Geriatrics and Telemedicine

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Story of Mr. C

• Mr. C is a 92 year old man who lives in an apartment adjacent to his daughter’s house, with the assistance of a paid caregiver

• He has multiple health problems
  – Atrial fibrillation
  – Prostatic hypertrophy and an indwelling catheter
  – Osteoarthritis
  – Glaucoma
  – Congestive Heart Failure
Story of Mr. C (cont’d)

• He is on multiple medications
  – Warfarin
  – Furosemide
  – Benazapril
  – Amiodarone
  – Tylenol with codeine
  – Betagan eye drops
• He is responsible for taking his own Rx
• Recently the CHF worsened and it became clear that, even with optimized medication therapy, his heart was truly failing.
Story of Mr. C (cont’d)

• His cardiologist and I recommend the involvement of a home health agency to provide nurse visits at home.

• He is put on supplemental O2 at home to keep him more comfortable.

• It is getting more difficult for him to come to the SeniorHealth Center so I do a house call and he looks pretty good.
• Two days later I receive a worried phone call from the nurse: she is unsure if his shortness of breath requires more aggressive medical therapy. It is difficult to interpret his lung sounds, so she requests a CXR be performed at home and we order some blood tests.

• The CXR is performed and the radiologist’s interpretation is: “hazy infiltrate with bilateral effusions, clinical correlation is suggested”
Story of Mr. C (cont’d)

• Finally the nurse is concerned enough that she recommends he go to the E.R. (911) where another CXR is performed, more blood tests are done, and he is sent home on a higher dose of furosemide.
• The next day he becomes dizzy and disoriented. The nurse finds that his blood pressure has dropped too low with the medication change and needs to speak with the cardiologist urgently.
• It is hard for Mr. C to come to the office so the cardiologist does her best to manage his care over the phone, with input from the RN… but this is not satisfactory.
• No one is sure if he is taking his medications properly.
Story of Mr. C (cont’d)

• They need to come in for another visit to the cardiologist
  – The daughter takes a day off from work
  – The caregiver prepares Mr. C with the wheelchair & oxygen to make the trip
  – Mr. C is exhausted; for him, the 20 minute office visit takes 5 hours
Story of Mr. C (cont’d)

- Mr. C brings him home and then goes to the market
- While she is out, he falls and is unable to get up or call for help
- Because he is on coumadin at too high a dose, he bleeds extensively.
- The paramedics are called again for another trip to the ER, where he is treated and released after 14 hours
Story of Mr. C: Consequences

- **Costs**
  - Emotional
  - Physical
  - Economic
- **Impact on the patient**
- **Impact on the family**
- **Impact on the health care providers**
Story of Mr. C…

What If?

• **What if** there were technology and telemedicine capability so that
  – I could communicate directly with the nurse while she was at his home?
  – I could see how Mr. C’s breathing looked?
  – I could listen to his heart and lungs?
  – We could make medication changes and reliably monitor his blood pressure?
Story of Mr. C…
What If?

• What if there were technology and telemedicine capability so that
  – I could obtain his chest x-ray and review it with the radiologist while we simultaneously viewed the films?
  – His pill box was monitored and he didn’t take too much coumadin by mistake?
  – His fall was identified immediately so that his blood loss was minimal and he didn’t have a terrifying 90 minutes on the floor?
Story of Mr. C

Now what are the consequences?

- No calling of paramedics
- No visit to the emergency room
- No need to repeat CXR and blood tests
- No need for daughter to take time off of work
- No need for patient and caregiver to schlep to the doctor’s office
- Medication side effect is caught early, before Mr. C experiences a problem
Who would benefit?

• Older adults
  • Dementia
  • Multiple medical problems
  • High risk of falling/functional difficulties

• Any one with chronic illness such as
  • Diabetes
  • Stroke

• People who have just been discharged from hospital

• People who live in group homes for adults with disabilities

• People who live in assisted living facilities
Bottom Line: We have the potential to provide better care and lower costs through a unique interdisciplinary collaborative approach.