Models of Low Vision Rehabilitation and a Multidisciplinary/Interdisciplinary Approach to Low Vision Rehabilitation

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LV rehabilitation in Canada

- Very variable among the Provinces
- QC – most comprehensive
  - 14 government-funded MDCs
- ON
  - A few MDCs
  - 10 CCTV assessment centres
  - OD/MDs in solo practice or with VLRO (CNIB)
- AB
  - One MDC in Calgary and one travelling LV clinic for children
  - Services by VLRC (CNIB) working with Optoms in their offices
• SK
  • 2 clinics with OD/MD passing onto VLRC
• MB
  • 2 fairly complete MDCs offered by VLRC
• BC, NS, PEI, NB, NL – no MDCs
  • ODs → devices → refer to VLRC
  • PEI – have to travel out of province
• Most provinces have some OD/MDs providing LV assessment and devices

• Communication not ideal between our professions

• Funding for low vision **assessments** very variable also.

• BC, NS & AB – ODs can bill a modest LV assessment fee
  • Balance billing is allowed in BC

Other provinces – for restricted category of patients (e.g. age, veterans) or dependent on location of service or no fee at all
• ON – no fee for ODs doing LV assessment. There is a fee for MDs

• Yet the ideal is for LV rehabilitation to start with refraction, updated glasses, good functional assessment (VA, CS, fields etc), determination of magnification and trial of simple devices (if applicable).
Also very variable funding for devices

ON – ADP
AB – funding through VLRC (STEP program)
SK – SAIL program for those with VA ≤ 6/45 or fields < 20° and who have had an assessment through one of the LV Clinics
QC – devices free on loan when patient evaluated through an MDC
Other provinces – no or very patchy coverage
EHCO (Eye Health Council of Ontario) report

- Fragmented model for delivery
- Difficult for patient to navigate the system/repetition of visits
- Estimated 23-26 months for typical patient to get all their needs met
- Limited and patchy cover for providers
- Redundancy – repetition of assessment
- Still not enough patients being referred for LV rehab
What is needed?

• Visual rehabilitation should be recognized as a medical necessity similar to other rehabilitation? E.g. stroke, neurological diseases, orthopedic?
• And funded appropriately
• A consistent model across the Province
• Cost effective
What model should we adopt? What is the evidence?

• There is evidence that full MDC LVR is effective (LOVIT)

• No strong evidence that the full MDC is significantly better than solo optometric services or other community services overall

Two or three tier system

- Growing interest in this concept

- Welsh model
  - Local optoms provide LV services (refraction, devices, tints, lighting)
  - Link with community resources → some level of multi-disciplinary support
  - Shown to be as effective as the LOVIT rehab.
  - Patients were seen quicker and more locally

• Australia discussing a similar model.

• Wales and Australia have isolated communities, like Canada

## WHO recommends a 3 tier model

<table>
<thead>
<tr>
<th>Three tiered model</th>
<th>1. Primary Care/Community-based</th>
<th>Referral into appropriate level of LVS</th>
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</thead>
<tbody>
<tr>
<td>Screening, awareness, referral, Primary health/eye care, teachers</td>
<td>2. Secondary Refraction, low vision assessment, prescription of basic LVDs with training Optometrist Ophthalmologist Orthoptist</td>
<td>Estimated that 80% of LV patients can be managed at this level</td>
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<tr>
<td>3. Tertiary Comprehensive LVS, more complex and high-powered LVDs, skills training, MDCs</td>
<td>Optometrist Ophthalmologist Orthoptist Rehabilitation specialists MDCs</td>
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**Level 1: Screening/Recognition of a potential low vision patient.**
All optometrists should be involved at this level.

Patient should be referred to Level 2 OR Level 3 based on patient's vision and their visual demands

**Patient Characteristics:**
- Best corrected VA (better eye or binocular) poorer than 6/12 (20/40)
- Or visual fields <70 degrees (circular diameter or equivalent) or significant central or paracentral scotomas
- Or log CS <1.40
- Or any patient with a measurable visual impairment who has visual disabilities

**Optometrist actions:**
- Knowledge of diagnosis and likelihood of vision impairment
- Refraction
- Visual assessment (VA, central or peripheral visual fields as indicated by diagnosis, contrast sensitivity measurement)
- Determination of patient’s disabilities and goals
- Discussion with patient of low vision intervention and its effectiveness and benefits
- Triage/referral

**Additional equipment required by optometrist:** Standard optometric equipment plus contrast sensitivity charts

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**Level 2: Management of the patient with minimum visual impairment/disability.**

Optometrists may choose to be involved at this level.

**Patient Characteristics:**
- VA between <6/12 (20/40) and 6/21 (20/70)
- and CS between <1.40 and >1.00,
- but with visual fields better than 70° solid angle and no significant or large paracentral scotomas.

**Optometrist actions:**
- Assessment of patient’s disabilities and goals
- Assessment for magnification for near
- Discussion and demonstration of lighting, filters and the built-in accessibility of modern electronic devices
- Discussion of tasks such as TV and driving

**Additional equipment required by optometrist:** Continuous text reading cards (Colenbrander, MNRead, Radner or Lighthouse)
Range of low-powered hand and stand magnifiers, half-eyes
Filters (450, 511, 527) or similar

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**Level 3: Comprehensive low vision rehabilitation for patients with more vision loss and greater disabilities.**

Optometrists may choose to be involved at this level.

**Patient Characteristics:**
- VA <6/21 (20/70 )
- or visual fields <70° diameter
- or CS <1.00
- or some combination that results in an equivalent impairment

**Optometrist actions:**
- Full service low vision rehabilitation, in multi-disciplinary clinic or in close collaboration and communication with low vision therapists
- Full range of optical magnifiers, telescopes and telemicroscopes, filters
- Electronic magnification
- Fresnel prisms for Peli or sector prisms

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Leat SJ, Optom Vis Sci. 2016, 93(1) 77-84
• This model is similar to the Canadian SmartSight model for ophthalmology.

• Basic concept adopted by EHCO

Level 1. Absolute minimum

- Recognise
- Assess
- Goal setting
- Attempt a higher add (up to 4D)
- Refer
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• Level 2. What can be done at this level?
  • higher reading additions, prism half eyes and/or basic hand and stand magnifiers
    • 68% of primary aids were simple aids
    • 57% of patients to a LVC in Wales required only simple devices
    • 72% needed magnification of 4x or less
  • discussion of issues such as loss of driving license
  • accessibility functions of computers, tablets and other electronic devices
  • demonstration of lighting and advice about use of light at home
  • demonstration of commonly preferred filters for glare

Leat and Rumney (1990) Ophthal Physiol Opt 10, 8-15
• Still access other resources as necessary
• Additional factors that may require involvement/referral to other resources at Level 2.
  • E.g. person with falls risk, person who wishes to continue driving, employment or academic issues
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# Level 3 – comprehensive LV rehabilitation

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<th>3rd option</th>
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<td>ODs/MDs, vision therapists, OTs, opticians, O&amp;M trainers, hi-tech assessment specialists, counsellors work together in the same location and time. Create rehabilitation plan, assess for and prescribe devices, address environmental concerns, undertake training, including sight substitution. Full range service.</td>
<td>A smaller combination of professionals work together e.g. OD/MD with vision therapist. Assessments are undertaken in collaboration. Other assessments planned as required.</td>
<td>OD/MD provides initial assessment (refraction, VA, CS, fields) and provision of devices, prisms, training with devices and EV assessment, and advice (lighting). Refer to other VR professionals and support groups. Patient may enter VR through another professional. Request report from OD/MD and refer for devices. Reports and communication are VITAL.</td>
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• MDCs (IDCs) are the ideal for those with more severe vision loss and for urban centres

• But not all patients may require these services

• Or be able to travel to them

• Accounts for Canada’s geographic size and sparse population in some regions

• This multi-level model is cost-effective
• Work towards improving our model of delivery
• More consistent model the basis of policy decisions, education and collaboration.
• Requirement for this model to work
  • Consistent funding for low vision assessment, rehab and devices
• Communicate