Overcoming Roadblocks to Patient Compliance:
Special Needs of the Rural Population
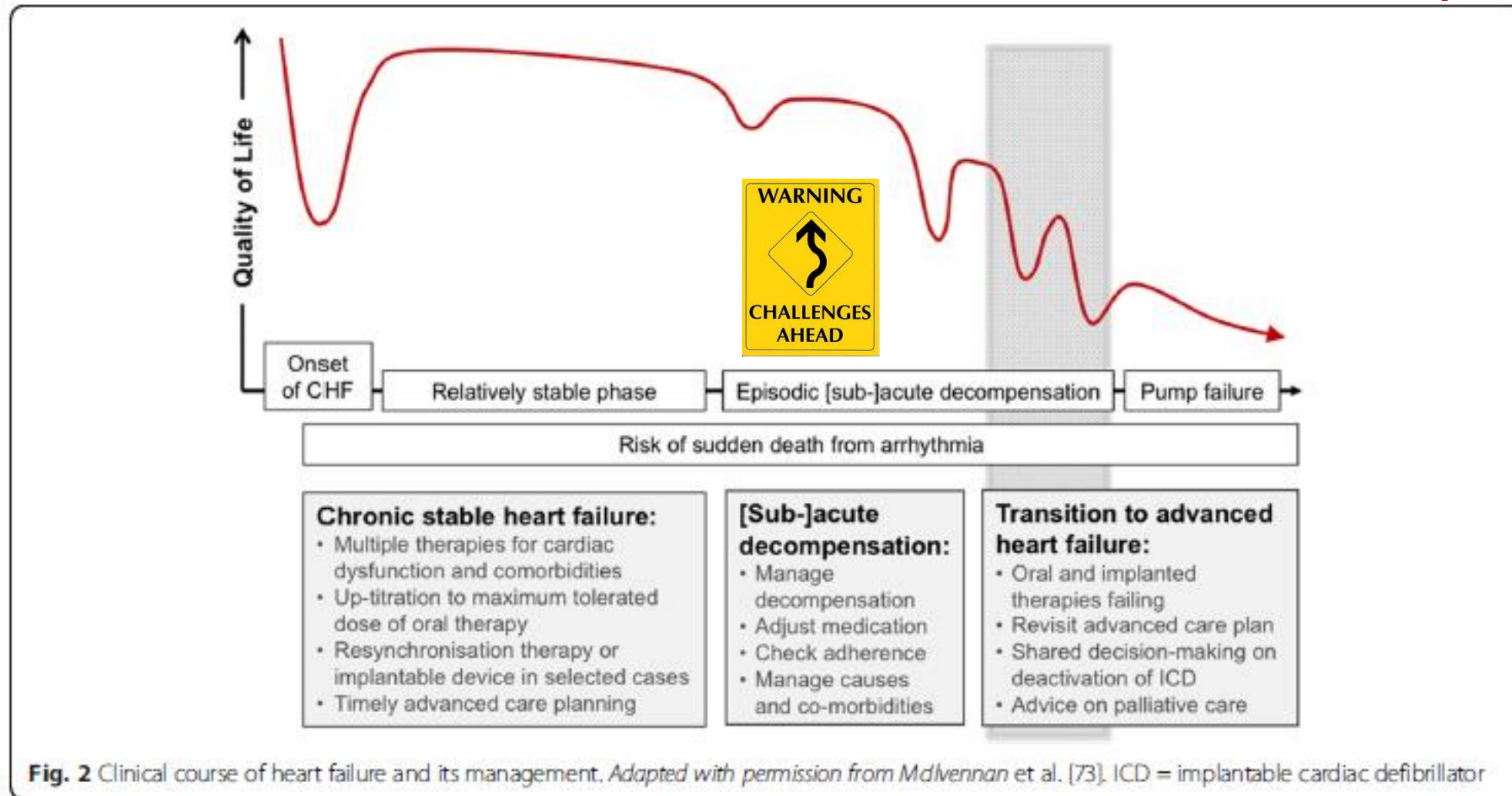
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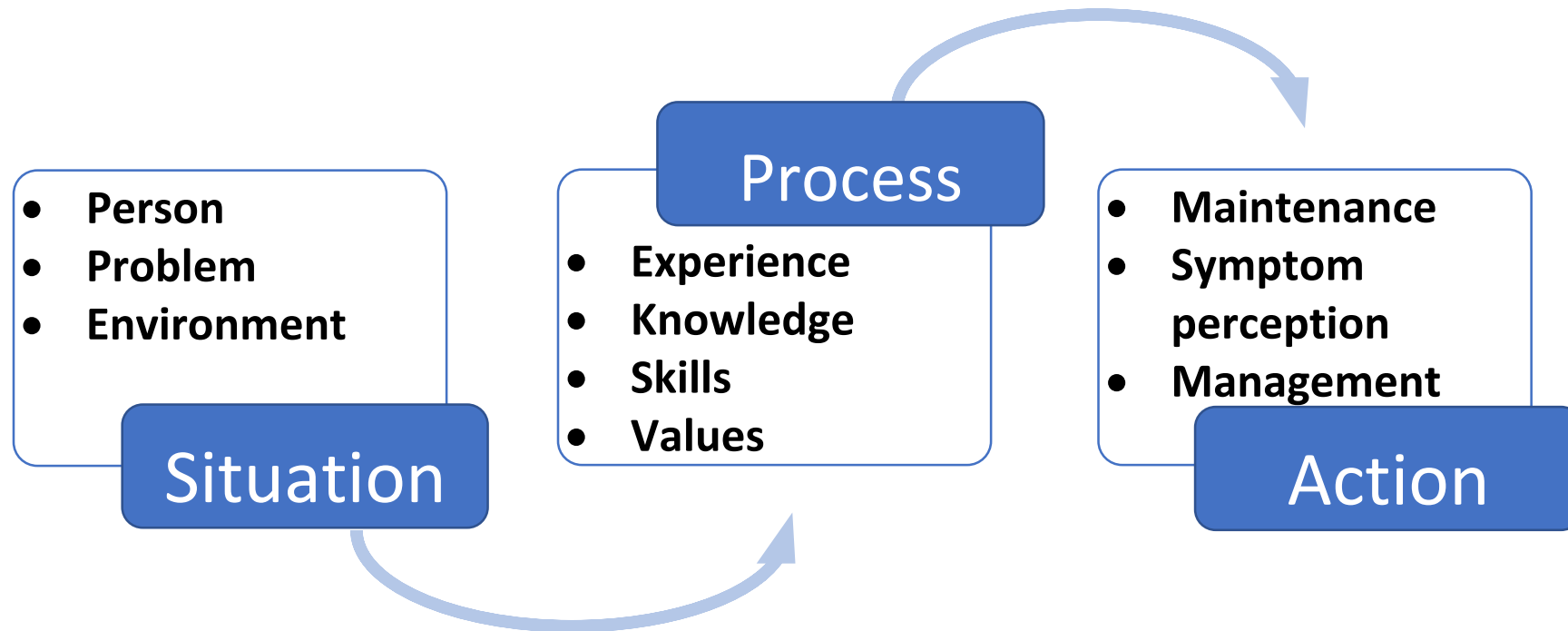# Disclosures

- No Financial Disclosures

Clinical Course of HF and management of HF

Fig. 2 Clinical course of heart failure and its management. *Adapted with permission from McIvennan et al.* [73], ICD = implantable cardiac defibrillator.

Situation Specific Theory HF Self-Care

Situation
- Person
- Problem
- Environment

Process
- Experience
- Knowledge
- Skills
- Values

Action
- Maintenance
- Symptom perception
- Management

(Riegel, Dickson, & Faulkner, 2016)
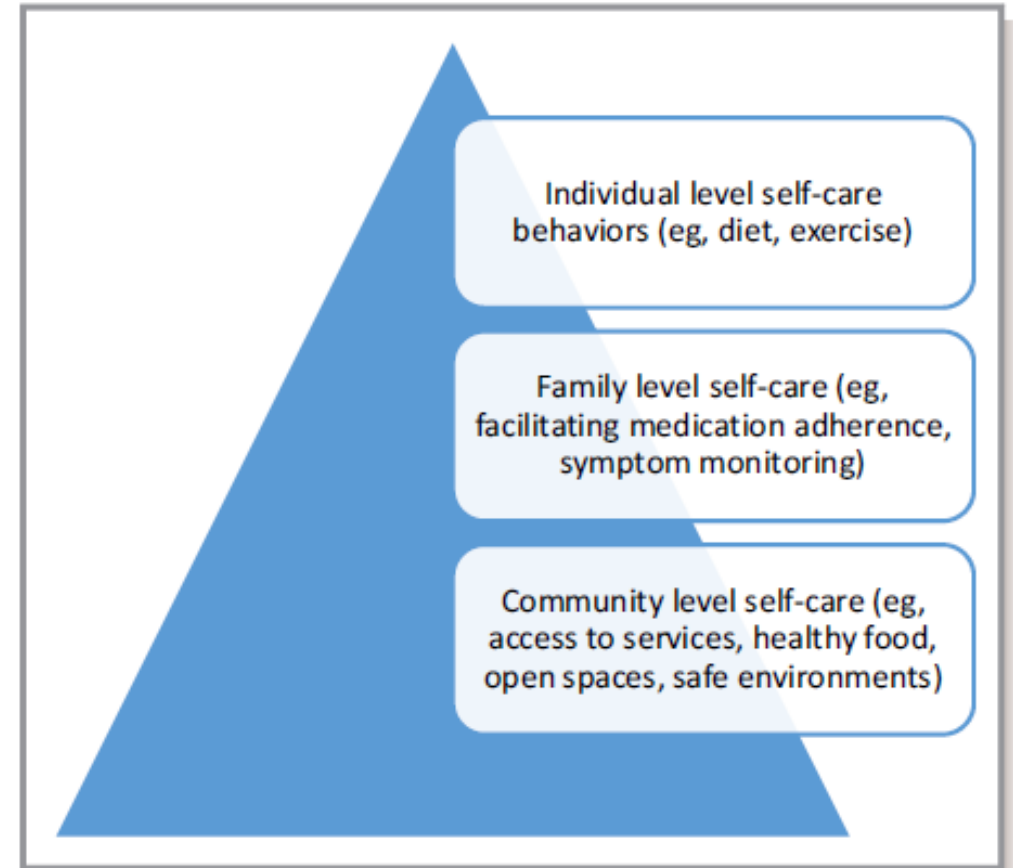
Situation

Person

- Self-care of HF: Naturalistic decision-making process
  - Influences actions that maintain physiologic stability, facilitate symptom perception, & direct system management
  - Addresses both prevention & management of chronic illness

Problem

- Core elements of self-care
  - self –care maintenance
  - self-care monitoring
  - self-care management

Environment

- Three levels of self-care
  - Individual
  - Family
  - Community

Individual level self-care behaviors (eg, diet, exercise)

Family level self-care (eg, facilitating medication adherence, symptom monitoring)

Community level self-care (eg, access to services, healthy food, open spaces, safe environments)

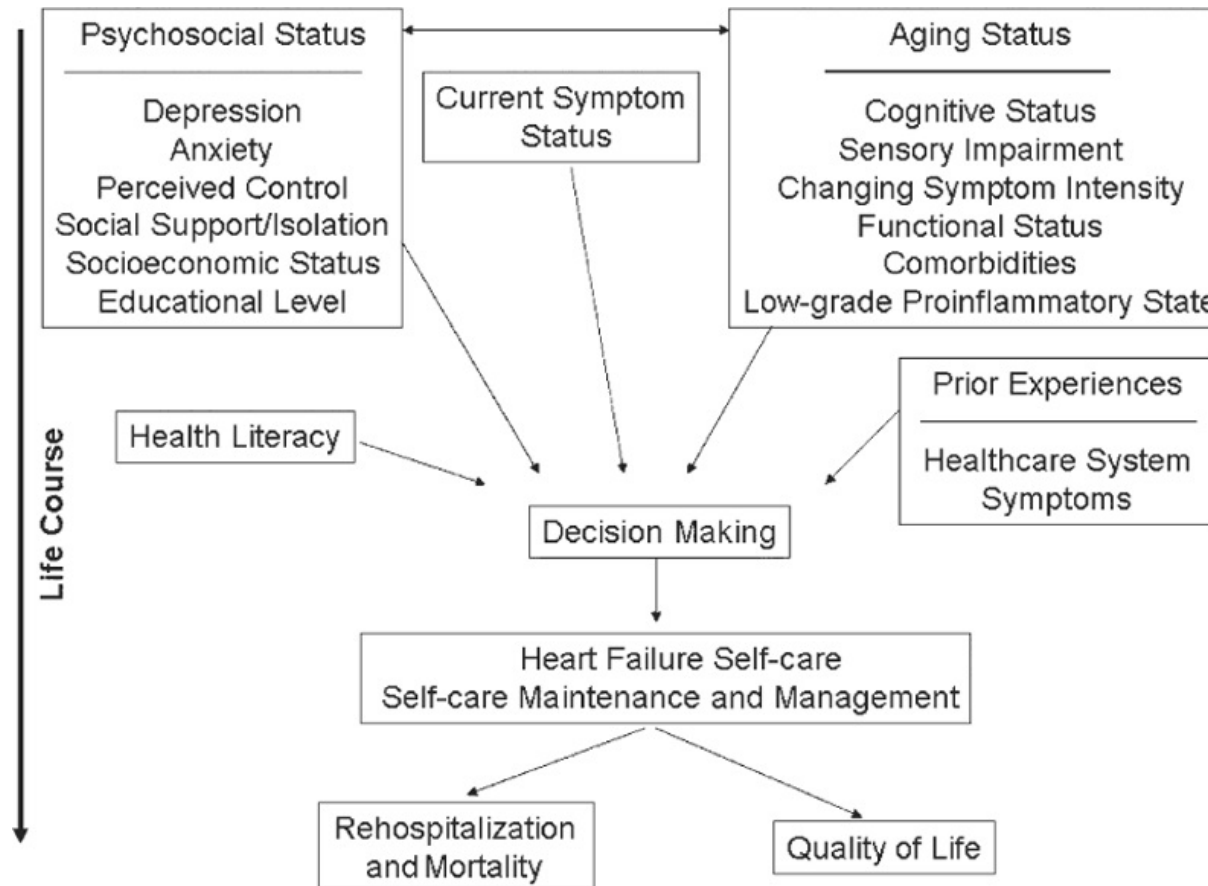(Riegel, Dickson, & Faulkner, 2016; Riegel et al., 2017)

Person

- Self-efficacy for HF self-management (SM)
  - Belief in ability to manage HF & achieve desired health outcomes
- Patient activation (PA)
  - a person's knowledge, skill, and confidence in managing their health and self-care
- SM significantly, + associated with PA
- PA significantly, + associated with SM

(Hibbard, Mahoney, Stockard, & Tusler, 2005; Riegel, Lee, Dickson, & Carlson, 2009; Young, Barnason, & Kupzyk, 2016)

Process

Framework Self-care in Heart Failure

Moser, D. K., & Watkins, J. F. (2008). Conceptualizing self-care in heart failure: a life course model of patient characteristics. *J Cardiovasc Nurs, 23*(3), 205-218; quiz 219-220. doi:10.1097/01.JCN.0000305097.09710.a5

Knowledge & Predictors of Self-care

Predictor	Standardized β	95% confidence interval	p-value
Health literacy	0.013	−0.063 to 0.083	0.788
Psychosocial status			
Depressive symptoms	0.278	0.164 to 0.445	<0.001
Anxiety	−0.032	−1.111 to 0.620	0.578
Perceived control	−0.145	−0.323 to −0.080	0.001
Living with someone (vs. living alone)	−0.016	−1.653 to 1.132	0.713
Age, years	−0.011	−0.058 to 0.046	0.817
Female (vs. male)	0.034	−0.689 to 1.655	0.419
Annual income of <$20,000 (vs. ≥$20,000)	0.114	0.383 to 2.969	0.011
Current Symptom status (scores on the physical subscale of the MLHFQ)	−0.114	−0.126 to −0.003	0.040
Aging factors			
Mild cognitive impairment (vs. intact cognition)	−0.011	−1.385 to 1.047	0.785
NYHA functional class III/IV (vs. I/II)	0.052	−0.502 to 2.036	0.236
Comorbidity burden	−0.014	−0.383 to 0.275	0.748

Model p-value <0.001; adjusted r^2 = 0.071.
MLHFQ: Minnesota Living with Heart Failure Questionnaire; NYHA: New York Heart Association.

Lee, K. S., Moser, D. K., Pelter, M. M., Nesbitt, T., & Dracup, K. (2016). Self-care in rural residents with heart failure: What we are missing. *European Journal of Cardiovascular Nursing, 16*(4), 326-333. doi:10.1177/1474515116666439

Rural Pt Knowledge about HF

Frequency of Patients with HF Identifying the Correct Answer on Each Item of the HF Knowledge Questionnaire (N=62)

Items	Correct Answer Identified n (%)	Items	Correct Answer Identified n (%)
		Signs and symptoms of HF	
Heart failure is a condition where the heart cannot pump enough blood to meet needs of body	546 (89.2)	Puffy legs & feet	562 (91.8)
		Wt gain 5 lbs in 1 wk	474 (77.5)
		SOB/difficulty breathing	596 (97.4)
A primary cause of s/s of HF is too much fluid	424 (69.3)	Back pain	401 (65.5)
		Sharp chest pain	104 (17)
		Neck pain	326 (53.3)
You only need to weigh once a week for HF	426 (69.6)	Dry, hacking cough	265 (43.3)
		Earache/ringing in ears	496 (81)
Reason it is important to seek care ASAP for s/s of HF	576 (94.1)	Headache	387 (63.2)
		Heartburn/indigestion	273 (44.6)
Reason for daily diary of s/s of HF	556 (90.8)	Need extra pillows to sleep	362 (59.2)
		Slurred speech	313 (51.1)
What to do for s/s	577 (94.3)	Swelling in abdomen	293 (47.9)
		Fatigue	550 (89.9)

Dracup, K., Moser, D. K., Pelter, M. M., Nesbitt, T., Southard, J., Paul, S. M., . . . Cooper, L. (2014). Rural patients' knowledge about heart failure. *The Journal of cardiovascular nursing, 29*(5), 423-428. doi:10.1097/JCN.0b013e31829cbcf3

Health Literacy

Health Literacy
- 39% of HF patients have low health literacy.
- Predictors of low health literacy: Age, race/ethnicity, years of education, & cognitive function
- Adequate health literacy consistently correlated with increased HF knowledge & increased salt knowledge

Clinical Implications:
- Health care professionals need to recognize effect of low health literacy on health outcomes & develop strategies to minimize effects

Cajita, M. I., Cajita, T. R., & Han, H. R. (2016). Health Literacy and Heart Failure: A Systematic Review. *J Cardiovasc Nurs, 31*(2), 121-130. doi:10.1097/jcn.0000000000000229

Action

Self-care maintenance	Self-care monitoring	Self-care management
Cardiovascular health behaviors: smoking cessation, BMI, PA, cholesterol, diet, ↓ Na+, ↓ alcohol	Know common s/s: s/s of worsening condition, s/s of complications	Know difference among cardiovascular s/s & non-life-threatening conditions
Gain knowledge: seek information, understand self-care requirements	Perform daily BP measure	Have a plan for what to do when experiencing s/s
Adhere to condition specific treatments: take medications as prescribed, know side effects, understand plan of care	Perform daily weight measure	Evaluate effectiveness of tx
Keep scheduled appts	Dev routine to monitor s/s	Know who & when to call when s/s occur

(Riegel et al., 2017)

Action

Facilitators

- **Maintenance**
  - ✓ Questionnaires may improve recall & accuracy of Na+ intake assessment
  - ✓ 24 hour measurements, education using pts own cups
- **Symptom perception**
  - ✓ Provide patient education
  - ✓ Utilize services such as daily dairies
- **Management**
  - ✓ Telehealth Services

(Colin-Ramirez, McAlister, Woo, Wong, & Ezekowitz, 2015; Ivynian, DiGiacomo, & Newton, 2015))
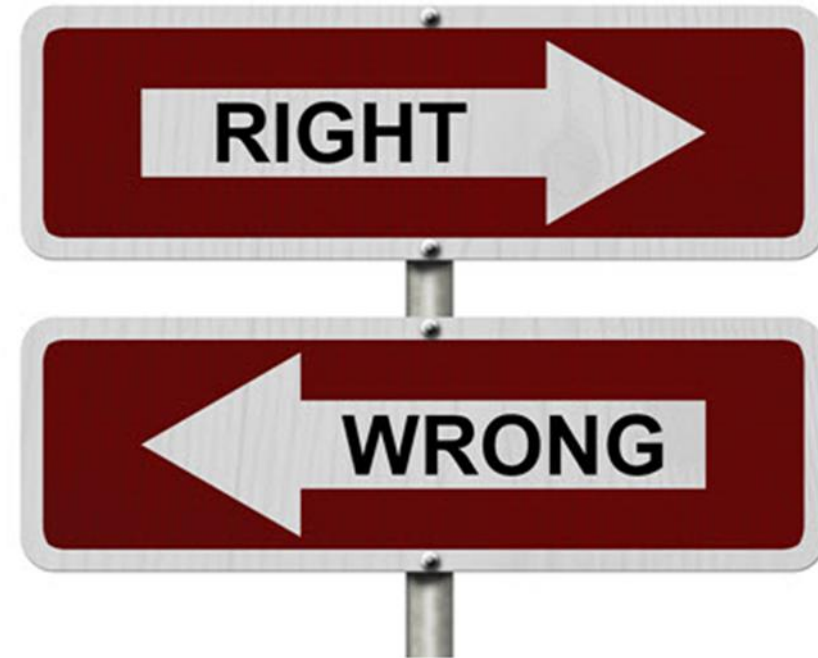
Teleheath

Enables monitoring of 4 types of data:

- Symptoms
  - e.g. fatigue or SOB
- Behaviors
  - Compliance: medication adherence, fluid restriction, diet, Na+ restriction,
  - Adverse events: falls or changes in behavior
- Biological data (non-invasive)
  - e.g. weight, bio-electrical impedance, BP, HR, SpO2, glucose
- Biological data (invasive) implantable devices
  - e.g. intracardiac or pulmonary artery pressure, dysrhythmias.

(Greenhalgh, A'Court, & Shaw, 2017)

Teleheath

- Supports self-management:
- Builds support relationships
  - Healthcare provider interaction
  - Peer interaction
- Integrates technology into daily living
- Increases visibility of symptoms and biomarkers to improve
  - Knowledge
  - Motivation
  - Self-efficacy
  - Support network (increased family awareness & support)
  - Reinforced self-management behavior

(Greenhalgh, A'Court, & Shaw, 2017)

ONE WAY

ROAD
CLOSED

ONE WAY

WARNING

CHALLENGES
AHEAD

WRON
WAY

RIGHT

WRONG

YIELD

ROAD
CLOSED