LANA Certified



Program Growth

In three years...

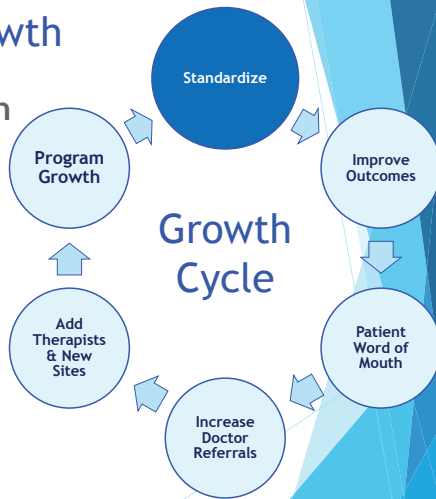
- ▶ 5 to 13 Treatment Sites
- ▶ 11 OP & 2 SNF



Program Growth

Standardization Growth Cycle

Four Pillars of Standardization Promotes Growth



Implementation

Overcoming Perceived Barriers to Implementation

1) **Profitability:** one on one treatment for an hour

- ▶ Imbed CLTs into pre-existing clinics
- ▶ 200K annual revenue generated from imbedding a lymphedema therapist into functioning clinic

Implementation

Overcoming Perceived Barriers to Implementation

2) **Fitting into an orthopedic model:**

- ▶ Scheduling
- ▶ Requires collaboration and training with scheduling department

Implementation

Overcoming Perceived Barriers to Implementation

3) **Maintaining quality control in a large hospital setting.**

Standardize Quality:

- ▶ Training
- ▶ Support
- ▶ Competency

Implementation Strategy for Standardization

1. Provide Certified Clinicians
 - ✓ CLT's
 - ✓ LANA
2. Professional Development:
 - ✓ Quarterly SIGS
 - ✓ Annual Intensive Training
 - ✓ Lymphedema Team Council
3. Competency Certification
 - ✓ Direct observation of evaluation & treatment
 - ✓ Chart reviews
4. New Site Set-Up

Standardization

Provide Certified Clinicians

- ▶ Only CLTs with minimum 135 hours training
- ▶ Host Klose Trainings 1-2x per year to build team
- ▶ Encourage LANA certification with reimbursement of LANA exam fee



LANA Certification:

- ▶ Current state 43% (9 of 21 therapists)
- ▶ 5 therapists in 2019
- ▶ Potentially 67% in 2019
- ▶ Goal is 100%!

Annual Intensive Training & Retreat

January 2018



January 2019

Standardization

First Annual Intensive Training: Two Days



2018

- ▶ MLD and bandaging review
- ▶ Compression garment training
- ▶ Teambuilding

Standardization

2019 Annual Intensive Training: One Day

Advanced topics:

- ▶ Pressure Gauge Check
- ▶ Gycocaylax
- ▶ Compression Garments Revisited
- ▶ Team Building



2019

Standardization

Lymphedema Team Council: Regional Leaders

- ▶ Provide local staff support and training
- ▶ Conduct observations and chart reviews towards staff competency
- ▶ Provide local community outreach, physician in-services
- ▶ Program "Think Tank"



Standardization

Professional Development: Special Interest Groups (SIGs)

- ▶ Quarterly
- ▶ Review of best practice
- ▶ Review of Program Standardization Pillars
- ▶ Program Growth
- ▶ Team Building



Standardization

Lymphedema Staff Competency

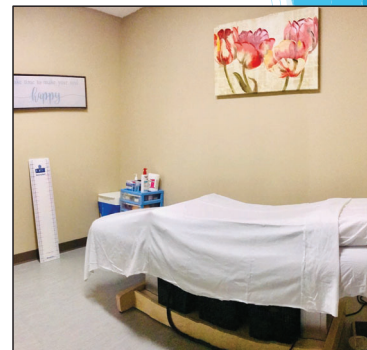
- ▶ Observation of evaluation, treatment, and garment measurement
- ▶ Chart reviews of documentation and billing

Lymphedema Evaluation, Treatment, and Discharge	Date	
Procedure	Completed	Not Completed
Evaluation: 1. Observes skin measure 2. Evaluation of patient (including fit for a wick therapy, bandaging, compression garments) 3. Bandaging of patient (including correct placement of tape) 4. Fitting of garments and use of bandaging and supplies 5. Bandaging of patient (including correct placement of tape) 6. Bandaging of patient (including correct placement of tape)		
Treatment: 1. Provides skin care 2. Provides skin care, including, proper treatment and 3. Provides skin care and proper use of 4. Provides skin care and proper use of 5. Provides skin care and proper use of 6. Provides skin care and proper use of		
Documentation: 1. Provides documentation for 2. Provides documentation for 3. Provides documentation for 4. Provides documentation for 5. Provides documentation for 6. Provides documentation for		
Discharge: 1. Provides patient education on 2. Provides patient education on 3. Provides patient education on 4. Provides patient education on 5. Provides patient education on 6. Provides patient education on		

Standardization

New Site Set Up Model

- ▶ Clinical Program Manager purchases equipment, sets up space, educates site director and therapy staff, admin staff, treats patient to develop strong referral source
- ▶ Turns functioning program over to new staff, provides 1:1 training until transition



Standardization

CT Consortium of Lymphedema Providers

- ▶ Founded 2007
- ▶ Community outreach with quarterly networking and educational opportunities



Guest Lecturer March 2019:
Maureen McBeth, MPT, CLT-LANA
"Innovations in CDT"

Take Home Message...

STAGE 3: Program Benefits & Growth through Standardization

- ▶ Program standardization leads to program growth
- ▶ 4 pillars of standardization that led to HHC success:
 - CLT/LANA
 - 5 day a week protocol
 - Garment fitting and training
 - Regular follow-ups



Hartford Healthcare Lymphedema Program Vision for the Future

Lymphedema Program Vision

- ▶ Continue standardization process
- ▶ Provide local access to lymphedema treatment
- ▶ Improve breast cancer related lymphedema surveillance program
- ▶ Promote collaboration with nutrition and psychology departments
- ▶ Establish lymphedema services in home care
- ▶ Collect and analyze data from outcome measure (LLIS) through the ROMS (Rehab Outcome Management System)
- ▶ Raise local and national awareness for quality of care in lymphedema management

Take Home Message...

Growth through Standardization: Back to the Future

- ▶ Journey of Treatment Protocols
- ▶ Case for Intensive & Comprehensive Treatment
- ▶ Programs Benefits & Growth through Standardization of Quality Care
- ▶ Return to our roots, **go back to the future!**