Technologies for Improving Post-Acute Care Transitions: Lessons from the ADRC Trenches

Lynn Redington
Stephen Kogut
Susan Shepherd
Angie Hochhalter

N4a Conference: National Association of Area Agencies on Aging
Denver CO, 9 July 2012
Workshop Agenda

- Background on Center for Technology and Aging (CTA) and CTA Technology Diffusion Grants Programs
- Overview of CTA’s Tech4Impact Grant Program
  - Technologies for Improving Post-Acute Care Transitions (“Tech4Impact”)
- Results from 3 Tech4Impact Grantees
Established in 2009 with funding from The SCAN Foundation, located at the Public Health Institute

Mission: Accelerate diffusion of technologies that help older adults lead healthier lives and maintain independence

Independent, non-profit resource center on issues related to diffusion of technology for older adults

Technology Diffusion Grants Programs, e.g.:

- Tech4Impact Diffusion Grants Program
Purpose of Tech4Impact
(Technologies for Improving Post-Acute Care Transitions)
Diffusion Grants Program

- Advance the use of technologies that improve care transitions and reduce avoidable hospitalizations
  - Better care, better health, lower costs
  - Home and community based support
  - Better care coordination, patient engagement
  - Information and communications technologies
- Avoidable Readmissions:
  - 1 in 5 patients readmitted w/in 30 days of discharge
  - 76% of readmissions are preventable
  - $25 billion savings potential
Tech4Impact Grant Awards

- RFP released September 2010
- January 2011-March 2012 grant period
- $500,000 in grant funds
- Tech4Impact designed to complement an AoA/CMS initiative to advance care transitions among ADRCs (Aging and Disability Resource Centers)
- Grant was limited to State Units on Aging
  - Eligible states had preexisting care transitions collaborations between hospitals and ADRCs
- 16 States eligible → 12 applied → 5 selected
Tech4Impact Grant Awards

States
California
Indiana
Rhode Island
Texas
Washington

Technology Approach
1. Personal Health Records & Info
2. Care Management Software

For more information about the 5 grant awards, see:
Other CTA Diffusion Grants Programs

- Four in various stages of development
  1. Medication Optimization Technologies
  2. Remote Patient Monitoring Technologies
  3. Technologies for Improving Post-Acute Care
  4. Mobile Health Technologies
- 22 grantees: “learning laboratories”
- Lessons Learned, Best Practices, Tools
- Foundation for CTA mission and role
  - Collaborate, Demonstrate, Educate, Advocate
ADOPT for Aging Services
 Accelerating Diffusion Of Proven Technologies

Design User-Friendly, Relevant Technology
Establish Technology Value
Create Business Model
Promote Technology
Form Partnerships
Identify Technology Champions
Coach Users

Improving Medication Management During Care Transitions:

*Use of an electronic personal health record (ePHR) facilitated by pharmacist home visit*

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Improving Medication Management During Care Transitions: *Use of an electronic personal health record (ePHR) facilitated by pharmacist home visit*

**Aims**

1. To identify and address medication-related problems post discharge
   - Pharmacist home visit + ER-Card® ePHR system
2. Prevent rehospitalization
3. To learn more about the role of pharmacy and technology in supporting medication management during care transitions
The Care Transitions Program℠

Four Pillars

1. **Medication self-management:** Patient is knowledgeable about medications and has a medication management system.

2. Use of a **dynamic patient-centered record:** Patient understands and utilizes the Personal Health Record (PHR) to facilitate communication and ensure continuity of care plan across providers and settings. The patient or informal caregiver manages the PHR.

3. **Primary Care and Specialist Follow-Up:** Patient schedules and completes follow-up visit with the primary care physician or specialist physician and is empowered to be an active participant in these interactions.

4. **Knowledge of Red Flags:** Patient is knowledgeable about indications that their condition is worsening and how to respond.

http://www.caretransitions.org/four_pillars.asp
Innovation Component: 
Electronic Personal Health Record (ePHR)

- **ePHR**: “An electronic application through which individuals can maintain and manage their health information (and that of others for whom they are authorized) in a private, secure, and confidential environment.”*

- This initiative utilized the ER-Card® ePHR system - includes care management features, staff support, and password-protected online information sharing.

* Healthit.hhs.gov see glossary
An innovative, electronic personal health record and healthcare management service

RI based

Online ePHR system, 24 hour accessibility

Secure, HIPAA compliant

Patient information reviewed and updated by health professionals

Free to study participants
<table>
<thead>
<tr>
<th>Medication</th>
<th>Type</th>
<th>Dosage</th>
<th>Unit</th>
<th>Frequency</th>
<th>Last Updated</th>
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<tbody>
<tr>
<td>AcoHele</td>
<td>RX</td>
<td>12</td>
<td>Mg</td>
<td>Bedtime</td>
<td>07/06/2010</td>
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<tr>
<td>Accu-Chek (test strips)</td>
<td>OTC</td>
<td>4</td>
<td>Uses</td>
<td>Daily</td>
<td>08/09/2008</td>
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<td>Advair Discus</td>
<td>RX</td>
<td>2</td>
<td>Puffs</td>
<td>2x Daily</td>
<td>07/06/2010</td>
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<td>OTC</td>
<td>81</td>
<td>Mg</td>
<td>AM</td>
<td>07/15/2008</td>
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<td>Cabraltin</td>
<td>RX</td>
<td>0.25</td>
<td>Mg</td>
<td>Bedtime</td>
<td>09/21/2009</td>
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<tr>
<td>Combivent</td>
<td>RX</td>
<td>4</td>
<td>Puffs</td>
<td>4x Daily</td>
<td>07/15/2008</td>
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<td>Fosamax</td>
<td>RX</td>
<td>75</td>
<td>Mg</td>
<td>Saturday</td>
<td>07/15/2008</td>
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<td>Hydrochlorothiazide</td>
<td>RX</td>
<td>25</td>
<td>Mg</td>
<td>AM</td>
<td>07/15/2008</td>
</tr>
<tr>
<td>Lipitor</td>
<td>RX</td>
<td>20</td>
<td>Mg</td>
<td>AM</td>
<td>07/15/2008</td>
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<tr>
<td>One-a-Day for Women</td>
<td>OTC</td>
<td>1</td>
<td>Tablet</td>
<td>AM/PM</td>
<td>07/16/2009</td>
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<tr>
<td>Spiriva Inhaler</td>
<td>RX</td>
<td>1</td>
<td>Puff</td>
<td>Daily - 9 AM</td>
<td>01/28/2008</td>
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<tr>
<td>Synthroid</td>
<td>SAMPLE</td>
<td>0.175</td>
<td>MCG</td>
<td>AM</td>
<td>07/28/2010</td>
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<tr>
<td>Zoloft</td>
<td>RX</td>
<td>5</td>
<td>Mg</td>
<td>1/PM</td>
<td>05/01/2008</td>
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</tbody>
</table>
Innovation Component: Pharmacist Home Visit

- Medication management issues result in avoidable re-admissions and sub-optimal patient outcomes
  - Patient-related and health system-related causes
- Pharmacist expertise under-utilized during care transitions
- Increasing emphasis on medication reconciliation at transitions in care
  - Joint Commission, CMS
  - Meaningful Use, APhA, etc.
Project Collaborators

- RI Department of Elderly Affairs
- RI Department of Human Services / RI Medicaid
- University of RI College of Pharmacy
- QIO: Healthcentric Advisors (formerly Quality Partners RI)
- ER-Card®, LLC
- Kent Hospital, Warwick, RI
Targeted Patients

- Recent hospital discharge
- Conditions of focus: diabetes, CAD/CHF, COPD/asthma
- Older age
- English speaking
- Without diminished cognition - no patient proxy
- Community-dwelling (not long-term care)

Recruitment

- ADRC via QIO
- Medicaid referral
- In-hospital recruitment
## Results: Medication-Related Problems Identified

<table>
<thead>
<tr>
<th>Characteristic (N)</th>
<th>Medication Problem(s) Identified</th>
<th>No Medication Problems Identified</th>
<th>p-value*</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>ePHR use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (20)</td>
<td>15</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>No (10)</td>
<td>4</td>
<td>40</td>
<td>6</td>
</tr>
<tr>
<td>Patient Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 - 64 years (7)</td>
<td>5</td>
<td>71.4</td>
<td>2</td>
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<tr>
<td>65 + years (23)</td>
<td>14</td>
<td>60.9</td>
<td>9</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (14)</td>
<td>8</td>
<td>57.1</td>
<td>6</td>
</tr>
<tr>
<td>Male (16)</td>
<td>11</td>
<td>68.8</td>
<td>5</td>
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<tr>
<td>Primary Diagnosis</td>
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<td></td>
<td></td>
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<tr>
<td>Cardiovascular (24)</td>
<td>14</td>
<td>58.3</td>
<td>10</td>
</tr>
<tr>
<td>Respiratory (3)</td>
<td>2</td>
<td>66.7</td>
<td>1</td>
</tr>
<tr>
<td>Diabetes (3)</td>
<td>3</td>
<td>100</td>
<td>0</td>
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</table>
### Results: Example Medication-related Problems Identified During Pharmacist Home Visit

<table>
<thead>
<tr>
<th>Cost-related</th>
<th>Medication under-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient discontinued anti-platelet medication (clopidogrel) due to cost</td>
<td>Diabetes + post-MI: No ASA, ACEI or statin prescribed</td>
</tr>
<tr>
<td>Patient discontinued cholesterol medication (rosuvastatin) due to cost</td>
<td>Patient did not continue aspirin therapy as instructed (intentional non-adherence)</td>
</tr>
<tr>
<td>Patient discontinued enoxaparin due to cost</td>
<td>Diabetes - no ACEI / ARB prescribed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Therapy duplication</th>
<th>Incorrect medication use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient taking multiple acetaminophen-containing products</td>
<td>Patient taking albuterol inhaler 3 puffs once daily versus 1 puff three times a day</td>
</tr>
<tr>
<td>Patient taking omeprazole and esomeprazole</td>
<td>Patient using sublingual nitroglycerin incorrectly</td>
</tr>
<tr>
<td>Duplication w/ Proventil + Proair inhalers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drug interactions</th>
<th>Unclear instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient taking thyroid medication at same time as calcium supplement</td>
<td>Patient uncertain if supposed to continue or stop anti-platelet medication</td>
</tr>
<tr>
<td>Patient unaware of drug-food (alcohol) interactions</td>
<td>Different dose of medication taken at home versus discharge instructions</td>
</tr>
<tr>
<td>Continuing use of enoxaparin + warfarin for DVT</td>
<td></td>
</tr>
</tbody>
</table>
Results: Patients’ Experience / Perspective

- Patients agreeing to the home visit were often also agreeable to trying the ePHR system (66%).
- Seven of 20 patients agreeing to utilize the ePHR system later reported that they had used the system to share information with care providers during their post-discharge encounters with care providers.
- Patients expressed a generally high level of satisfaction with the pharmacist home visit.
Lessons Learned

- Getting patients to say “yes” is a challenge; particularly when recruiting patients in the hospital setting
  - Informed consent
  - Electronic capturing and sharing of personal health information
- Promote ePHR adoption pre-hospitalization
  - MD encouragement
- Medication-related problems post-discharge are common and varied
- Patients value pharmacist and staff support in setting up and managing the ePHR
- Assessing patients’ computer literacy and IT acceptance may improve the efficiency of recruitment
Next Steps

- Grow enrollment in ER-Card program among RI seniors
- Assess the utility of the ePHR post-discharge among existing / new users
- Partnerships with visiting nurse associations
- Several related pending grants and evolving projects
CARE TRANSITIONS INTERVENTION® AND THE SHARED CARE PLAN

Susan Shepherd
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Washington State DSHS-ADSA-HCS-SUA
Susan.Shepherd@dshs.wa.gov
Agenda

- What Was the Innovation?
- Why did We Think it was Important?
- Who was involved?
- What Was Our Approach?
- What Happened?
- What Did We Learn?
- Q&A
What Was the Innovation?

- **Supporting the Care Transition Intervention® (CTI) Model through Expanded Use of an Electronic Personal Health Record (E-PHR): the Shared Care Plan Health Record Bank**

- [https://www.sharedcareplan.org](https://www.sharedcareplan.org)

- Free for residents of the two counties, targeted by one AAA’s ADRC CTI program, in Northwest Washington.
Why Did We Think it Was Important?

- **Patients and their family members or others in their small social network** bear primary responsibility for communicating their health information and managing it from care site to care site;

- **Unlike having only healthcare providers’ clinical notes** for managing an individual’s healthcare, it provides the ability to pro-actively engage the participant and caregivers with healthcare providers in a person-centered care team;

- **Use of an electronic PHR** had not yet been attempted with care transition participants or their informal caregivers; and

- **It was hypothesized that such a tool could provide** for a person-centered approach to development of a care-team that would promote and facilitate positive health outcomes.
Who Was Involved?

- **Population:** Older adults and persons 18 years and over with disabilities in Whatcom and Skagit Counties, including:
  - Participants in Washington State’s AoA-funded Option D Evidence-based Care Transition Grant; and
  - Other interested community members.

- **Partners:**
  - Washington State Department of Social & Health Services (DSHS) Aging & Disability Services Administration (ADSA)
  - Northwest Regional Council (NWRC) Aging & Disability Resource Center (ADRC) – subgrantee;
  - Whatcom County Health Information Network (HInet), LLC (www.hinet.org) - subgrantee; and
  - Congral, LLC (www.congral.com) – primary developer of the PHR, but not a subgrantee.
What Was Our Approach?

- **Hlnet:**
  - Train-the-Trainer Curriculum & Training;
  - Registration Assistance and Technical Support; Available for Individualized Technical Assistance;
  - Co-presenters with the ADRC.

- **ADRC:**
  - 48 Community Presentations (Know Before You Go);
  - Information and Help to Access the PHR: 47 CTI participants; 254 community members (301 total);
  - Assistance to Create a PHR: 47 CTI participants; 247 community members (294 total);
  - Surveys: To all 301 participants.
What Happened?

- **Outcome Measurements:**
  - Total # with an account = 19;
  - Total # with an electronic PHR = 11;
  - Total # Option D CTI participants initiated in Whatcom and Skagit Counties (February-December 2011) = 154;
  - Total # CTI participants assisted with a PHR (paper or electronic) = 47; and
  - Total # CTI participants assisted to successfully create an electronic PHR = 1.
What Happened? (continued)

- Survey Outcomes:
  - Distributed = 301; Returned = 30 (10%)
  - Top 4 Reasons for not using the electronic PHR were:
    - Found Tool Confusing;
    - No Access to Computer;
    - Concern for Privacy; and
    - Do Not Understand Computers.
  - When asked if they would recommend the tool to others:
    - Positive about the paper version; less inclined to recommend electronic version.
  - Some suggestions for improvement included:
    - Make it easy to log into and use
    - Expand so other healthcare providers can access my information
    - Concerned about choosing the right medications on the list – don’t want to make a mistake
    - Many of the respondents recommended the paper PHR and there were some that discouraged use of the electronic PHR
What Did We Learn?

- The ADRC continued to be challenged with successfully engaging older individuals and their caregivers to enter their information online in the electronic PHR.

- Health care professionals are not the only ones who have a “workflow”. Individuals with chronic conditions and their caregivers also have their own workflows. Creating and maintaining an electronic PHR can be an insurmountable task for them.

- Participants need to have a sense of ownership in the tool - a means toward an end for the individual or his/her caregiver(s). If it feels more like an assignment, it may be rejected out of hand;
What Did We Learn? (Continued)

- Older adults, particularly those recently released from a hospital, responded better to a tangible paper Personal Health Record;

- The electronic PHR needs to be easy to access and navigate for all users: patients, caregivers and healthcare professionals. Physicians need it to be part of their regular system, requiring no extra steps to populate;
What Did We Learn? (continued)

- **Expansion Potential Continues:**
  - **What is Needed CTI Participant Engagement:**
    - Dedicated staff to assist with the process;
    - Tool Improvement; and
    - Security concerns overcome;
  - Participants are interested and engaged in the paper PHR;
  - Over time, we expect Reticence to Change Due to:
    - Improved ease of use;
    - General expansion in the use electronic health records by healthcare providers;
    - Smart-phone and tablet compatible systems;
    - Incorporation of interoperability standards; and
    - An increased number of tech-savvy baby boomers aging into the target population.
Coach Tool for Delivery of the Care Transitions Intervention®

Angie Hochhalter, Richard McGhee, Alan Stevens, and Jennifer Thorud

on behalf of the Central Texas Care Transitions Team
Incremental Innovation for a Local Challenge

- Document Coaching Activities
- MS ACCESS database designed with Central Texas coaches and managers
- Compare Across Sites
- Report for Project Management
- Evaluate Program
Screen Shots: Track Enrollment, Eligibility
Screen Shots: Track Intervention Contacts

- Consumer ID: 1
- Consumer Name: Test Example
- Goal 1: I want to walk well enough to stay in my house
- Discharge Date: 07/04/2012

- Medication Management:
  - Create accurate medication list
  - ID med discrepancy
  - Advise to discuss medication with PCP/Pharmacist/Poison Control
  - Problem solve issues about getting/taking medication
  - Other: Same med/dose listed twice on discharge list

- Personal Health Record (PHR):
  - Update PH
  - Encourage PHR use in follow up visit
  - Develop/Role play follow up questions
  - Other: Scheduled with PCP 7/10/2012

- Medical Care Follow Up:
  - Establish whether appointments are necessary
  - Discharge instructions
  - Review discharge instructions

- Red Flags:
  - Consumer sets specific goal(s).
  - Discuss self mgmt
  - Discuss DME delivery, home health and similar services
  - Discuss caregiver concerns and needs
  - Discuss relevant community resources
  - Discuss financial concerns or need for a social worker
Screen Shots: Evaluation Forms
**Referrals with Enrollment Indicated**

<table>
<thead>
<tr>
<th>Enrollment Indicated</th>
<th>Number of Eligible Referrals</th>
<th>Percentage</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**List of eligible referrals whose enrollment is not indicated**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
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Who are we reaching?

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<th>Characteristic</th>
<th>Mean, %</th>
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<td>72.5 yrs</td>
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<tr>
<td>Ethnicity/Race</td>
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<tr>
<td>Hispanic/Latino</td>
<td>13%</td>
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<tr>
<td>Black/AfAm</td>
<td>12%</td>
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<tr>
<td>White</td>
<td>70%</td>
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<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>0-11 yrs</td>
<td>23%</td>
</tr>
<tr>
<td>HS or GED</td>
<td>28%</td>
</tr>
<tr>
<td>At least some college</td>
<td>40%</td>
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</table>
Texas Evaluation Examples

Who are we reaching?

<table>
<thead>
<tr>
<th>Characteristic</th>
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<tr>
<td>HS or GED</td>
<td>28%</td>
</tr>
<tr>
<td>At least some college</td>
<td>40%</td>
</tr>
</tbody>
</table>

How much time are we spending at home visits?
Texas Evaluation Examples

Are we implementing CTI with fidelity to protocols?

<table>
<thead>
<tr>
<th>Visit</th>
<th>Med Rec</th>
<th>PHR</th>
<th>F/U Appt</th>
<th>Red Flags</th>
<th>Goal</th>
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<tbody>
<tr>
<td>Hospital</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Home</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Call 1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Call 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% of Visits
Dissemination
45 Sites have reviewed (blue); 7 sites are using (green)
Lessons Learned

- Est. Central Texas Savings: 39 hrs/week; $969/week
- Requires training and standard definitions
- Challenges
  - ACCESS programming
  - Cross-site day-to-day sharing
For a copy of the Coach Tool:
ahochhalter@swmail.sw.org

For details on CTI:
www.caretransitions.org
Workshop Speakers: Contact Information

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