OVERVIEW OF THE PROJECT

- Engage pharmacists in the care of high risk patients at five Carilion regional hospitals
- Integrate clinical pharmacists within Carilion PCMH primary care practices.
- Provide electronic health care record access to IHARP network community pharmacies.
- Deliver this coordinated continuity of care intervention to thousands of patients with multiple chronic diseases.
The IHARP Patient Care Model

Provider Referral
- Patients identified by primary care provider (PCP)

Hospital Encounter
- Initial enrollment interview
- Medication care plan and discharge medication list provided

Primary Care Clinic
- PCCP/PCP collaboration
- 72-hour discharge phone follow up
- In person comprehensive medication review
- Ongoing medication management

Community Pharmacy
- Updated medication list sent to pharmacy upon discharge
- Pharmacists sends any changes in med use or patient condition to PCCP

Patient Enrollment

Number Enrolled January 2013 – January 2014
(n=2,710*)

Revised Enrollment Plan

Project Expansion To More Clinics

Number Enrolled

QTR 3  QTR 4  QTR 5  QTR 6  QTR 7  QTR 8  QTR 9  QTR 10  Jan-15

Primary Care Enrolled

Hospital Enrolled
### Patient Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
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</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong> (N=2573)</td>
<td></td>
</tr>
<tr>
<td>Young adult (18 – 25)</td>
<td>8 (0.31)</td>
</tr>
<tr>
<td>Adult (26 – 64)</td>
<td>1184 (46.02)</td>
</tr>
<tr>
<td>Elderly (65-74)</td>
<td>734 (28.53)</td>
</tr>
<tr>
<td>Elderly (75+)</td>
<td>647 (25.15)</td>
</tr>
<tr>
<td><strong>Race</strong> (N=2573)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2251 (87.49)</td>
</tr>
<tr>
<td>Black</td>
<td>297 (11.54)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8 (0.31)</td>
</tr>
<tr>
<td>Asian</td>
<td>6 (0.23)</td>
</tr>
<tr>
<td>American Indian</td>
<td>1 (0.04)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (0.19)</td>
</tr>
<tr>
<td>Unknown</td>
<td>2 (0.08)</td>
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<tr>
<td><strong>Primary Payer</strong> (N=2358)</td>
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<tr>
<td>Medicare</td>
<td>1617 (68.58)</td>
</tr>
<tr>
<td>Anthem BCBS</td>
<td>277 (11.75)</td>
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<tr>
<td>Medicaid</td>
<td>184 (7.80)</td>
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<tr>
<td>Commercial</td>
<td>172 (7.29)</td>
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<tr>
<td>Self-pay</td>
<td>91 (3.86)</td>
</tr>
<tr>
<td>Other</td>
<td>20 (0.85)</td>
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</tbody>
</table>

### Types and Number of Medication-Related Problems (n = 13,934)

- **Medication Reconciliation**: 5000
- **Noncompliance**: 4000
- **Needs Additional Drug Therapy**: 3000
- **Dosage too Low**: 2000
- **Unnecessary Drug Therapy**: 1500
- **Adverse Drug Reaction**: 1000
- **Dosage too High**: 500
- **Ineffective Drug**: 100

Mean number of problems per patient: 5.48±5.5, range 0 - 38
Physician Comments

"This is hands down the most helpful program that has ever been offered in our primary care clinic. It has been enormously useful to me as a provider--- it saves tremendous time and the pharmacists are a great resource for medication related questions.

It has likewise been tremendously helpful to patients-- it has improved their understanding of their medications and disease process, has saved them money and has likely improved outcomes and decreased risk by ensuring compliance with prescribed therapies. The best thing since sliced bread, in my humble opinion."

Care Coordinator Comments

"...increased understanding of the medications by patients helps increase compliance with medication regimens."

"I feel that the pharmacists that work in our clinic make a difference with EVERY patient they come in contact with. I am always grateful for their knowledge and assistance."

"Our pharmacist has a large role in helping our team achieve top notch patient care."

"Their knowledge is so essential in family practice."
Patient Satisfaction at 6 Months (n=212)

My pharmacist(s) in the IHARP program:

- Clear up any problems related to obtaining my medications.
- Give complete explanations about my medications.
- Help me to avoid having problems with my medications.
- Follow up on my questions and concerns.
- Provide better care than any other pharmacists with whom I have worked.
- Consider my ability to pay when providing my medications.
- Work with me to implement my medication care plan.
- Make me feel that my care is their top priority.
- Discuss my medications with my doctor to ensure they are appropriate for me.

0% 25% 50% 75% 100%

- % Strongly Agree
- % Agree
- % Not Sure
- % Disagree
- % Strongly Disagree

Patient Satisfaction at 6 Months (n=212)

As a result of the IHARP Program:

- I have improved taking my medications as prescribed.
- I have a better understanding of my medications.
- I have a better understanding of my health problem(s).
Clinical Outcomes - Hypertension

At baseline 897 of the 1953 patients with a diagnosis of hypertension had a SBP of >140 mmHg and 320 had a DBP of > 90 mmHg.

Clinical Outcomes - Diabetes

- At baseline, 591 out of 1137 diabetic patients had an A1c < 8%.
- 368 patients were poorly controlled with A1c > 9.
- 25.5% have achieved A1c < 8 after enrollment in IHARP.
At baseline, 529 out of 921 patients with hyperlipidemia had LDL values < 100 mg/dL at baseline. 
- 182 patients had LDL >130 at baseline. 27.3% have now achieved goal <100 at the most recent follow up.

**LDL Reduction for Patients with Poor LDL Control LDL > 130 mg/dL (N=99)**

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<tr>
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<th>Baseline</th>
<th>Follow-up</th>
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<tbody>
<tr>
<td>Mean LDL (mg/dL)</td>
<td>154.9 ± 21.1</td>
<td>125.8 ± 39.4</td>
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