THE WINSTON CHURCHILL TRUST OF

AUSTRALIA

Report by - Catherine Harkin - 1997 Churchill Fellow

The Bob and June Prickett Churchill Fellowship
to study overseas developments in
Hand and Upper Limb Rehabilitation

INDEX

INTRODUCTION

In January 1997 I undertook an eleven week investigative tour of Hand Therapy Centres across the United States of America as a Churchill Fellow to study overseas developments in Hand and Upper Limb Rehabilitation.

The tour provided me with many invaluable opportunities, such as;

→ investigation of advanced clinical and surgical techniques,

→ liaison with world specialists in Upper Limb Rehabilitation,

→ consolidation of my skills as a Hand Therapist,

→ observation of the U.S. health care system and the impact of managed care,

→ attendance at the largest Hand Therapy and Surgery Symposium in the world,

From both a personal and professional level the tour was rewarding, challenging and energising, and for allowing me this wonderful opportunity I would sincerely like to thank the Winston Churchill Memorial Trust. In particular I would like to acknowledge Mr Bob Prickett, sponsor of the **Bob and June Pricket Churchill Fellowship** for his generous sponsorship of my fellowship and for his ongoing support of Churchill Fellows in Australia over the last five years.

Finally, I would like to thank the Mater Misericordiae Hospital in South Brisbane for their support and encouragement.

EXECUTIVE SUMMARY

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PROJECT DESCRIPTION:	The Bob and June Prickett Churchill fellowship (1997) to study overseas developments in Hand and Upper Limb Rehabilitation.

PROGRAMME:

The eleven week tour involved visits to Hand Therapy Centres in ten cities across the United States and attendance at a four day conference on "Surgery and Rehabilitation of the Hand" in Philadelphia. One of the major highlights of the fellowship was the opportunity to meet and liaise with hand therapists and surgeons from all over the United States.

SKILLS OBTAINED:

(i) New treatment techniques (ie. myofascial release, MLD, Fluromethane spray)
(ii) Use of electrical modalities as an adjunct to therapy (ie TENS, ultrasound, iontophoresis, muscle stimulation)
(iii) New Therapeutic equipment (ie. BTE, Dystrophile, Whirlpool, Ergometer)
(iv) New Splinting techniques and use of plaster casting
(v) Software options for Hand Therapy Evaluations
(vi) Updated techniques for Flexor and Extensor tendon management
(vii) Therapeutic Management of Thoracic Outlet Syndrome
(viii) Treatment of complex, traumatic upper limb injuries
(ix) Performance of functional capacity evaluations
(x) Reference books for clinical application

In addition, the fellowship provided me with the opportunity to observe a wide variety of treatment styles and approaches, and to discuss with therapists proposed research topics and the impact of managed care on the health care system in the USA.

PROPOSED DISSEMINATION OF INFORMATION:

I plan to disseminate the skills and knowledge I obtained to Australian Hand Therapists and Hand Surgeons by presenting at the following forums;

1. Australian Hand Therapy Conference - Sydney, 13th - 17th August 1997.
2. Australian Hand Surgeons Society Meeting - Brisbane, October 1997
3. Hand Therapy Interest Group - Brisbane, 30th July 1997
4. Occupational Therapy Staff Inservice - Mater Hospital, 4th September 1997
5. University of Queensland Occupational Therapy Lectures - University of Qld, 29th July1997

In addition, I propose to collate the treatment protocols from US Centres into a book on "Management of Common Hand Problems" to be made available to Therapists through the Australian Hand Therapy Association library, and to prepare articles on an alternative midcarpal instability splint and a dynamic thumb web-spacer splint for publication in the Hand Therapy Journal.

PROGRAMME

11th - 18th Jan	Pamela Silverman, OTR, CHT Dr Gordon, M.D. <u>Hand Therapy of San Francisco</u> 2300 Sutter Street Suite 208, San Francisco, CA 84115 Ph: (415) 346 - 9555 Fax: (415) 346 - 1507
19th - 24th Jan	Donna Breger - Stanton, MA, OTR, CHT Dr Robert Szabo M.D. Dr Robert Slater M.D. <u>Hand Therapy</u> University of California Davis Medical Centre 2230 Stockton Blvd; Room 1430 Sacramento, CA 95817 Ph: (916) 734 - 3702
27th - 31st Jan	C. Christopher Reynolds, PT, MHS, CHT Dr Robert Wilson, M.D. Dr William Lovett, M.D. Dr Frederick Meyer, M.D. Dr John Ricker, M.D. Dr Paul Guidera, M.D. <u>Healthsouth Hand Rehabilitation</u> 2610 North Third Street Phoenix, Arizona 85004 - 1198 Ph: (602) 264 - 3541
3rd - 7th Feb	M. Lainie Dazet, OTR Ann E. Garvin, MA, OTR Mary Hogue, OTR, CHT Dorit Aaron MA, OTR, CHT, FAOTR David M. Lichtman, MD Dr Bennett, MD <u>Healthsound Houston Hand Rehabilitation</u> 1213 Hermann Drive Suite 255, Houston, Tx 77004 Ph: (713) 520 - 5880 Fax: (713) 520 - 9195

10th - 14th Feb

Christina K. Payne, OTR
Nancy M. Cannon, OTR, CHT
James W. Stickland, MD
James B. Steichen, MD
William B. Kleinman, MD
Richard S. Idler, MD

The Indiana Hand Centre
8501 Harcourt Road
PO Box 80434
Indianapolis, IN 46280 - 0434
Ph: (317) 872-5101
Fax: (317) 875-9174

17th - 21st Feb

Susan R. Efkeman, OTR/L
Peg Ebert, OTR/L
Dr Yakaboff, MD
Dr Kitzmiller, MD

University of Cincinatti Rehab Services (2.5 days)
University Medical Centre
Suite 7100, Medical Arts Building
222 Piedmont Avenue, Cincinatti
Ohio 45219
Ph: (513) 475 - 8812
Fax: (513) 475 - 7235

Christopher Bochenek, OTR/L, CHT
Peter J. Stern, MD

Bethesda Hand Rehabilitation (1.5 days)
280 Winslow Avenue
Suite 408, Cincinatti, OHIO 45206
Ph: (513) 569 - 6699
Fax: (513) 569 - 6688

Jenny Muller, OTR/L, CHT

Spectrum - Rehabilitation Services (1 day)
of The Christ Hospital
2123 Auburn Avenue
Mob. Ste 224
Cincinatti, Ohio 45219
Ph: (513) 369 - 8545
Fax: (513) 629 - 3041

24th - 28th Feb	Terri L Wolfe, OTR/L, CHT John Lubahn, MD Dr Cermack, MD Dr Hood, MD Hand and Arthritis Rehabilitation Center, Inc 300 State Street Suite 206, Erie, Pennsylvania 16507
3rd - 6th March	John Farabaugh, OTR/L, CHT Randy Wolfe, OTR/L Dr Cask, MD Hand / Burn Rehab Unit Good Shepherd Rehabilitation Hospital The Robert and Marian Edwards Center 820 S. Fifth Street Allentown, Pennsylvania 18103 - 3298 Ph: (610) 776 - 3206
7th - 12th March	Symposium - "Surgery and Rehabilitation of the Hand '97 Wyndham Franklin Plaza Hotel 2 Franklin Plaza Philadelphia, PA, 19103 Ph: (215) 448 - 2000
12th - 20th March	Patricia M. Byron, MA, OTR/L, CHT James Hunter, MD The Hunter Hand and Nerve Center 901 Walnut St, Philadelphia, PA 19107 Ph: (215) 629-0980 Fax: (215) 629-0203
24th - 27th March	Marianne E Spur, OTR/L, CHT Dr Dalsey, MD University Orthopaedic Specialists 132 Grove Street Haddonfield, NJ 08033 Ph: (609) 428 - 4747 Fax: (609) 427 - 9468

MAIN BODY

1. **Hand Therapy of San Francisco**

a) Activities Undertaken

* Attendance at Dr Gordon's clinic
* Anatomy lecture and cadaver laboratory at UCSF
* Observation of Therapists in Center
* Presentation on Australian Hand Therapy

b) Information Obtained

* Assessment and home programme sheets
* Cumulative Trauma Disorder Assessment & Guidelines
* Articles on RSI, Saddle Syndrome, Tendon Management
* Information on ORCA (Software - Greenleaf Medical)

c) General Information

* Clinic employs 3½ therapists and 2 aids
* Strong emphasis on myofascial release, shoulder/neck treatment, modalities, nerve gliding
* soft splints are primarily pre-fab (NCM)
* main thermoplastics ⇒ orfit, aquaplast ($)

d) Specific Lessons

* Wound Care → "Xenoform" for non-stick dressings
  → fingers dressed around each phalanx to not impede ROM
  → cleaned by drizzling saline over gauze on wound

* Electrical Modalities

a) Ultrasound → primarily for tissue adhesions
  → Phonogel with Dexamethasone used as medium on skin with anti-inflammatory. qualities (can be left on for 2 hours).

b) Iontophoresis → machine is a "Phoresor II"
  → Introduces Dexamethasone via electric current.
  → Aloe gel applied after treatment to lower skin pH level.

* Soft Tissue Mobilisation

a) Scar Massage → 'dycem' over scar to free adhesions
→ tendon gliding with massage ie. scar dorsum MP Joint move scar distally while extending finger.
→ heavy pressure is contra-indicated (blisters).

b) Myofascial Release → special training in U.S..
→ 2mins application to loosen fascia.

* Operative Procedures

a) Wafer → mini ulnar shortening for TFCC
→ alternative to Blatt Capsulodesis.

b) Radial Tunnel Release → side of anconeous lifted and used to pad around the Radial Nerve and extensor origin.

* Radial Tunnel Compression

a) Assessment → middle finger lift test.

b) Treatment → heat
→ neural stretches
→ stretch of tight pronators
→ inotophonesis
→ myofascial release

* New splint designs

a) Finger compression

wrap	→	soft foam
	→	worn at night for finger extension and oedema compression

* Ulnar deviation splint - “Rolyan In-Line Splint”

* Tendon Management

a) Operative
→ 4 strand Kessler repair
→ developing barbed titanium clips (pine tree shaped) to stitch into ends
→ successful trials on several patients.

b) Post-op
→ simple, orfit backslab for 4/52
→ use Ros Evans dorsal DIP splint for FDP
→ rarely use traction
→ very loose dressing; no resistance.
→ passive ROM started immediately
→ place and hold ¾ of a fist 10 x / 1 ½ hrs.
→ wrist tenodesis to facilitate glide

c) Tenolysis
→ mobilise 24 - 36 hrs post operation

d) Mallet finger
→ volar, thermoplastic splint for 8/52
→ no time restrictions post injury

* Reflex Sympathetic Dystrophy

→ hot or cold water depending on relief
→ drugs have a use with causalgia induced RSD ie. Anti depressant Elavil Amytriptalline (10mg dosage).

2. **Hand Therapy UC Davis (Sacramento)**

a) Activities undertaken

* One day visit to private practice in El Cerrito, CA. "Accelerated Hand Therapy Associates" - Philae Carver.
* Attended clinics with Dr Szabo, Dr Slater and Dr Pappas.
* Observation of Therapists in UC Davis.
* Attended Journal Club meeting with therapists and surgeons from Sacramento.

b) Information obtained

* Journal articles written by Donna Breger Stanton. (Splinting, Biomechanics, Torque ROM, Inrinsic Minus, Semmes-Weinstein monofilaments.)
* Assessment and treatment of Carpal Tunnel.
* Treatment protocols. (MP and TFCC Arthroplasty, Tendon Repairs and Transfers.)

c) General Information

* Clinic employs 3 therapists.
* High numbers of CTD/CTS patients.
* Trend to move into reflexology, acupressure, and shiatsu.
* Ergonomics a strong focus in treatment.

d) Specific Lessons

* Durkan CTS Gauge → diagnostic device for CTS
  → continual pressure 12-15Lbs/square inch
  → 90% more specific and 87% more sensitive than Tinel's and Phalen's tests.
  → available: George Medical
  902 12th Street
  Hood River
  OR 97031
  ph: 1800 - 486 - 5584

* Peter Edgelow's Back Roll → Patient lies on roll of high density foam and performs breathing exercises.
→ Aim = stretch tight pectoralis muscles, stretch cranium to sacrum, draw Rhomboids into spine.

* Exercises

a) Theraband → attached to door for UL exercises (yellow, red, black)

b) Chinese Balls → fine motor control and manipulation also meditative

c) Shoulder Stretches → place arms on doorway edges and lean body in
→ stand in front of wall with little fingers on wall at shoulder height, then bring arms back and out
→ hands by side and flex/extend wrists (slowly abduct shoulders)

d) Putty → NCM Light Blue is good resistance

* Activities of Daily Living (ADL) → Selection of assistive devices specific to hand dysfunction displayed on board in department.

* Modalities

a) Heat → hydrocollator with hot packs and towels, heat for 20mins.
→ Paraffin wax - dip hand 6 - 7 times.

b) Cold → ice massage - freeze water in paper cup then tear cup way and use this ice block to massage.

c) Contrast → 2 plastic tubs with sponges inside for exercising in contrasting temperatures.

d) Ultrasound → good treatment for pain/oedema.
→ 5 - 6mins set at 8 watts.

e) Iontophoresis → earth electrode on upper arm.
→ 1 ½ cc's Dexamethasone injected into main electrode.
→ 24mins at 1.7 milliamps.

* Reference on Modalities

Michlovitz, S.L. Thermal Agents in Rehabilitation 3rd ed.
Fa Davis Co, : Philadelphia

3. **Healthsouth Hand Rehab. Unit (Phoenix)**

a) Activities Undertaken

* Attended clinics with Dr Wilson, Dr Meyers, Dr Guidera.
* Attended Hand Surgeon's morning meeting at St. Luke's Hospital, Phoenix
* Observed Therapists in clinic.

b) Information Obtained

* Joint Mobilisation.
* Nerve Assessment.
* Patient education handouts (CTR, Keyboard use).
* Fibromyalgia tender points.
* Dystrophile
* CTD Evaluation

c) General Information

* Clinic started 20yrs ago by Dr Wilson/Margaret Carter.
* Sold to Healthsouth 1996.
* Therapists required to see > 20 patients/day
  ie. 1 patient / 15mins

d) Specific Lessons

* Tendon management

  a) Flexors → modified Kleinert regime (wrist flexed 30°)

  a) Extensors → zones 4,5,6,7 - static splint 4/52
  zones 2,3 - PIP immobilised 4/52

* Boutonniere Splint → 3 point aluminium bar with one central strap riveted to bar.

* Reverse Finger Knuckle Bender Splint
  → for central slip after 3wks to allow minimal AROM
  → available from NCM

* Whirlpool → (33°c) warmth and agitation is used to clean wounds
  → 20mins duration; exercise 4mins then remove arm for 1min to avoid dependent position resulting in oedema.

* Fracture pinning		→	pin removal dependent on amount of cancellous bone.
	MC's/DP's	→	3 - 5 weeks
	PP's	→	5 - 7 weeks
	MP's	→	7 - 14 weeks
* Carpal Tunnel Syndrome		→	cause may be genetic (tunnel size), diabetes, hypothyroidism, interossei length etc.
		→	Interossei test with 3 point chuck pinch with MP's flexed - if positive may need to include MP's in night splint.
* Hypersensitivity		→	evaluate by using pinch meter and recording Lbs.
* TENS		→	use on modulated setting before or during activity to block pain by aggravating nerves.
* Dystrophile		→	developed Dr Watson (Conneticut)
		→	used like scrubbing brush 3 mins 3 x /day and heavy weight in hand rest of day.
		→	compression/distraction believed to help dystrophies.
* Digitrap		→	buddy strap for 3 fingers Available: 4730 E Pima, Tucson, Az 85712 ph: (602) 327 - 6276
* Ergonomics		→	chair should have arm troughs, full back support.
		→	swivel arms on chair $300 - $1000 U.S..
		→	patient take 'microbreaks'
		→	negative keyboard incline to increase wrist neutralit
		→	felt tip marker is least stressful pen size
* Elbow stiffness		→	aim to touch thumb tip to shoulder
		→	treatment options → heat, passive stretch, AROM, BTE, Muscle Stim., Valpar, Ulnohumeral distraction, radial head mobilization, pulleys, joint distraction, shoulder exercises.

* Muscle Stimulation → electric current stimulates neural muscle junction.

* Fluromethane spray
  → Dichlorodifluromethane 15%
  → Trichloromonofluromethane 85%
  → used for CTD; sprayed on muscles 12 - 8 inches (sweeping spray) while applying a stretch to the muscles
  → Developed by Janet Travell (myofascial therapist, developed trigger points, JFK's personal physician)

* Reference book

  Travell, J.G. and Simons, D.G. (1983) Myofascial Pain and Dysfunction - The Trigger Point Manual. Williams & Wilkins; Baltimore.

* FDP → button attached with fine wire, not Thread.

* Joint mobilisation →
  Osteokinematics = normal jt movements (ie flex/ext)
  → Arthrokinematics = other jt movements (ie oscillation)
  → Based on 2 rules
  (I) Convex on concave (wrist on MC)
  (II) Concave on convex (MCP, PIP)

* Grades of Joint Mobilisation

I	-	small oscillation, little distraction	} for pain
II	-	increased oscillation and distraction	}
III	-	increased oscillation and movement	} to increase
IV	-	movement and stretching	} ROM
V	-	joint manipulation	}

* Cubital tunnel treatment
  → ulnar nerve entrapment
  → pad elbow with activities
  → iontophoresis 2 -3 x/week (2 milliamps / 20 mins)

* Lateral epicondylitis
  → ECRB tendonitis
  → options = task modification, wrist support, laser, iontophoresis, elbow splint.

* “Piano Key” Stretch → stabilisation of ulnar head and rotation of pisiform around this ulnar head.

* Ultrasound
  → continuous, high frequency sound waves
  → 1 million mHz/second
  → warms up deep tissues on continuous mode
  → takes 5 mins to warm tissue
  → move head of machine over 2-4 x the area involved
  → maintain skin contact
  → transmission gel to transmit the waves into the tissue
  → can also transmit medication ie. Dexamethasone

4. **Healthsouth Hand Rehab. Unit (Houston)**

a) Activities Undertaken

* Observed therapists at clinic
* Visited clinics in Smith Tower and North Houston
* Attended clinic with Dr David Lichtman
* Developed splint for midcarpal instability
* Visited Shriner Hospital - clinic for children with congenital abnormalities ie Arthrogryposis.

b) Information Obtained

* Article on congenital abnormalities
* Information on Greenleaf Medical Software Package
* Treatment protocols

c) General Information

* level of care altered due to Healthsouth takeover, for example therapists not CHT's
* Shriner Hospital (Freemason) runs clinic for children with congenital problems. Dr Bennett and Dr Granberry volunteer their time. Main procedures are bone lengthenings, web space widening etc.

d) Specific Lessons

* Team Mate → microcurrent unit for pain/oedema
  → application with "Electromesh Glove"
  → polarity (+ve → -ve) causes muscle contraction
* Sandwich Splint → soft foam in polyform splint applied with ace bandage for treatment of balloon swelling
* Midcarpal Instability Test (Dr Lichtman)
  → patients elbow on their knee
  → wrist relaxed in palmar flexion
  → other hand grasps MC bases and capitate
  → move midcarpals palmarly (sublux) while ulnar deviating the wrist
  → +ve test elicits a "clunk" with discomfort
  → splint suitable for symptom relief only

* CTR - Dr Lichtman → small incision on Thenar Crease (1½cm)
  → good cosmesis, less risk, less pillar pain

5. **The Indiana Hand Center (Indianapolis)**

a) Activities Undertaken

* Observation of >30 therapists in Center
* Observation of video on Dr Strickland's 4-strand technique (Flexor tendon repair)
* Attended clinics with Dr Strickland, Dr Streichan
* Met Elaine Fess, Nancy Cannon

b) Information Obtained

* Early AROM Programme for 4-strand Repairs
* Patient handouts and therapy protocols
* Information on Silopad Finger tubing
* Copies of Articles published in Hand Clinics from the Center

c) General Information

* largest Hand Center in the world
* owned by 10 surgeons
* director = Nancy Cannon, OTR, CHT
* all therapists are OT's
* patient seen for 30-60mins/visit
* intensive training for new therapists
* heavy focus on home programme/education
* little use of modalities
* therapists work from "Indiana protocols" primarily
* therapy cost = @ $45 U.S/15mins
* use pre-cut splint blanks

d) Specific Lessons

* Oedema massage → move fluid through flexor muscle bellies distally, over palm through web spaces, dorsum and extensors
* Intrinsic Stretch splint → small plastic moulded to prox. Phalanx with hooks attached and a rubber band with punched holes.

*	Dynamic splints	→	dental floss to hold traction Phoenix outriggers
		→	dycem attached to moleskin for slings
		→	regime written inside splint
*	Norms	→	pocket book used by therapists with dates, norms, diary, splint costs etc.
*	Tendon repairs (flexors)	→	2 splints used; no traction
		→	static splint (20° wrist flexion) applied day one and 15 x passive flexion/hour
		→	wrist hinge splint (10° wrist extension allowed) applied each hour for 25 x tenodesis and place and hold exercises
		→	incisions on side of finger for repair (↓ scar)
*	CTS	→	all Surgeons do open technique, not endoscopic
*	Wrist stretching	→	velcro on weight (can)
*	Forearm rotation	→	patients taught to grasp ulnar and to use thumb to rotate radius over ulnar (supination)
*	CMC Jt Arthroplasty	→	trapeziectomy with PL and FCR used as “anchovy” (immobilised 4 - 6 weeks)
*	Impairment Rating	→	performed on D/C for compensation purposes
		→	Greenleaf Medical performs it automatically
*	Dycem	→	heat with gun and stick to thermoplastic to avoid splint migration

* Wound care	→	No saline bathing (interrupts healing)
	→	Wet dressing with strips of gauze soaked in saline. Window in coban so patient can resoak the dressing.
	→	Very bulky gauze dressings.
	→	Ace bandages (support, compression, pain relief).
* Tendon gliding	→	sweeping movement (make fist, flex wrist, ext fingers, ext wrist).
* Replants (hands/fingers)	→	Resting splint in safe position
	→	AROM started 6 - 8 x / day at 2 - 3 weeks
* PIP Arthroplasty	→	Sutter implants
	→	mobilise from 2/52
* Elastomer (50:50 mixture)	→	mould over scar, remove, fill gap in mould with elastomer to increase compression.

6. **University of Cincinatti Hand Center**

a) Activities Undertaken

* 1½ day visit to Bethesda Hand Rehab.
* 1 day visit to Spectrum (Christ Hospital)
* Observed therapists in all clinics
* Attended clinic with Dr Peter Stern

b) Information Obtained

* Information on dynamic traction for Intra-articular Phalanx Fractures
* Talk on Therapeutic exercise
* Therapy protocols and evaluation sheets

c) General Information

* UC hand centre employs 3 OT's and is run by the University.
* Referrals from 2 plastic surgeons (Yakaboff and Kitzmiller). Large population of indigenous people.
* Bethesda started in 1980 by Dr P. Stern and is now owned by Bethesda Hospital. Employs 5 Certified Hand Therapists.
* Christ Hospital employs 2 OT's in a small department.

d) Specific Lessons

* Reference Book	→	Kisner and Colby Therapeutic Exercise Foundations and Techniques F.A. Davis Co. : Philadelphia
* Hand Exercise	→	very large putty block pushed on table (RSD)
* ADL checklist	→	assess independence of hand patients
* Flexor Tendons (UC Center)	→	modified Duran with no traction and passive ROM for 4/52 (2-strand repair)
* Extensor Tendons	→	Static extension splint 4½ weeks
* Meccano	→	erector set as fine-motor hand activity is utilised in the hand clinic

* SODA
  → Sequential Occupational Dexterity Assessment
  → assess hand disability in daily activities
  → $200 U.S
  available St. Maartenskliniek
  Dept. of Research and Development
  Hengstdal 3
  6522 Ju Nijmegen
  The Netherlands

* Research Proposal
  → task analysis of ADL's to assess assistive equipment for hand dysfunction
  ? are the devices we prescribe designed to allow the least painful, most functional position?
  ? can the results assist with development of more suitable devices

* Tendons (Bethesda)
  → modified Duran with early active at 2/7
  → extensors in static splint with IP ROM at 2/52
  → wrist tenodesis incorporated
  → pressure on volar forearm to increase glid
  → quadriga effect of FDP used to enhance action
  → muscle stim. used at 6/52 if no active tendon pull through

* PIP Arthroplasty
  → Therapy begins 5/7 post op
  → dynamic extension splint for 6/52
  → night resting splint (hand based)
  → Mobilisation 6 - 8 x / day
  → dynamic flexion from 4/52
  → acceptable result = 60 - 80° flexion
  15 - 20° lag

* 'Rolfing'
  → Vigorous deep muscle massage to break trigger points

* Strickland Formula:

$$\frac{\text{TAM (PIP + DIP) - lag}}{175} \times 100 = \%\ \text{of normal}$$

Excellent	→	75 - 100
Good	→	50 - 74
Fair	→	25 - 49
Poor	→	0 - 24

* Mill's Stretch → rapid stretch for lateral picondylitis

* Digital Camera (DC5O) → downloads hand pictures onto laptop for use on patient exercise sheets etc.

* Shoulder strengthening → weighted bar over body lying on back

→ lift bar up and down (bench press)

* Plaster Casting Fingers
  - → Rolyan cast (Red) is creamier
  - → Warm and stretch hand and joint
  - → Strips 1½ " wide and 6" long
  - → Warm water, then lay on towel
  - → Lotion on finger
  - → Lay strips on, extending on volar side of MP joint to give better leverage.
  - → Distract joint and distribute pressure evenly.

7. **Hand and Arthritis Rehabilitation Center, Inc - (Erie)**

a) Activities Undertaken

* Observed therapists treating patients
* Gave inservice on Australian Hand Therapy
* Attended clinics with Dr Lubahn, Dr Baker, Dr Hood, and Dr Cermack.
* Attended journal club meeting with surgeons and therapists.

b) Information Obtained

* Therapy protocols.
* Arthritis handouts/assessments.
* Monitoring Health Outcomes.
* The MOS 36 item Short Form Health Survey.
* FCE Evaluation and Reference List.
* UE Net Computer Database.

c) General Information

* Clinic started 8 years ago.
* Owned by Terri Wolfe (President of ASHT)
* Employs 5 therapists and 1 psychologist
* Large caseload of Rheumatology/Ergonomics

d) Specific Lessons

* Flexor tendons → FDP button is attached proximal to finger nail.
  → Duran protocol with passive 4½ weeks.
  → No traction utilised.

8. **Hand Unit - Goodshepherd Rehabilitation Hospital (Allentown)**

a) Activities Undertaken

* Observed therapists at center.
* Attended OT staff meeting.
* Gave presentation on Australian Hand Therapy.

b) Information Obtained

* Information on vascular disorders and Lymphatic Drainage
* Patient information handouts and therapy protocols.
* Joint protection.
* Driver evaluations.
* Information on the Dexter Computer System.

c) General Information

* 75 bed hospital started by a Church Minister.
* Employs 3 hand therapists and 3 COTA's
* Clinic with Dr Cask (Philadelphia) every 2/52.

d) Specific Lessons

* CTR	→	approximately 50% are endoscopic.
* Extensor Tendons	→	static extension splint for 1/52
	→	DIP's released at 2/52, PIP's at 3/52, MCP's at 4/52
* Alien Hand Syndrome	→	post stoke; no ownership
* Steal Syndrome	→	seen in dialysis patients where shunts affect blood flow to median and ulnar nerves and distal hand.

9. **The Hunter Hand and Nerve Center, (Philadelphia)**

a) Activities Undertaken

* Observation of therapists at centre
* Observation of Dr Hunter assessing patients with TOS and Brachial Plexus lesions.

b) Information Obtained

* TOS (Thoracic Outlet Syndrome) home programme, evaluation, symptom control.
* Nerve gliding sheets.
* Cervical Spine assessments.
* Ros Evans' study of Zone 1 Flexor Tendons.

c) General Information

* Philadelphia Hand Centre started in 1971 by 7 surgeons and 7 therapists.
* Dr Hunter has now split and runs the Hunter Hand and Nerve Center with 5 Hand Therapists and 2 AIDS.
* High percentage of patient with TOS and Brachial Plexus lesions.

d) Specific Lessons

* Aerobic exercise → important for effects on wound healing, articularly circulation after nerve operations.
* Posture training → torso strengthening and use of lumbar rolls encouraged
* Thoracic Outlet Syndrome → Common Operations are scalenectomy and extensive neurolysis and if unsuccessful, 1st rib release.
  → Gentle mobilisation and nerve glides post-op
  → Relief of symptoms post-op is questionable and return to previous occupation is unlikely.

*	Breathing	→	Pillow under knees to take strain off latissimus dorsi.
		→	Patients taught diaphragmatci breathing so Scalenes don't tighten over the plexus.
		→	Taught to breathe in nose and out mouth.
		→	Push stomach before breath in to stimulate diaphragm contraction.
		→	Patients practice 5 x / day with eyes closed and try to make stomach rise and fall.
*	Night pillows	→	under affected shoulder and knees.
*	Smoking	→	Important to cease pre-op because of close proximity of phrenic nerve which innervates the diaphragm.
*	Nerve Glides	→	Done to point of pain, gently oscillated, then continued further.
*	Shoulder exercises	(a) Pendulum - for 1 week, then move onto; (a) Isometrics.	
*	Wrist and hand stiffness	→	5 mins ultrasound (continuous 1.0 watts / cm2) over dorsal 1.1 wrist. Apply passive wrist 1.2 flexion with intrinsic stretch 1.3 bands on.

10. **University Orthopaedic Specialists (Haddonfield)**

a) Activities Undertaken

* Observation of patient treatment in Center.
* Attended clinic with Dr Dalsey.

b) Information Obtained

* Iontophoresis consent form.

c) General Information

* Employs 3 therapist.
* Primary referrer is Dr Dalsey.
* Large percentage of severely traumatic injuries.

d) Specific Lessons

* Nier's Standard shoulder Protocol

a) Pendulum
b) Forward flex/ext } Performed on back with
c) Int/Ext Rotation } weighted cane
d) Overhead Pulley

* Replants → stimulants (coffee, chocolate, alcohol) are ontraindicated for their affect on the vascularity.

* Dynamic Elbow Splint → Make in one piece then scoop out around the elbow to allow movement but prevent glide after traction is applied.

* Ulnar Drift Splint Design

Philadelphia Symposium →

Surgery and Rehabilitation of the Hand

March 8 - 11, 1997

* General Impressions

The content of the conference was very comprehensive with presentations by world renowned specialists. There were a wide variety of practical workshops with adequate opportunity for questions. The audience of approximately 800 participants was made up of surgeons, occupational therapists and physiotherapists.

* Highlights

The main highlight was the opportunity to meet and talk with well known Hand Surgeons such as Dr Kleinert, Dr Hunter, Dr Schneider, Dr Kirk Watson, Dr John Madden, Dr Stern and Dr Swanson, and also hand therapists, such as, Evelyn Mackin, Ros Evans, Terri Wolfe, Ken Flowers, Judy Colditz, Judith Bell-Krotoski, Elaine Fess, and Karen Stewart-Pettengill. As an international guest I was invited to cocktails and dinner with the board members and invited quest speakers, which was also a wonderful chance to meet people. The trade display during the conference was another highlight as it allowed me to see the latest equipment, computer software and books available to therapists in the USA.

* Particularly valuable presentations

→ Reconstructive Procedures for the wrist
  * Dr H. Kirk Watson, M.D.
→ When stiffness occurs/mobilising the chronically stiff hand
  * Judy Colditz, OTR/L, CHT, FAOTA
→ Thoracic Outlet Syndrome
  * Dr James Hunter, M.D.
→ Extensor Tendons - To mobilise or not to mobilise ?
  * Karen Stewart-Pettengill, MS, OTR/L, CHT.
→ Restoring the Ulnar Carpal 'Lynch Pin' using the Porous Cord Implant
  * Hunter and Jaeger, M.D.
→ Peripheral Nerve Injuries - The Next Decade
  * Goran Lundborg, M.D., Phd.

* New book available;
  "Tendon and Nerve Surgery in The Hand - a 3rd decade."
  Hunter, Schneider and Mackin

EFFECTS OF MANAGED CARE ON THE U.S. HEALTH SYSTEM

The focus on managed care in the U.S. Health Care system, in addition to the massive reductions in spending growth at the expense of health professionals who are reimbursed by Medicare outlined in President Bill Clinton's fiscal year 1998 budget have resulted in growing insecurity and a lack of confidence expressed by the American consumers. According to a nationwide study by the National Coalition on Health Care, headquartered in Washington D.C., many Americans believe that the Health Care System is putting profits ahead of people and quality.

Clinton's health budget outlines a reduction of reimbursements to managed care plans by 34 million dollars over 5 years, resulting in indirect savings of 18 billion dollars. The document goes on to state that these provider payments can be restrained without affecting the quality, cost, or accessibility of health care.

Within this rapidly changing marketplace the vast majority of hand therapists I spoke with during my Churchill Fellowship expressed grave concerns regarding their difficulties in running a profitable hand rehabilitation business without significantly altering the level of patient care provided or the skill level of therapists employed.

In addition to this, the "Stark II" legislation, passed several years ago in the U.S., forbidding Physicians from having financial relationships or ownership of Hand Therapy Centers where they refer clients, has led to large entrepreneurial health care firms, such as Healthsouth Corporation, establishing chains of rehabilitation centers across all States of the U.S..

Mr Scrushy, CEO of Healthsouth Corporation, has brought an unheard of level of 'razzle-dazzle' to the world of hand rehabilitation by using sports stars to raise the company's profile in his aim to carve a brand-name consumer product. By reducing the numbers of skilled hand therapists in each center and increasing the number of on-the-job-trained OT Technicians or Aids, Healthsouth is able to provide a "questionable" level of treatment at a cheaper rate than hospitals or independent private practitioners.

By examining these emerging trends in the U.S., I was able to develop an understanding of this period of transition and an awareness of the importance for Australian Hand Therapists to plan for these potential challenges in the future.

CONCLUSIONS

In conclusion, my Winston Churchill fellowship was an educational experience through which I gained many new skills and knowledge in the field of hand and upper limb rehabilitation. The tour gave me the opportunity to meet experienced and highly skilled hand specialists and to listen to a wide variety of high level conference presentations. It also allowed me the change to discuss controversial issues with many therapists such as managed care and the changing face of health care in the United States. Finally, the eleven weeks allowed me to observe a wide variety of approaches to problems and to question my approaches in terms of cost effectiveness, efficiency and validity. This chance to think and evaluate ones work is very valuable and rarely available to a busy practising therapist.

I propose to <u>disseminate</u> the information I have learned to other hand specialists in Australia through the following means;

1. AHTA Conference (Australian Hand Therapy Association) - Sydney, August 1997.

   At the National Hand Therapy Conference 1 plan to give a brief overview of the tour and an outline of some of the skills I learned.

2. AHSS Meeting (Australian Hand Surgeons Society) - Brisbane, October 1997

   This will be a presentation to Hand Surgeons (Consultants and Registrars) primarily from South East Queensland.

3. Hand Therapy Interest Group - Brisbane, July 1997

   This will involve a presentation to Hand Therapists (OT's and PT's) from South East Queensland and will be a more extensive presentation with a practical component ie. Splint demonstration.

4. Mater Hospital Inservice - Brisbane, July and September 1997

   As part of our Occupational Therapy Department Inservice Programme I will present an overview of the tour and highlight lessons learned that are of interest to therapists in other areas ie. Ergonomics, splinting for children with congenital anomalies, driving assessments.

5. University Lectures to Year II Occupational Therapy Students - Brisbane, July 1997

   Each year I teach splinting tutorials to 2nd year O.T. students, and this year will be able to modify the classes to incorporate new splinting patterns, styles and techniques.

In addition to these presentations, I have planned to collate the therapy protocols and patient handouts which I gathered from all the centres into a folder on "Management of Common Hand Problems - Protocols and Educational Material".

This will be made available for Hand Therapists to review, as will a copy of this report, through the Australian Hand Therapy Association Library (of which I am currently acting as Librarian/Historian). I am able to advertise the availability of these documents through the AHTA newsletter, published quarterly. Finally, I have planned to undertake preparation of journal articles for possible publication in the Hand Therapy Journal on the following two topics;

1. Development of a midcarpal instability splint.

   (I developed this splint in collaboration with Dr Lichtman, Houston, Texas while on the fellowship.)

2. Development of a Dynamic Splint for treatment of Contractures of the Thumb Web Space.

   (I developed this splint while observing treatment in Phoenix, Arizona and since my arrival home in Australia.)

Within my work as a Hand Therapist at the Mater Hospital, in South Brisbane, I propose to implement new ideas and techniques as clinical patient problems arise. I also plan to submit a submission to the Mater for purchase of the following equipment for the department (if funds become available):

* electrical modalities (ultrasound, iontophoresis)
* hot packs and hydrocollator
* Deep Prep massage cream
* Theraband
* Hot and Cold Tubs (Contrast Bathing)
* Whirlpool
* Parrafin Wax.

Similarly, I plan to propose purchase of the following reference books by the Mater Medical Library (as funds become available):

1. Michlovitz, S.L. Thermal Agents in Rehabilitation 3rd edition. Philadelphia; FA Davis Co.

2. Travell, J. And Simons, D. (1983) Myofascial Pain and Dysfunction - The Trigger Point Manual. Baltimore : Williams and Wilkins.

3. Kisner and Colby. Therapeutic Exercise - Foundations and Techniques. Philadelphia : FA Davis Co.

4. Hunter, Schnieder, Mackin (1997) Tendon and Nerve Surgery in the Hand -

A 3rd decade.

Personally, I am planning to design a display board for the therapy room demonstrating assistive devices available for patients with hand dysfunction, amputations, arthritis, or other disabling conditions. Finally, during the tour I photographed much of the activity equipment utilised for Rehabilitation in the U.S. and I plan to arrange for the Mater Maintenance Department to build these devices from the photographs.

RECOMMENDATIONS

It is my recommendation that Australia adopt Hand Therapy Certification based on the U.S. system by development of an examination process written by experienced hand therapists. Formalised certification in Australia would;

* maintain high standards in the practice of hand therapy,
* enhance the quality of patient care,
* recognise therapists who have achieved this advanced level of professional knowledge, and
* encourage participation in continuing education and professional development

It is also recommended that Australian Therapists undertake a plan of action in preparation for possible changes to Health Care in Australia with the development of managed care. Some suggestions for action are outlined below;

* Marketing of Hand Therapy should focus on the 'gatekeeper' (ie. The physician who controls the referral) rather than the specialist.

* Relationships with insurance companies should focus on network participation rather than just managed care contracting.

* Business development and advertising strategies should focus on adding value to the managed care plan.

* Therapists should have an accurate picture of costs to provide services, or costs associated with producing an outcome.

* Therapists should ensure the appropriate professional skill mix to provide quality evaluations, therapy and outcomes at a cost that allows the provider to cover the costs of delivering care.

* Therapists should aim to reduce costs, waste and overheads, and focus on major expenses and measurement of outcomes.

If Australian Therapists take action now and plan for managed care, then I believe it can be viewed as survivable, change provoking, and challenging.

Finally, it is my recommendation that therapists apply for overseas study fellowships, such as the Winston Churchill Fellowship, as I believe they offer an invaluable and rewarding experience from both a personal and a professional level.