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- Board Certified Nurse Practitioner Veterans Health Administration
- Senior Faculty Fitzgerald Health Education Associates
- Veterans Administration and Department of Defense Clinical Practice Guidelines for Stroke Rehabilitation Workgroup
- Montana State Stroke Workgroup
- Board member American Association of Nurse Practitioners
- National VA APRN Council
- Advisory board for Carelinx by Sharecare
- Advisory board for Purdue University Global
- Recognized for work in stroke from the floor of the U.S. Senate

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Objectives

At the end of this presentation, the participant will be able to:

1. Synthesize stroke care and aftercare challenges facing patients, families, healthcare providers and communities.
2. Identify key enabling factors and barriers to successful stroke rehabilitation and recovery.
3. Conceptualize key community resources and different levels of stroke rehabilitation and aftercare.

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3

Stroke Care Challenges

Enabling Recovery

Barriers to Recovery

Care Expectations

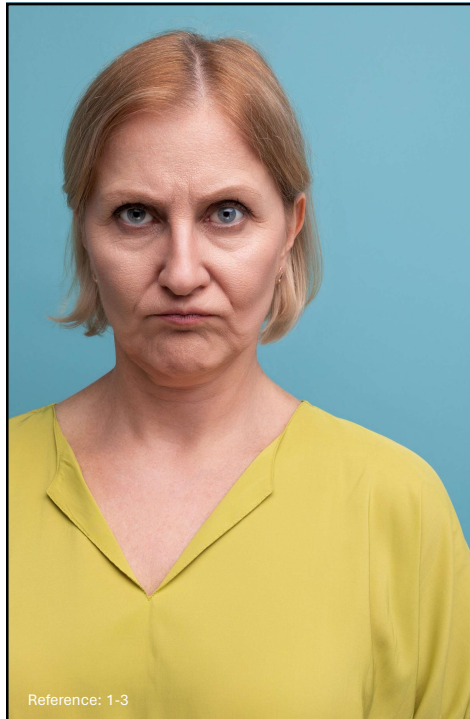
Implications on Practice

Types of Rehab Facilities

Tools

Stroke Showdown

4



Reference: 1-3

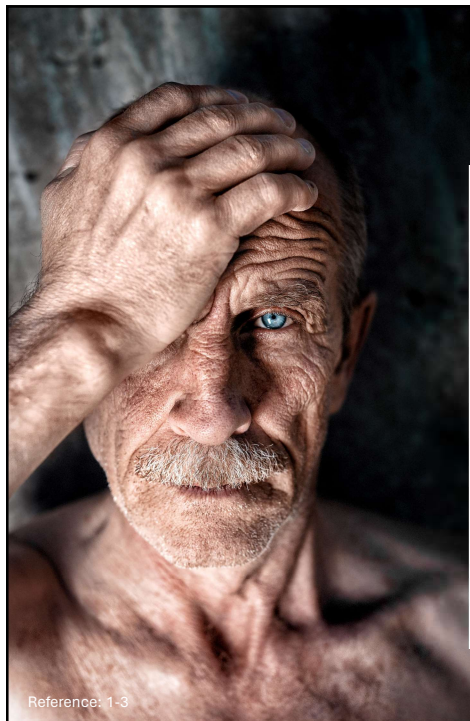
Stroke care challenges

763 stroke patients
28 acute care hospitals across the U.S.

35%
**NO PHYSICAL
THERAPY**

5

5



Reference: 1-3

Stroke care challenges

763 stroke patients
28 acute care hospitals across the U.S.

48%
**NO OCCUPATIONAL
THERAPY**

6

6



Reference: 1-3

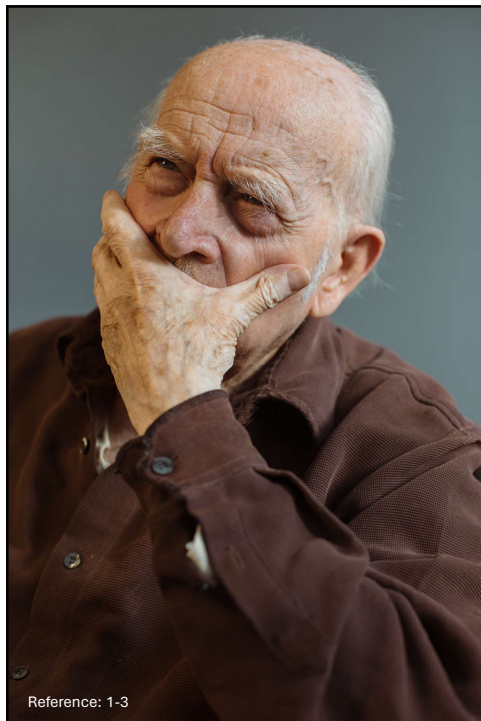
Stroke care challenges

763 stroke patients
28 acute care hospitals across the U.S.

61%
**NO SPEECH
THERAPY**

7

7



Reference: 1-3

Stroke care challenges

13,550 Medicare patient records

>30%
**NO POST-ACUTE
REHABILITATION
IN FIRST 30 DAYS**

8

8



Reference: 1-3

Stroke care challenges

24,413 Medicare patient records:

59%
DID NOT SEE PT OR OT
IN FIRST 30 DAYS
AFTER DISCHARGE

9

9



Reference: 4-5


Stroke care challenges

2/3

of stroke patients do not recover the necessary upper extremity function for usual activities by 6 months when motor function plateaus

10

10



Stroke care challenges


55%

of stroke patients need additional inpatient care after acute hospital stay to maximize recovery and return home

Reference: 6

11

11



Stroke care challenges

Health disparities among stroke patients

- Increased morbidity and mortality
- Increased risk of long-term institutionalization

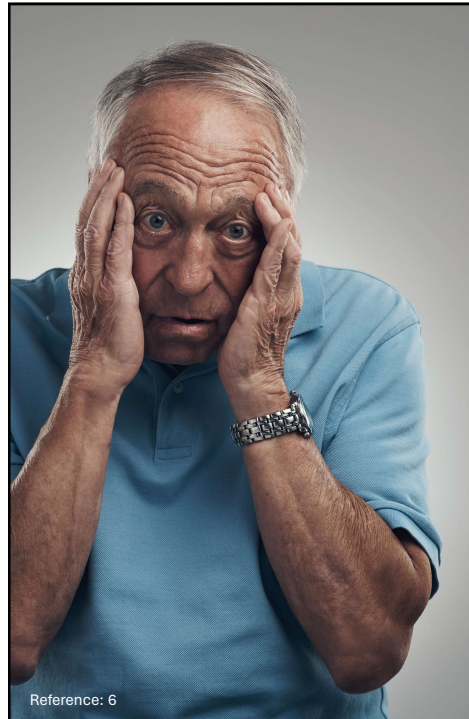
Top reasons for readmission

- Recurrent stroke (65% within 12 months)
- Falls
- Aspiration and Pneumonia
- Urinary Tract Infections

Reference: 6

12

12



Reference: 6

Stroke care challenges

Declined function among stroke patients

- Poor balance
- Visual deficits and disturbances
- Swallowing difficulties
- Incontinence
- Mobility issues
- Cognitive impairment (40%)
- Psychological/behavioral disorders

13

13



Reference: 6

Stroke care challenges

Factors related to poor discharge planning


- Lack of collaboration among team
- Time constraints
- Lack of beds and resources
- Lack of readiness of patients and family to actively participate in recovery

Average
length of
stay for
ischemic
stroke

**5.22
DAYS**

14

14



Stroke care challenges

Shorter average length of stay

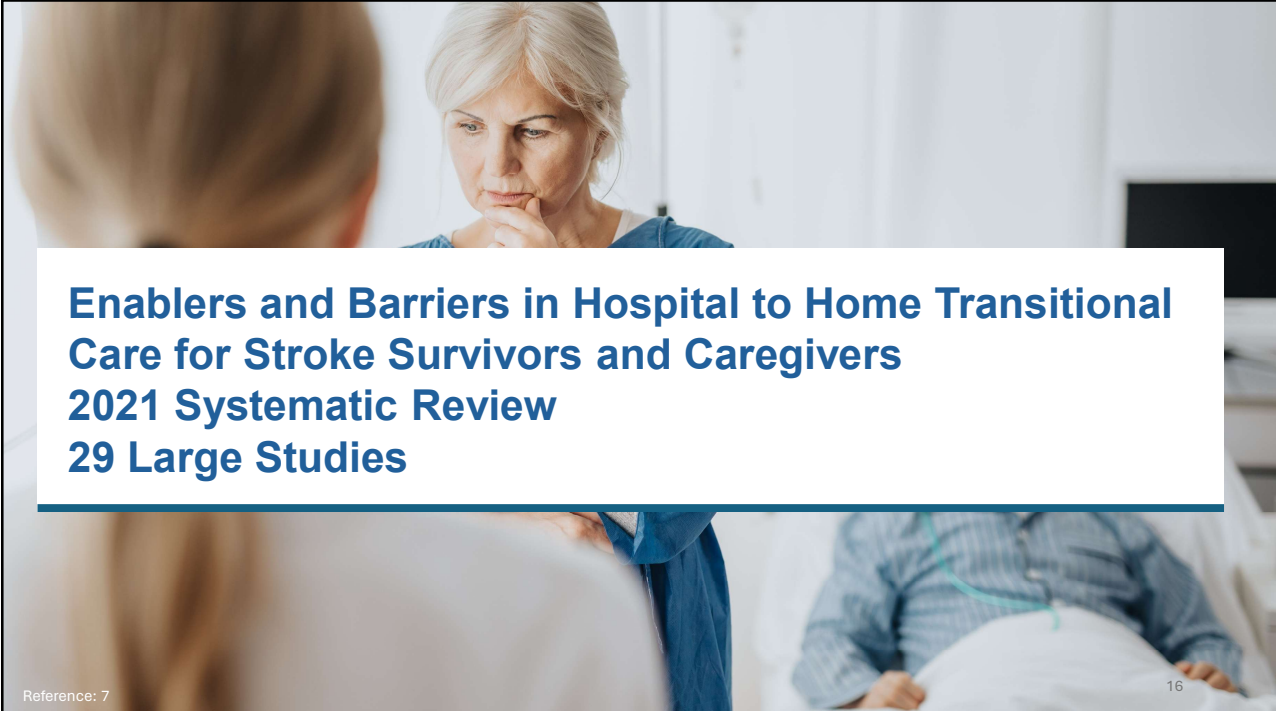
- Reduces hospital costs
- Increases capacity optimization
- Improves hospital efficiency

Longer average length of stay

- Reduces readmission rates
- Reduces mortality rates
- Reduces complications
- Improves functional outcomes

Reference: 6 15

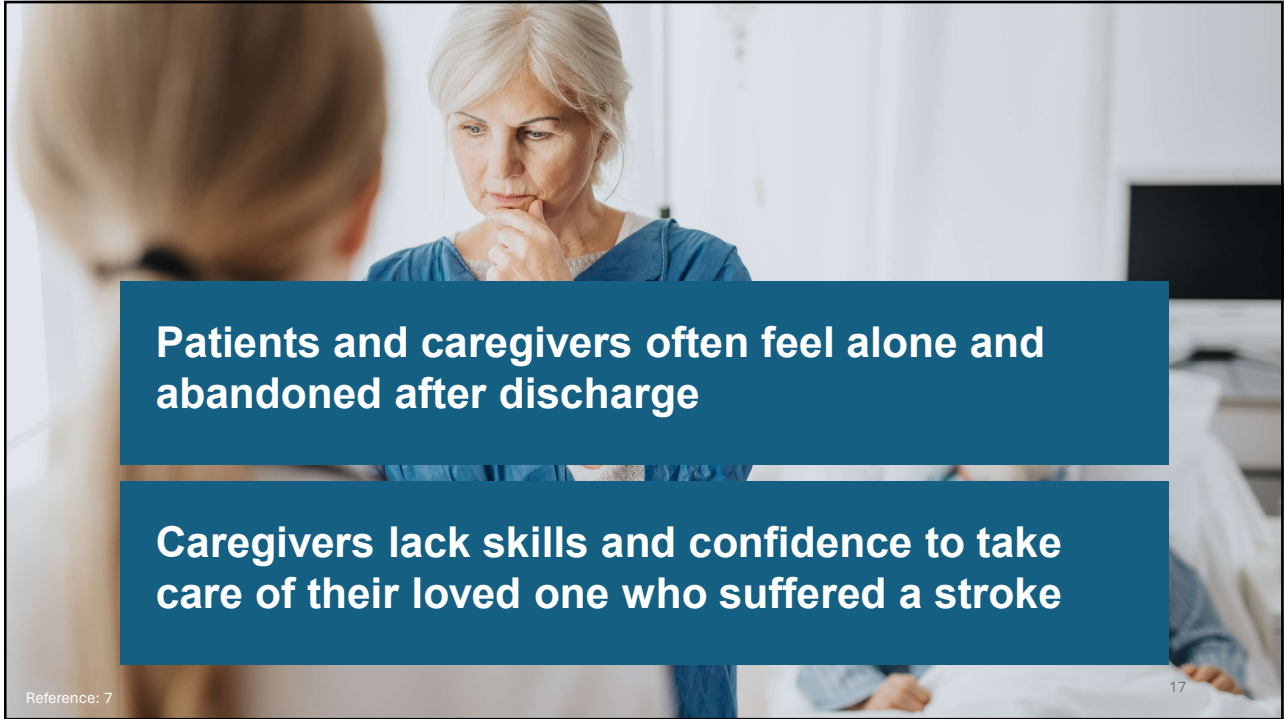
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Enablers and Barriers in Hospital to Home Transitional Care for Stroke Survivors and Caregivers
2021 Systematic Review
29 Large Studies

Reference: 7 16

16



17



18



Reference: 7

Factors enabling recovery

Three key enabling factors

- Partnership approach
- Being prepared to navigate health and social care services
- Developing self-management skills and capabilities

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19



Reference: 7

Factors enabling recovery

Partnership approach to care

- Engaging patient and family in goal setting and decision-making
- Family centered approach
- Skills practice before discharge
 - Build confidence
 - Confirm skill attainment
 - Identify questions, concerns and issues before going home

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Reference: 8-11

Factors enabling recovery

Partnership approach to care

- Individualized information
 - Verbal explanation
 - Written material
- Promote dignity and respect
- Compassion and Sensitivity
- The three A's to care
 - Approachable
 - Accessible
 - Available

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21



Reference: 8-11

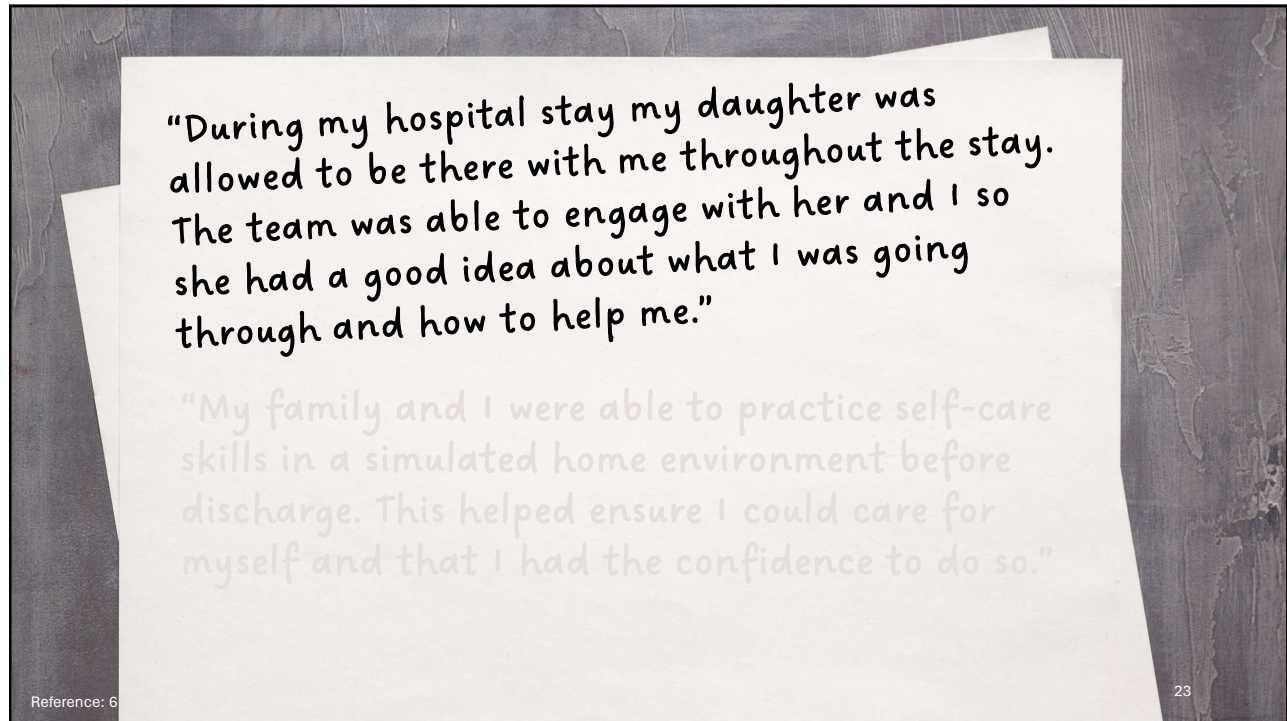
Factors enabling recovery

Partnership approach to care

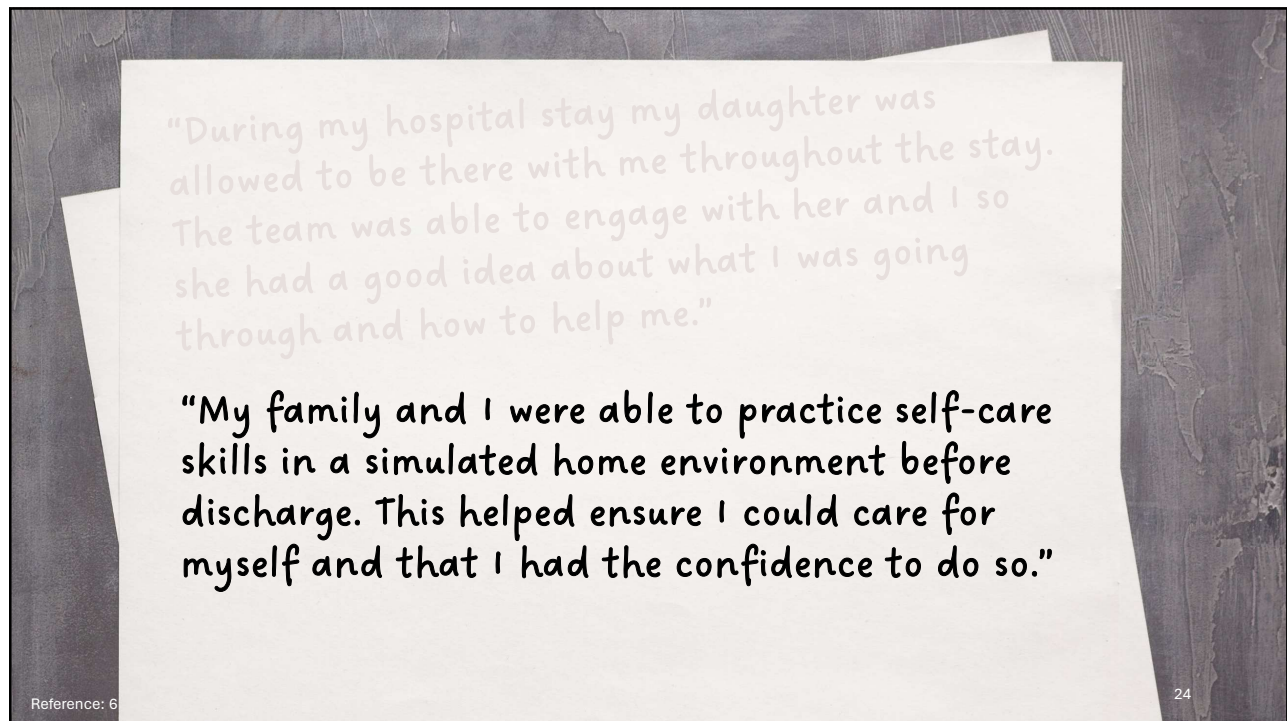
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- The three A's to care
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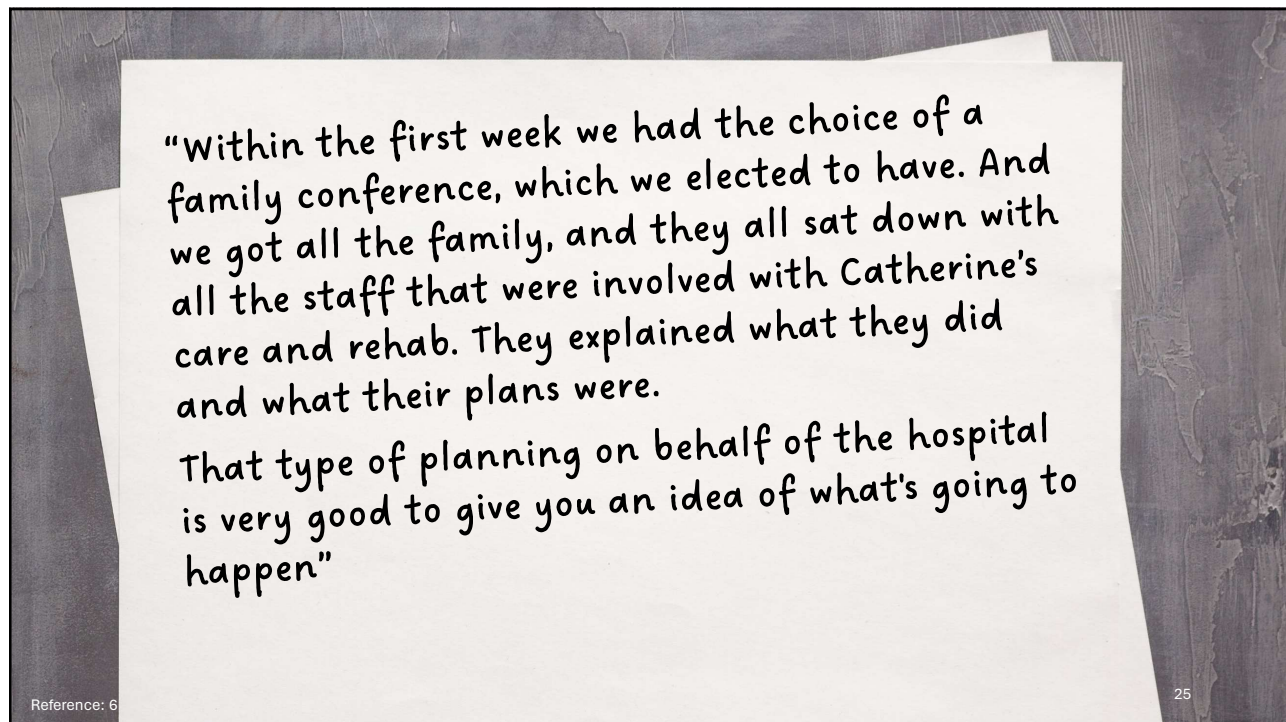
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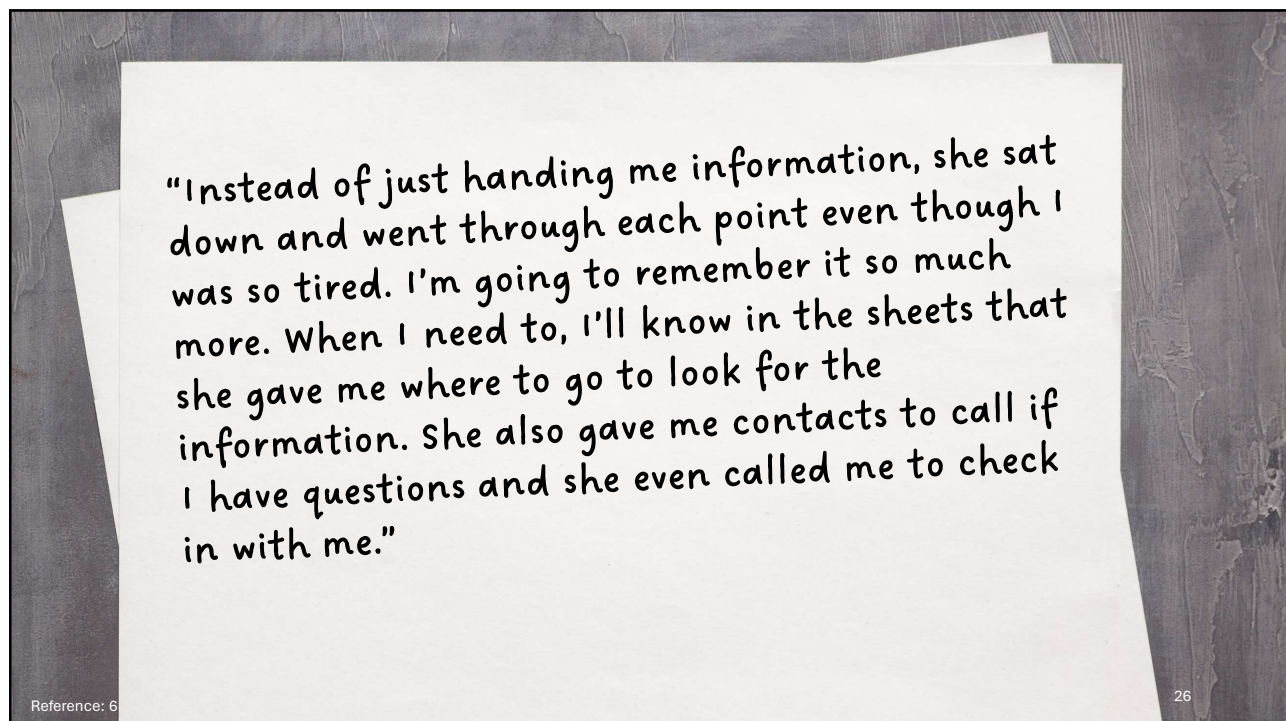
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Reference: 8-11

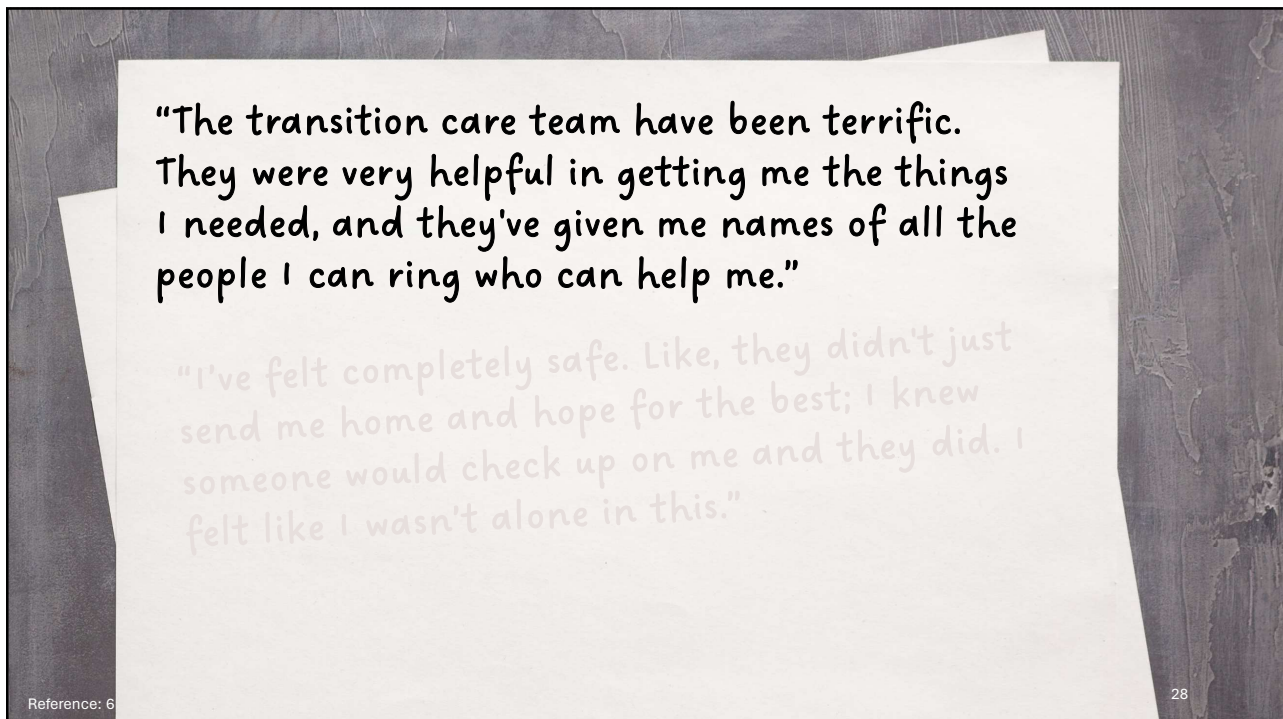
Factors enabling recovery

Being prepared to navigate health and social care services

- Competency and confidence built by the healthcare team
- Sense of safety reinforced with continuity of post-discharge follow-up services
- Maintain recovery momentum
 - Discharge services
 - Community rehabilitation
 - Social care services

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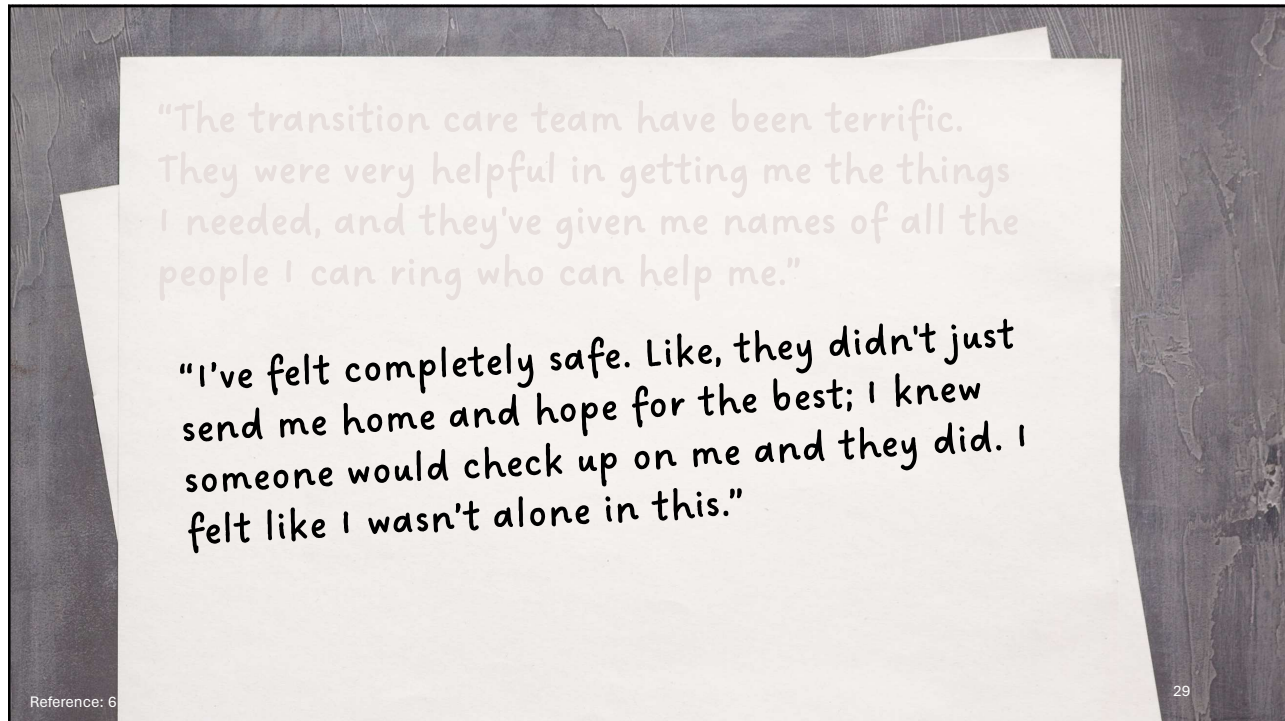
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Reference: 6

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Factors enabling recovery

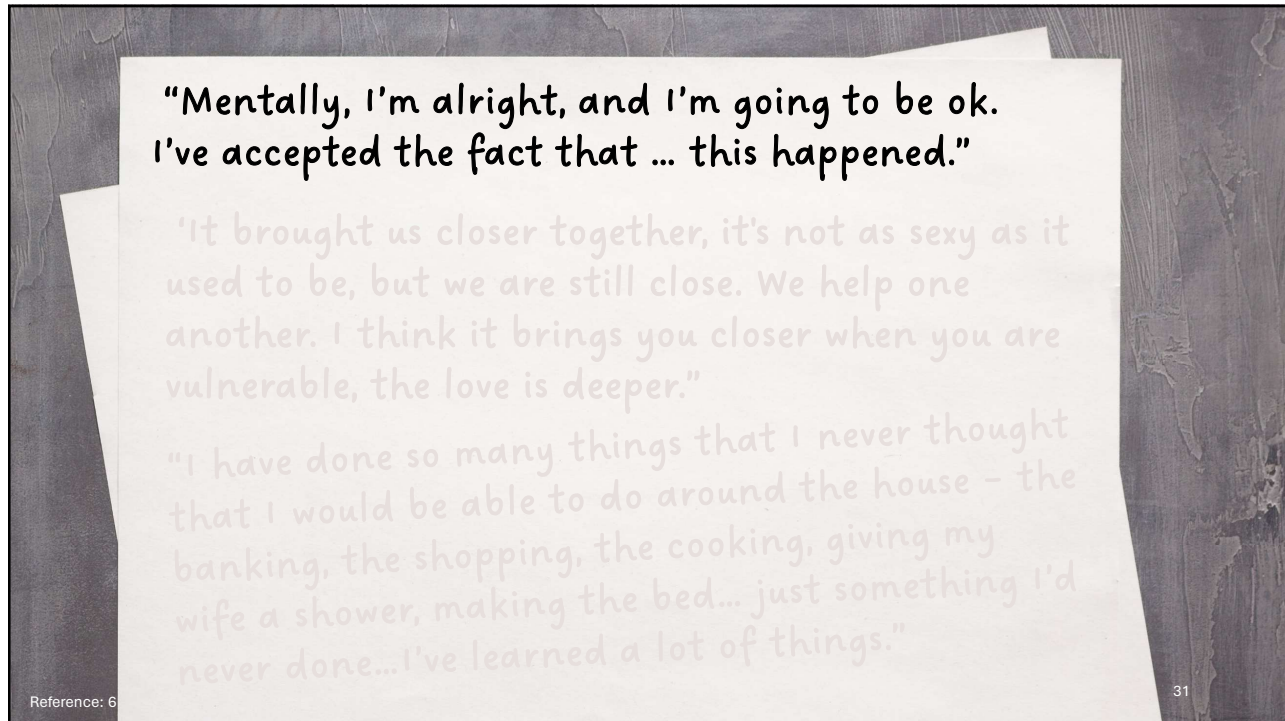
Developing self-management skills

- Positive thoughts
 - Realize condition was more manageable than thought
- Positive self-appraisal of functional improvement
 - Develop confidence
 - Realistic goals and expectations
 - Recovery takes time
 - Accepting reality of stroke
- Self-efficacy
 - Built on mastery over caregiving and self-management activities

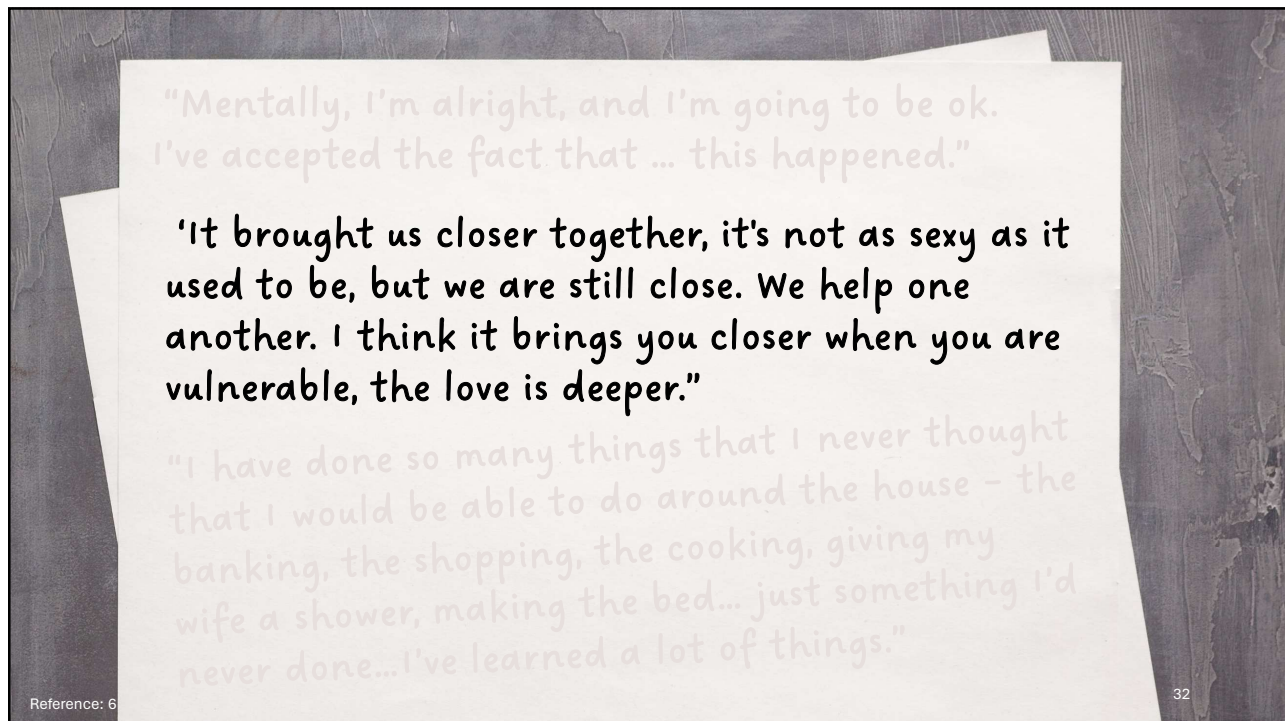
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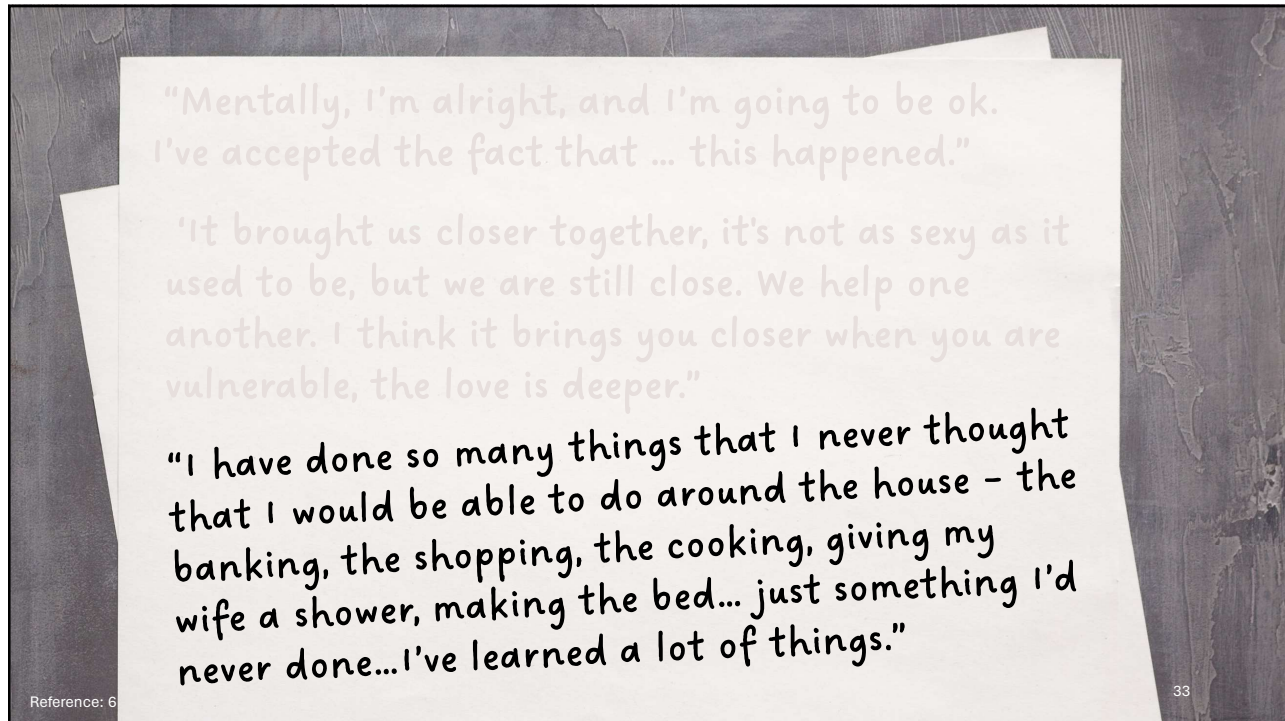
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Barriers to recovery

Three barriers

- Gaps in discharge planning
- Factors affecting self-care
- Inability to cope with challenges

Reference: 12 34

34



Reference: 9, 10, 12

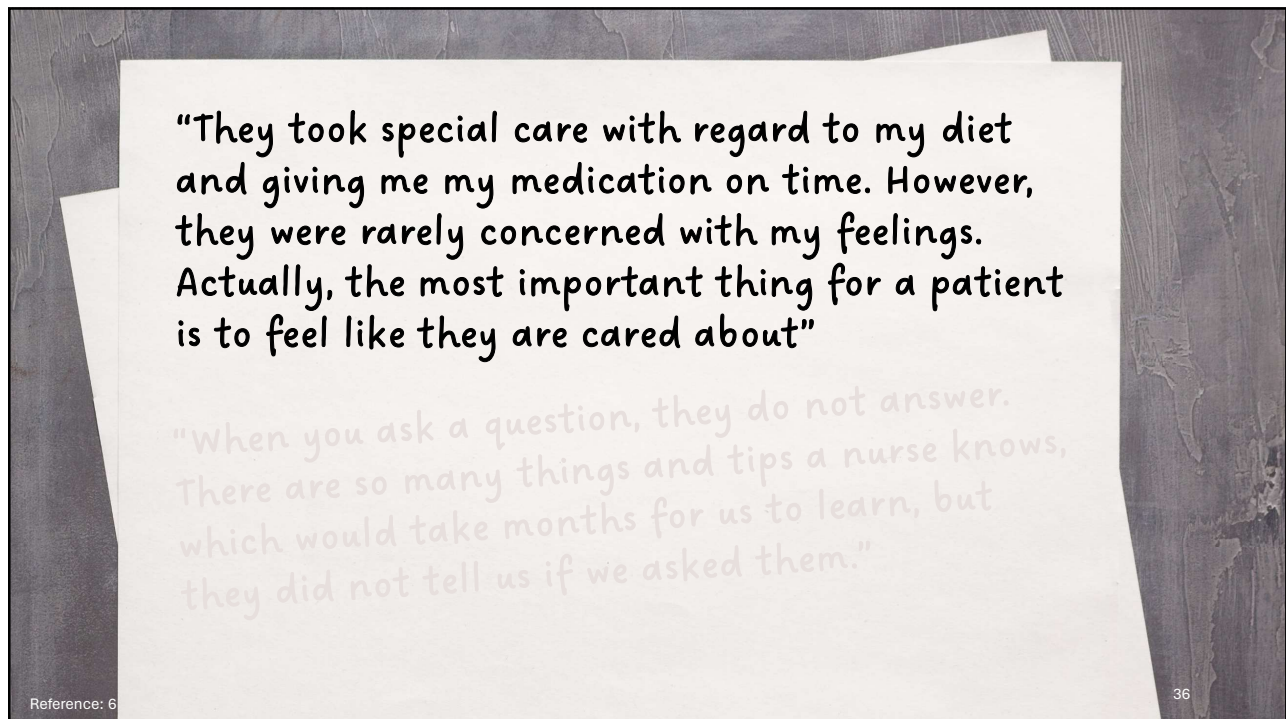
Barriers to recovery

Gaps in discharge planning

- Discrepancies in discharge priorities between patients, families and health professionals
- Lack of compassion from clinicians
- Care more about physical needs than emotional needs
- Discharged home with unanswered questions and concerns
- Lack of hands-on training in daily personal care activities

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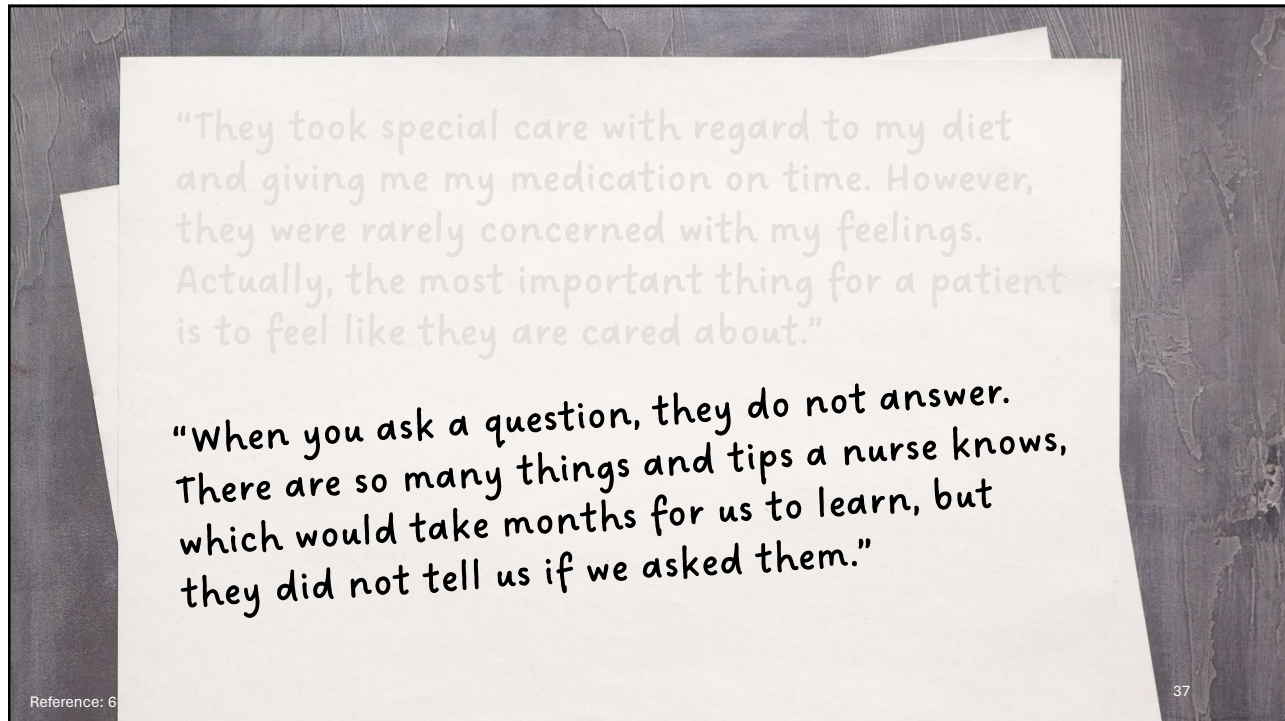
"They took special care with regard to my diet and giving me my medication on time. However, they were rarely concerned with my feelings. Actually, the most important thing for a patient is to feel like they are cared about"

"When you ask a question, they do not answer. There are so many things and tips a nurse knows, which would take months for us to learn, but they did not tell us if we asked them."

Reference: 6

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Barriers to recovery

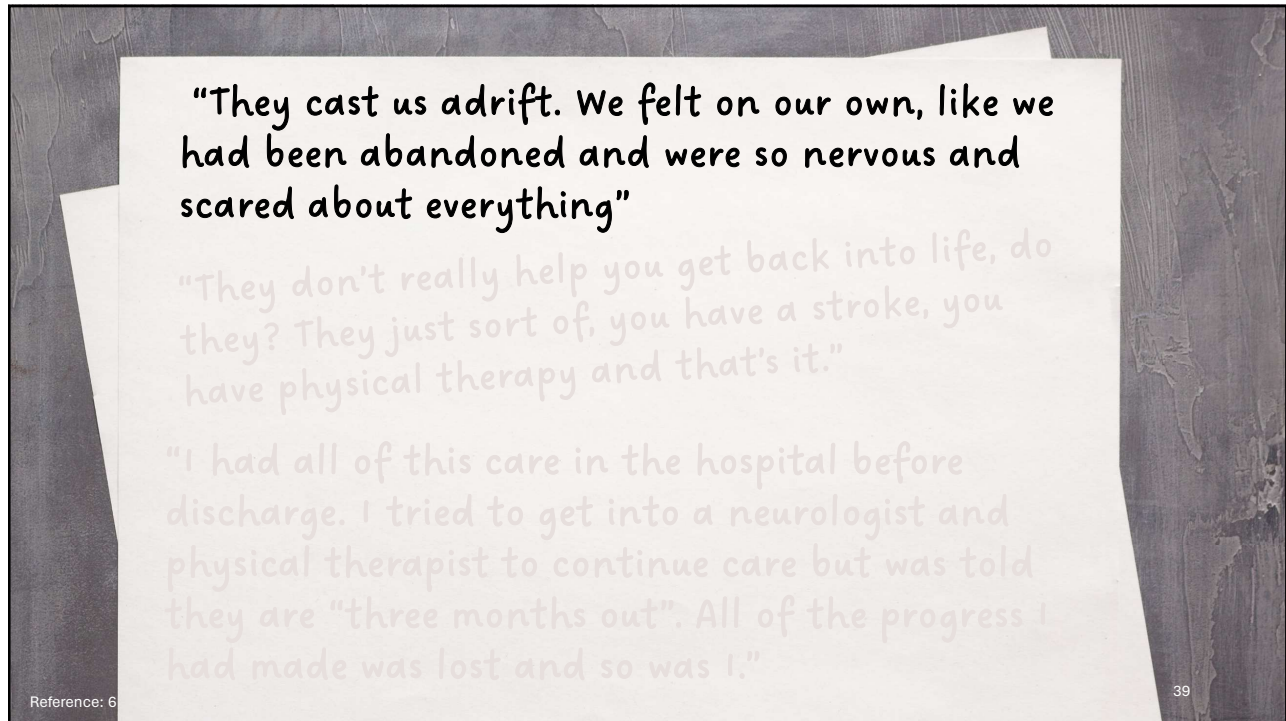
Factors affecting self-care

- Home is not the hospital
- Rely on caregivers to maintain activities of daily living
- Lack of caregiver training
- Inadequate community support
- Lack of follow-up jeopardized continued rehabilitation
- Long wait times for outpatient care
- Caregivers being taken for granted
- Financial constraints

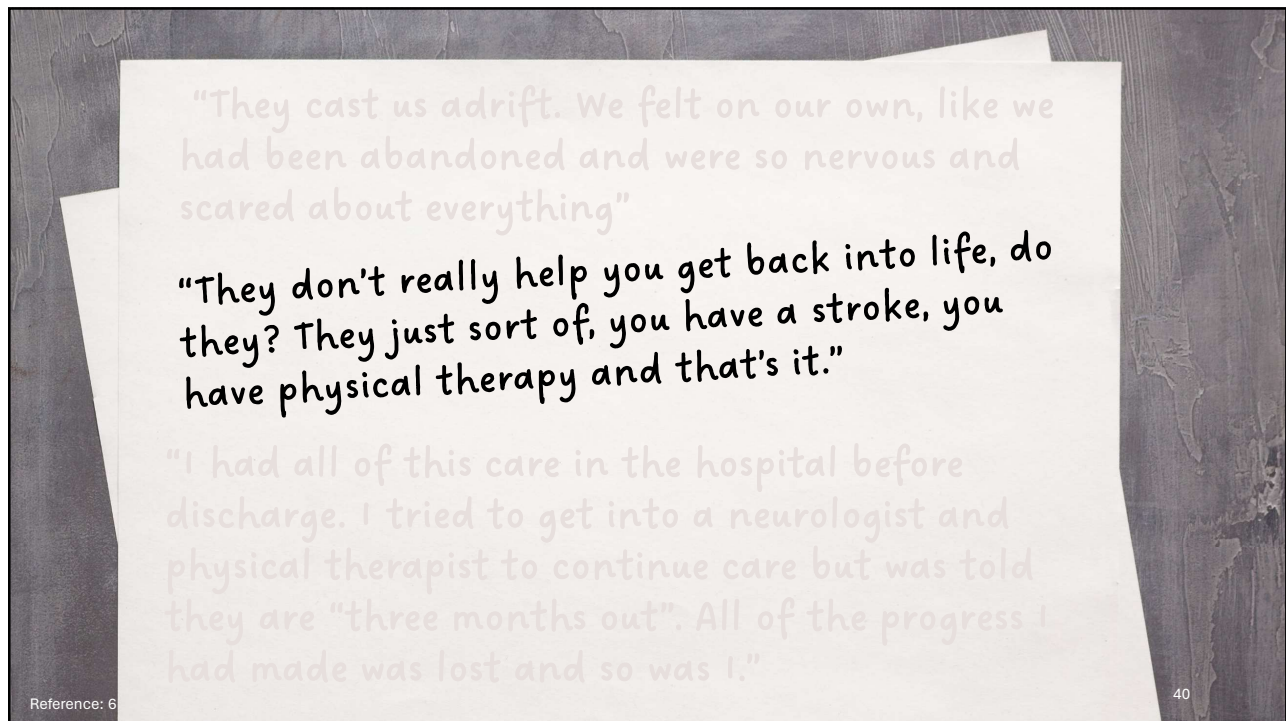
Reference: 11, 13

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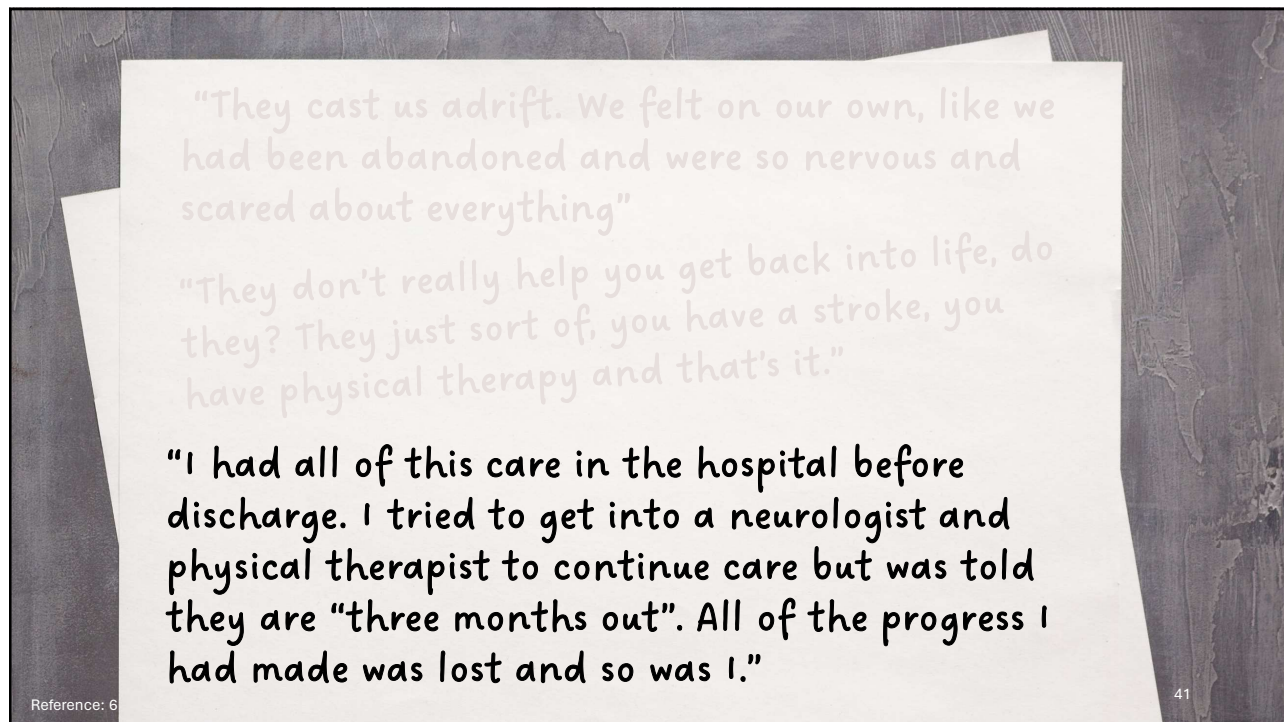
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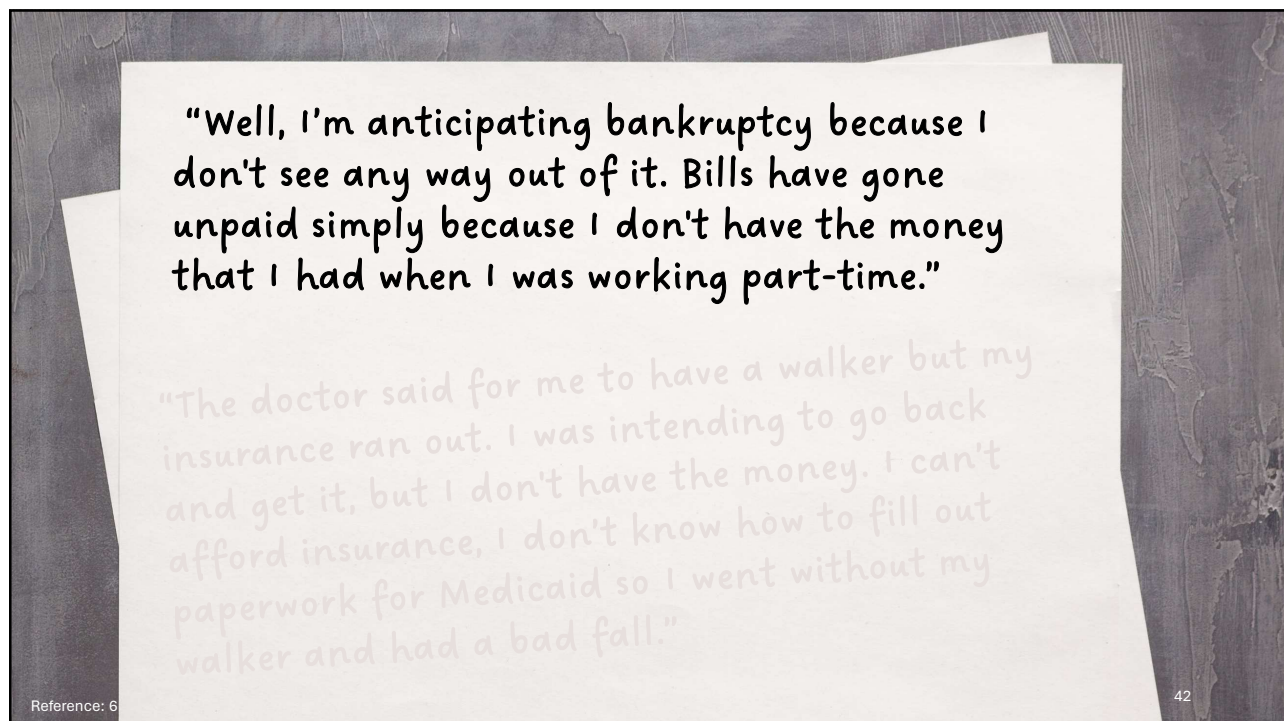
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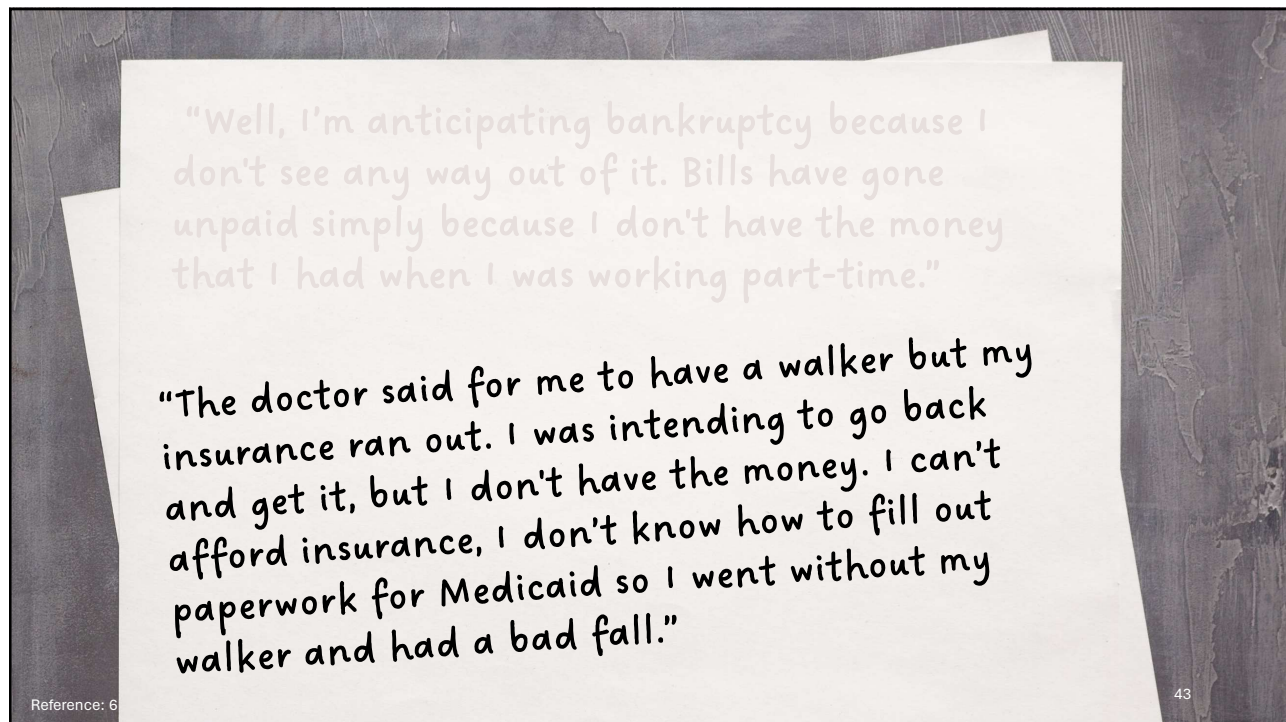
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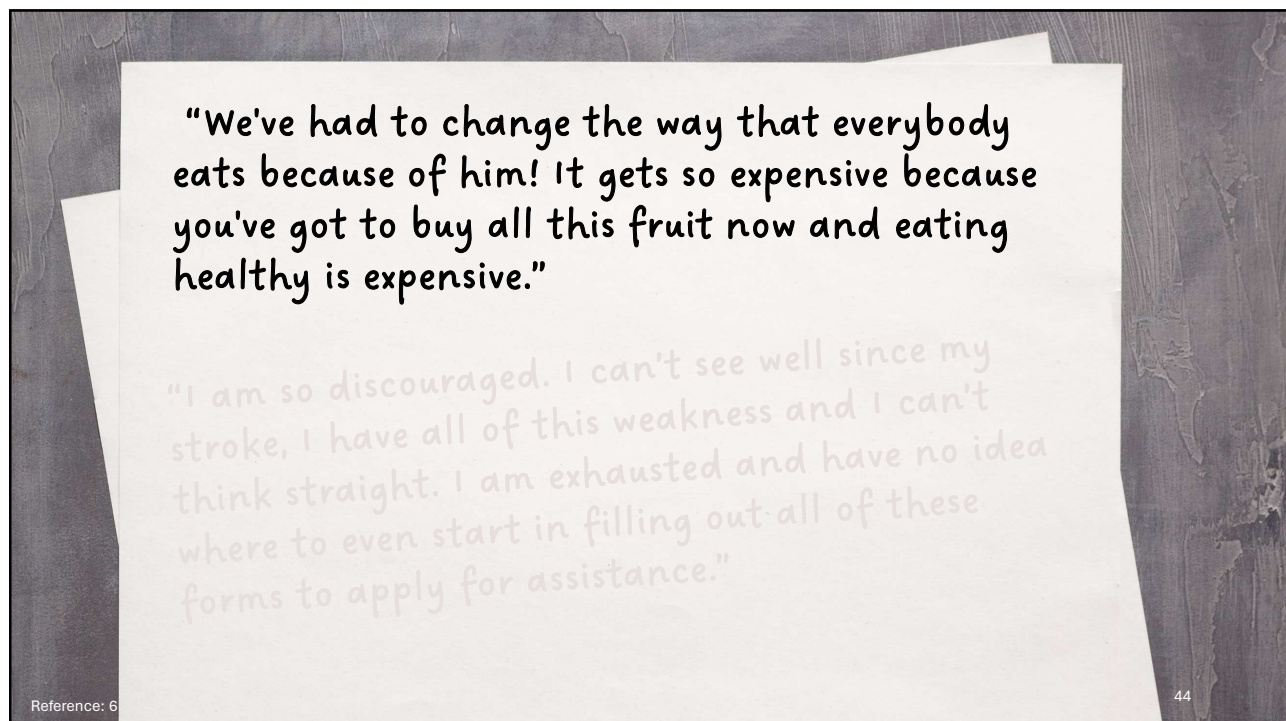
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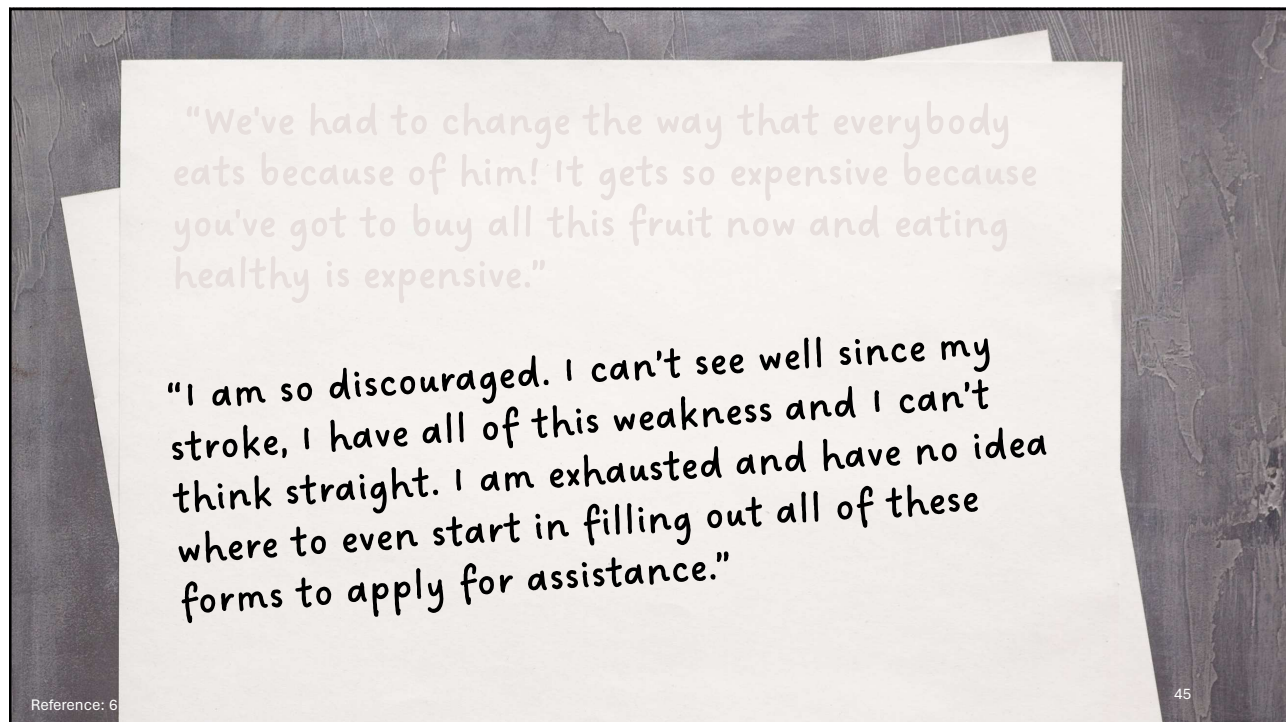
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Barriers to recovery

Inability to cope with challenges

- Acceptance of poststroke physical, cognitive and emotional impairments impacts recovery
- Perceive themselves as a stranger
- Difficulties adjusting to disability
- See themselves as a "burden"
- Social disengagement and isolation
- Caregivers struggle to adapt to role
- Caregivers increased responsibilities
- Caregiver isolation and burn-out

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Reference: 11, 14

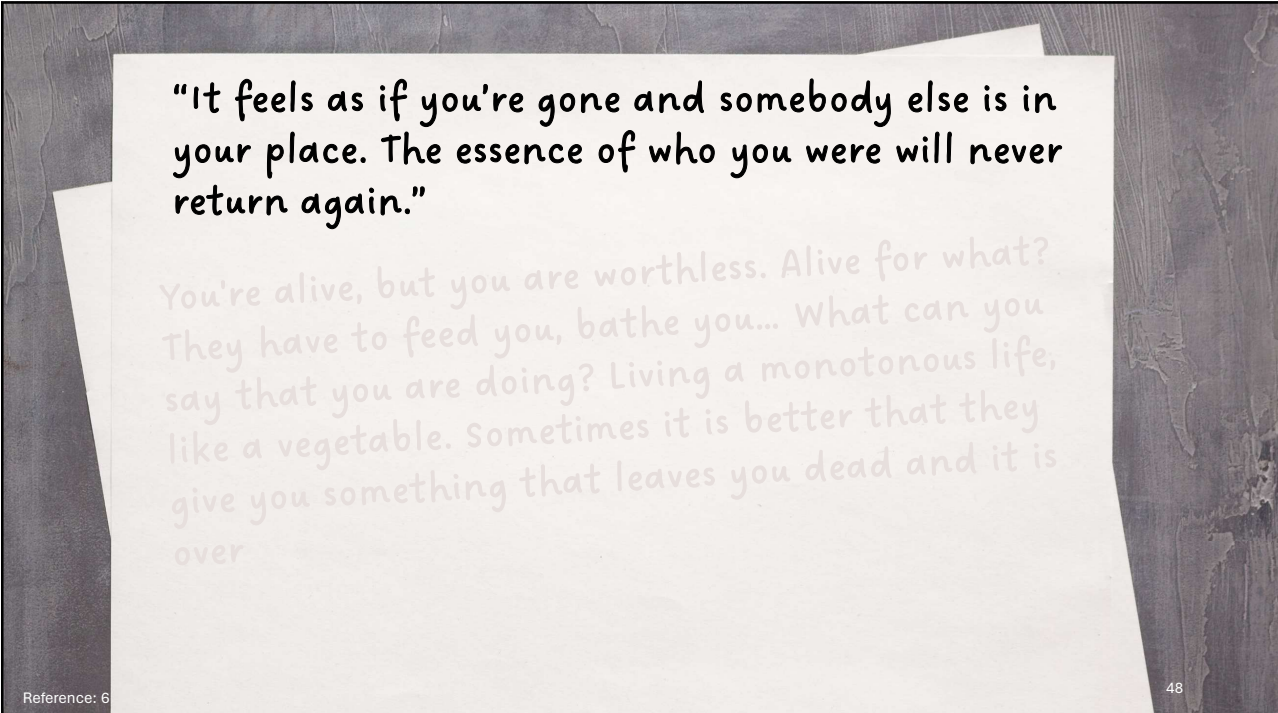
Barriers to recovery

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- Long wait times for outpatient care
- Caregivers being taken for granted
- Financial constraints

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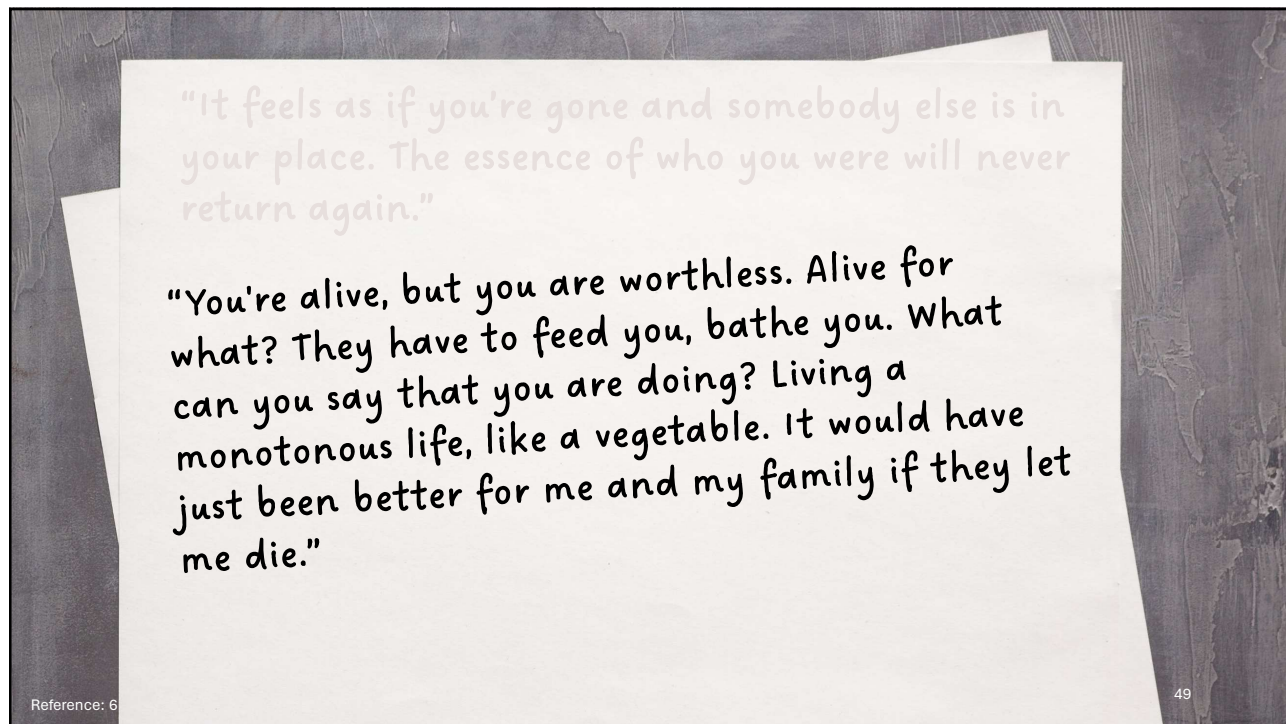
"It feels as if you're gone and somebody else is in your place. The essence of who you were will never return again."

You're alive, but you are worthless. Alive for what? They have to feed you, bathe you... What can you say that you are doing? Living a monotonous life, like a vegetable. Sometimes it is better that they give you something that leaves you dead and it is over

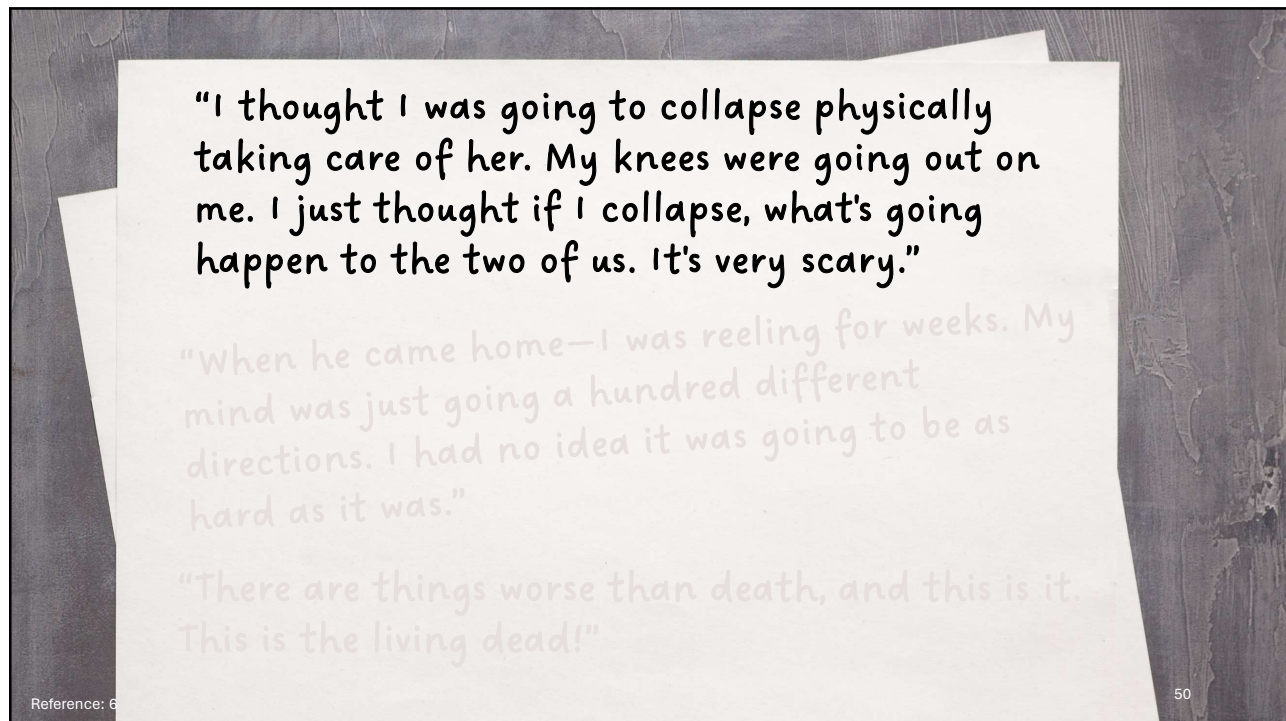
Reference: 6

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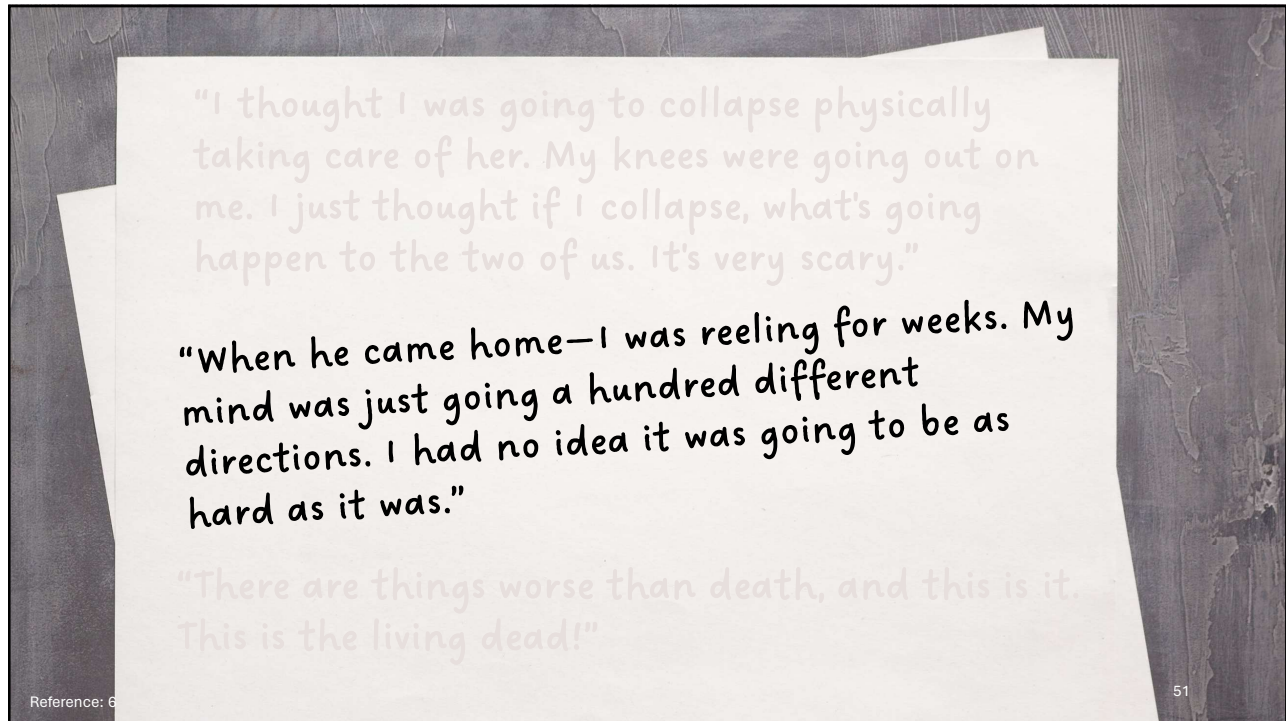
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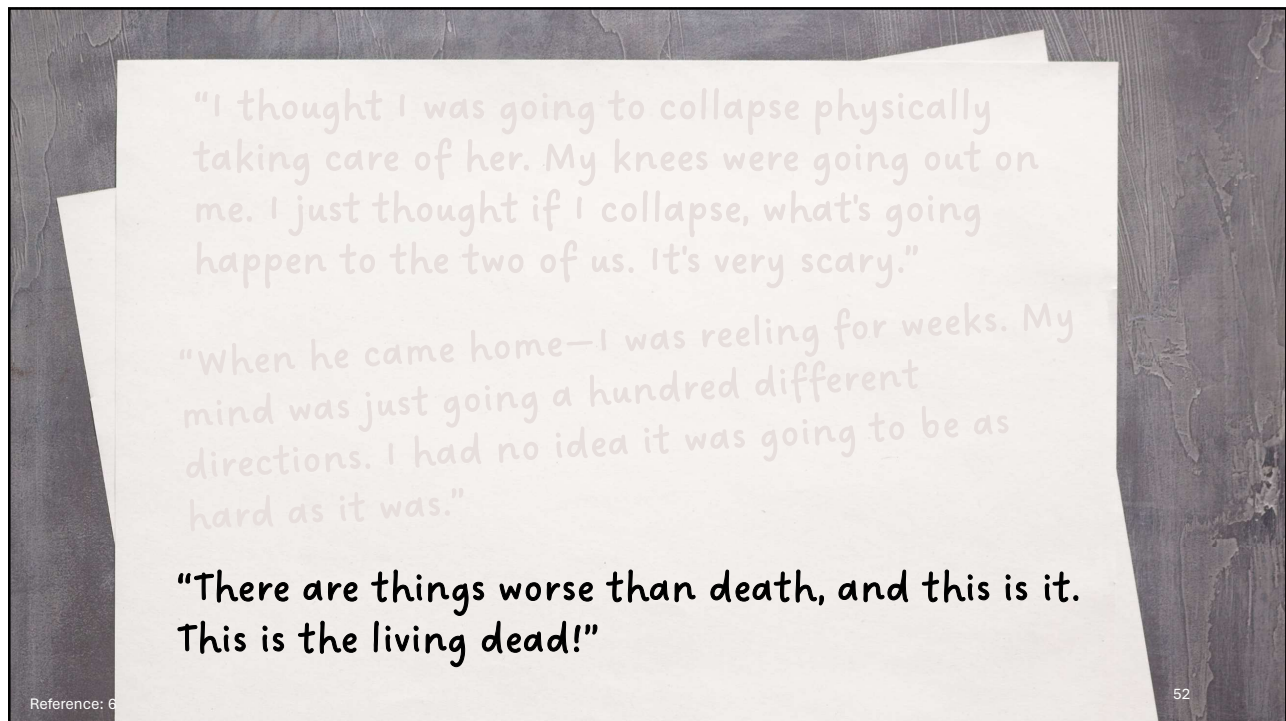
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Reference: 15

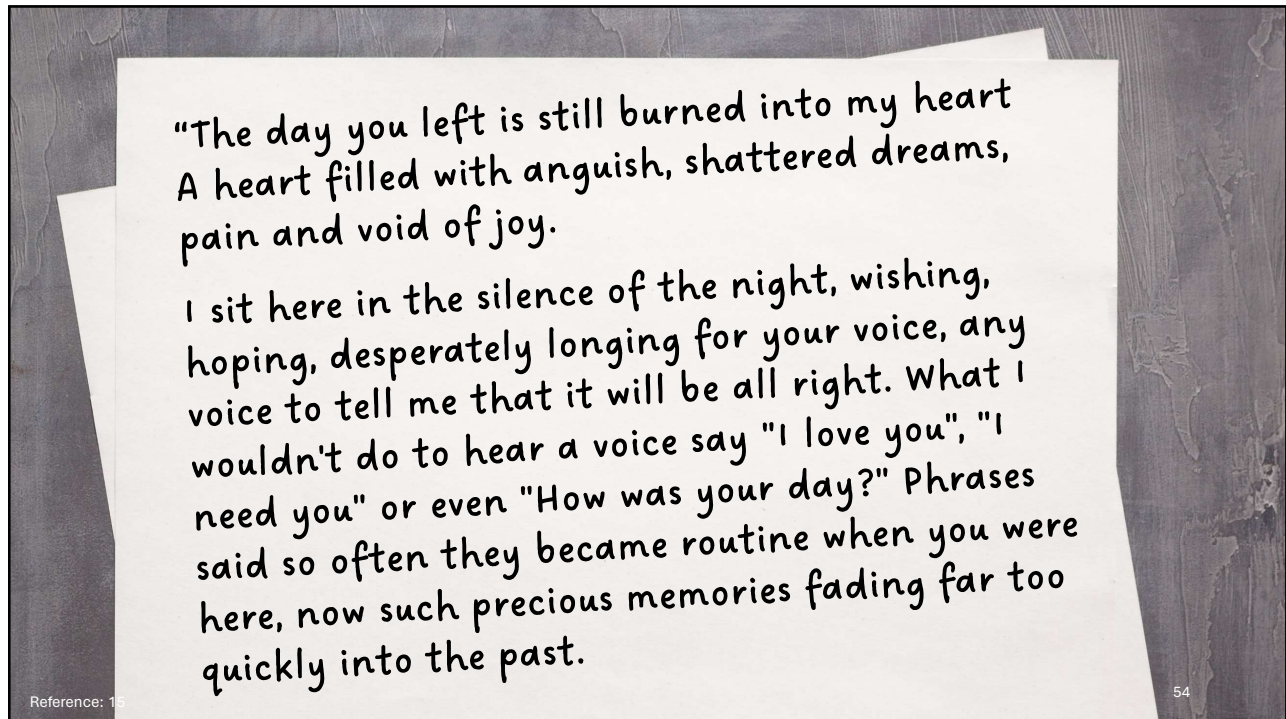
Barriers to recovery

Impact on family members of loved ones who die from stroke

- Severe anguish and grief
- At risk for prolonged grief disorder
- Social disengagement and isolation
- Reset of social norms
- Financial insecurity
- Limited support and resources
- Risk for suicidal ideology
 - Older adult males have highest rate of completed suicide

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Reference: 15

54

54

Nothing but silence and maddening stillness remain. Our life, like distant memories is plastered across these lonely walls that surround me in silence.

Who do I run to, look for and share my life with now that you're gone? Of course, there is God, and my faith remains strong but how does God become tangible I ask? How do I rest my head in his arms listening to him tell me that things will work out?

Reference: 15

55

55

When was the last time someone touched me, not in a sensual way but in any way? Like a leper I have become. No doubt God would touch me and give me a hug but he has no hands.

Well intentioned friends always say "we are here if you need anything". Of course I need something, now that you're gone I need everything.

Reference: 15

56

56

Are those friends really here or are they there?
They're in their own lives with their own priorities,
challenges, needs and wants with little time or
patience for the widowed. No friend could
replace you nor would I want or expect them to.

Every breath I take, every moment that passes by
I see my life as it was and now as it is both
fading further and further into obscurity, fading
into these walls that have become my new lover,
soul mate and friend.

Reference: 15

57

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No one to share my life nor my love with but
these damn walls that surround me.

My mundane and meaningless life without you
repeats itself day after day, just the walls and I.

One day after the slog of my life is finally
finished - I shall die as I have lived after you
left - alone. After my last, my very last and
final breath only these horrible, lonely,
maddening, dark and dreary walls will remain."

Reference: 15

58

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Reference: 16-17

Expectations of care

- Ensure skills are set before home
- Education starts when stroke strikes
- Compassionate and holistic care
- Central point of contact is vital
- Regular “Check-ins”
- Home safety evaluation before D/C
- Services and benefits assistance
- Timely following with therapy, neurology and primary care services
- Community support groups
- Mental health and social services

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Reference: 16-17

Impact on clinical practice

- Protocols and clinical guidelines need to be generated and utilized
- Nurses, therapists and stroke coordinators ideal to lead programs
- Stroke coordinators are more than number crunchers to maintain certification
- Hospitals and health systems need to invest financial and tangible resources into transition programs
- Utilize telehealth for equitable care in rural and remote areas

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Types of stroke aftercare facilities

Element	Inpatient Rehab Facility	Long-term Acute Care Hospital	Skilled Nursing Facility	Home Care
Description	Gold Standard of Care Most intensive rehab 25% of Stroke Patients	Focus on Medical and Nursing Care and Rehab	Skilled Nursing services Stay longer than 32 days	Rehab and Nursing services at home MD, DO, NP orders
Ideal patients	Significant neurological deficits Moderate medical management needs Medically stable Strong enough to participate in 3 hours or more of therapy 5 days/wk Average LOS: 2 weeks 70% of patients are well enough to go home	Complex health needs Ventilators, wounds, dialysis, IV therapy, tracheostomy care Rehab based on patient tolerance	Need rehab but are not able to complete 3 hours/day 5 days per week Medical and nursing needs can be met with medical/nursing resources	Cannot leave home readily due to physical or mental incapacity or lack of transportation

Reference: 6

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Types of stroke aftercare facilities

Element	Inpatient Rehab Facility	Long-term Acute Care Hospital	Skilled Nursing Facility	Home Care
Team	Physiatrist (Team lead) Rehabilitation Nurse Social Worker Physical Therapist Occupational Therapist Speech Therapist Mental Health Provider	Internist (Team lead) Physiatrist (Consult) Registered Nurses Social Worker Physical Therapist Occupation Therapist Speech Therapist	Physician or Nurse Practitioner as Medical Director Registered Nurses Licensed Practical Nurses Certified Nursing Assistants PT, OT, ST	MD, DO. NP refers and writes ongoing orders Registered Nurse Licensed Practical Nurse Certified Nursing Assistant PT, OT, ST
Focus	Medical management, Bowel/bladder function, Skin integrity, Nutrition, Mobility and self care, Cognition, Pain and spasticity, Adjustment, Orthotics, Discharge, Family Support/Education	Medical management, Cognition and communication, Skin integrity, Nutrition, Wound care, Pain and Spasticity, DME Orthotics, Funding for care needs, Family Support/Education	Skin integrity, Nutrition, Medication administration, Pain and Spasticity, Bowel and Bladder, Mental health, Discharge planning, DME Orthotics, Family Support/Education	Skin Integrity, Bowel and Bladder, Medication administration, Mobility and self-care, Pain and Spasticity, Nutrition, DME orthotics, Family Support/Education

Reference: 6

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Types of stroke aftercare facilities

Element	Inpatient Rehab Facility	Long-term Acute Care Hospital	Skilled Nursing Facility	Home Care
Regulatory requirements	<p>Medicare required</p> <p>physiatrist approve each patient for IRF admission</p> <p>Patient complete at least 3 hours per day, 5 days per week of PT, OT, Speech therapy, Orthotic and prosthetic services</p> <p>Physiatrist must visit patient 3 times per week to provider treatment and ensure progression</p>	<p>Medicare LOS must be greater than 25 days on average</p> <p>3-day intensive care unit LOS or 96 hours of mechanical ventilation on a respirator</p> <p>No requirement for rehab hours at this level</p>	<p>MD, DO or NP can be medical director</p> <p>RN required to be onsite 8 hours a day, 7 days per week</p> <p>Medical director visit every 30 days for 1st 3 months then every 60 days</p> <p>3-day qualifying hospital stay within 30 preceding days</p> <p>Daily skilled services</p>	<p>Certified as homebound</p> <p>PT, OT, ST 1-3 times per week</p> <p>RN visits 1-7 times per week for wound care, medication management, bowel and bladder function</p> <p>Medicare: Maximum 60 days for homecare</p> <p>Usually few weeks after hospitalization</p>

Reference: 6

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Reference: 6

Skilled nursing facility: Outpatient Rehabilitation

- Services provided in outpatient facility
- Wide variety of rehab services
- Physical, Occupation and Speech Therapy
- Driving evaluation
- Orthotic and adaptive technology
- Wheelchair clinic
- Vocational rehab
- Electrical stimulation
- Robotic and virtual reality therapy
- Therapy frequency 1-3 times per week

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Reference: 6

Skilled nursing facility: Outpatient Rehabilitation

- Ideal patients
 - Able to be transported to clinic 1-3 times per week
 - Benefit from focus on higher level of mobility and instrumental ADL skills such as driving not addressed in home therapy
- Regulatory requirements
 - Cap on Medicare expenditures for PT, OT, ST each year
 - Medicare pays 80% of the cost of therapies up to \$2,330 year

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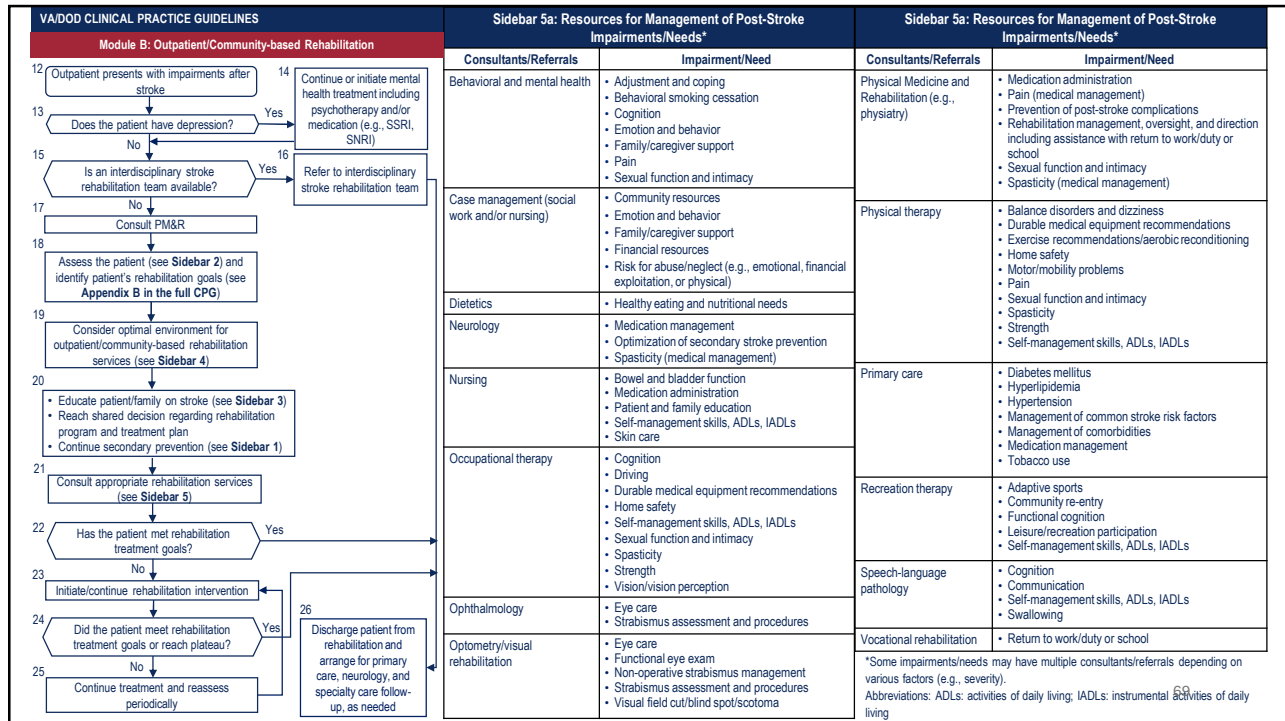
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Tools

Post-Acute Continuum for Stroke Care

American Academy of Physical Medicine and Rehabilitation

Medicare Healthcare Compare

Compare quality and outcomes for different healthcare facilities

Patient's Stroke Discharge Checklist

American Stroke Association


2021 Prevention of Stroke in Stroke Patients

American Stroke Association


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Tools




Secondary Stroke Prevention Checklist
American Stroke Association



Secondary Stroke Patient Handout
American Stroke Association



Healthcare Provider Rehab Resources
American Stroke Association



Stroke Support Group Finder and Info
American Stroke Association

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Tools



Hospice Finder and Support
National Hospice and Palliative Care Organization



Mental Health Therapist Finder
Psychology Today



Medicare Application Resources and Tools
U.S. Centers for Medicare and Medicaid Services




Montana Medicaid and Assistance Tools
Montana Department of Health and Human Services


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Tools




Montana Stroke Workgroup
Montana Department of Health and Human Services



Montana Mission: Lifeline Stroke
American Stroke Association



Montana Brain Injury Resources
Brain Injury Alliance Montana




The Rehabilitation Hospital of Montana
The Rehabilitation Hospital of Montana


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Tools




Montana Stroke Workgroup
Montana Department of Health and Human Services



Montana Mission: Lifeline Stroke
American Stroke Association



Montana Brain Injury Resources
Brain Injury Alliance Montana



The Rehabilitation Hospital of Montana
The Rehabilitation Hospital of Montana

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"Beyond disease there is a human being, a family, a provider, heroes and team - find them."

"Encourage patients to not let their circumstances change them but empower them to use their circumstance to change the world".

*"Patients cannot be what they cannot see...
...show them the way"*

"Be the spark of hope that empowers patients to get past nope!"

"Strive to have patients leave appointments feeling like a million-bucks instead of a buck-fifty."

"Pull out all of the stops to empower our patients to turn their long shots into sure shots!"

"Make small achievements big and big challenges small, taking fear out of it all"

**Jason Gleason, DNP, NP-C, FAANP
USAF/ANG LIEUTENANT-COLONEL (RET)**

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4. Dromerick, A. W., Geed, S., Barth, J., Brady, K., Giannetti, M. L., Mitchell, A., Edwardson, M. A., Tan, M. T., Zhou, Y., Newport, E. L., & Edwards, D. F. (2021). Critical period after stroke study (CPASS): A phase II clinical trial testing an optimal time for motor recovery after stroke in humans. *Proceedings of the National Academy of Sciences*, 118(39). <https://doi.org/10.1073/pnas.2026676118>
5. Young, B. M., Holman, E. A., Cramer, S. C., Shah, S., Griessenauer, C. J., Patel, N., Lin, D. J., Gee, J., Moon, J., Schwertfeger, J., Jayaraman, A., Lee, R., Lansberg, M., Payne, J., Patten, C., Cramer, S. C., Holman, E. A., Agrawal, K., Kissela, B., ... Falcone, G. J. (2023). Rehabilitation therapy doses are low after stroke and predicted by clinical factors. *Stroke*, 54(3), 831–839. <https://doi.org/10.1161/strokeaha.122.041098>
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