APPENDIX A: A MODEL FOR APPLYING REFORM TO YOUR OWN ORGANIZATION

Care redesign is complicated task that requires a great deal of exploratory evaluation to identify priorities, feasibility, and sustainability. When administrators, clinicians, and other stakeholders are deciding whether or not to pursue care redesign they need have a robust understanding of how it will change the financial inflows and outflows of business activities. For example, extending clinic hours might cost a practice additional employee salary costs, but will decrease hospitalization costs because patients could walk into the clinic instead of the ER. A more fundamental question is how the totality of upfront redesign costs can be financed—a per member per month contribution, a bundle payment, etc. Figure 1 below is a starting point for clinical leaders working through the complex process of sustainable care redesign. It is a model that organizations can use when having conversations with payers about the costs and possible savings associated with the care redesign initiatives.

The left side of this simple and sample cost-benefit model accounts for the major upfront costs associated with the three year care redesign program and the its annual running costs—staff required to coordinate between the redesign program and normal business operations, for example. The right side of the model captures the ER and hospitalization costs the program seeks to reduce over the 3 years. These costs are then used to calculate total savings the redesign program. Those savings can then be used to fund the care redesign and incentives stakeholder buy-in.

Total startup cost for a care redesign might range from hundreds of thousands to the millions. Analyzing the relevant costing associated with care redesign, whether it be developing a clinical pathway or accounting for the retraining of clinical and administrative staff, is a critical step to ensure sustainability and feasibility.

Before this model can realistically be built, however, an organization must gather some basic data to assist in making the business case to a payer of why they should invest in your program. The questions in Figure 2 will help a practice obtain an understanding of baseline costs and a rigorous estimate of additional costs and savings will help frame and guide negotiations with payers.

### FIGURE 1 Sample Cost-Benefit Model

<table>
<thead>
<tr>
<th>Upfront Care Redesign Costs</th>
<th>Average Cost of ER Visits</th>
<th>Average Cost of Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program and clinical staff</td>
<td>$600,000</td>
<td>Cost of ER Visit</td>
</tr>
<tr>
<td>Clinical pathways development</td>
<td>$2,000,000</td>
<td>Annual rate of ER visits per 10,000</td>
</tr>
<tr>
<td>Technology</td>
<td>$175,000</td>
<td>Total Annual ER Costs</td>
</tr>
<tr>
<td>Extended hours clinic</td>
<td>$100,000</td>
<td>$4,800,000</td>
</tr>
<tr>
<td><strong>Total Upfront Costs</strong></td>
<td>$2,875,000</td>
<td><strong>Total Annual ER Costs</strong></td>
</tr>
<tr>
<td><strong>Annual Redesign Running Costs</strong></td>
<td>$1,142,857</td>
<td><strong>Average Cost of Hospitalization</strong></td>
</tr>
<tr>
<td><strong>TOTAL PROGRAM COST OVER 3 YEARS</strong></td>
<td>$6,303,571</td>
<td>Per diem cost of hospitalization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average length of hospital stay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of hospitalization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual rate of hospitalization per 10000</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Annual Hospitalization Cost</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$10,848,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Cost Over 3 Years</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$46,944,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Savings Over 3 Years From:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20% reduction in ER visits (noncompound)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$2,880,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30% reduction in hospitalization (noncompound)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$9,763,200</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTAL PROGRAM SAVINGS OVER 3 YEARS</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$12,643,200</td>
</tr>
</tbody>
</table>

NOTES: Note: The upfront care redesign cost estimates come from the COME HOME grant cost categories, and are adjusted based on the number of clinics grant monies were distributed to, among other factors. The annual redesign running costs are an approximation based on NMCC’s COME HOME total amount and scaled to a practice size of 10,000. The benefits—cost of ED visit, hospitalization costs, days spent in hospital, and total ED visits and hospitalizations—are national averages from the CDC and Kaiser Family Foundation.
## FIGURE 2 Sample Business Case Questions for Organizations

<table>
<thead>
<tr>
<th>Care Redesign Questions</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market Analysis</strong></td>
<td></td>
</tr>
<tr>
<td>Patient Demographics and Services</td>
<td></td>
</tr>
<tr>
<td>Can the care redesign (clinical pathways, etc.) be applied across my entire patient</td>
<td>Strategic planning</td>
</tr>
<tr>
<td>population regardless of disease type or will the redesign need to be stratified by</td>
<td></td>
</tr>
<tr>
<td>risk or other measure?</td>
<td></td>
</tr>
<tr>
<td>What is the average cost per patient over a 30, 90, 180 day window?</td>
<td>Charge data</td>
</tr>
<tr>
<td>Which patients are most at risk to be hospitalized/visit the ER?</td>
<td>Risk stratification using claims data and patient records</td>
</tr>
<tr>
<td>At what rate is the population I serve hospitalized/visiting the ER?</td>
<td>Claims data</td>
</tr>
<tr>
<td>How much does an average hospitalization/ER visit cost? How much of that care could</td>
<td>Charge data</td>
</tr>
<tr>
<td>have been provided in a different setting?</td>
<td></td>
</tr>
<tr>
<td>What is the average length of stay?</td>
<td>Claims data, patient records</td>
</tr>
<tr>
<td><strong>Payer Market and Costs</strong></td>
<td></td>
</tr>
<tr>
<td>What are your patient payer demographics (i.e. Medicare, Medicaid, IHS, private payer)?</td>
<td>Claims data</td>
</tr>
<tr>
<td>What current costs are not adequately covered by payers?</td>
<td>Budget analysis</td>
</tr>
<tr>
<td>How much do costs vary between payers and is care redesign sensitive of that variance?</td>
<td>Claims data</td>
</tr>
<tr>
<td>What is the relationship with the local hospital? How can services be coordinated to</td>
<td>Strategic planning</td>
</tr>
<tr>
<td>reduce service duplicated and ensure proper coordination?</td>
<td></td>
</tr>
<tr>
<td><strong>Care Redesign Framework Questions</strong></td>
<td></td>
</tr>
<tr>
<td>Site of Care Reforms</td>
<td></td>
</tr>
<tr>
<td>Will newer technologies (electronic health records, smart devices, automated telephone</td>
<td>Estimate from EHR provider</td>
</tr>
<tr>
<td>systems, etc.) be required to service patients? How much will this cost?</td>
<td></td>
</tr>
<tr>
<td>Will any services be consolidated into one location?</td>
<td>Claims data</td>
</tr>
<tr>
<td>Will the physical building need to be upgraded? How much does that cost?</td>
<td>Contractor estimate</td>
</tr>
<tr>
<td>How much of the redesign startup costs will not be reimbursed?</td>
<td>Strategic planning</td>
</tr>
<tr>
<td>Will the redesign change medical supply costs?</td>
<td>Claims data</td>
</tr>
<tr>
<td>Will the redesign change my hours of operation and therefore change the cost of rent</td>
<td>Building estimate</td>
</tr>
<tr>
<td>and utilities?</td>
<td></td>
</tr>
<tr>
<td>Team Approaches to Care</td>
<td></td>
</tr>
<tr>
<td>Will care redesign shift employee responsibilities? Will you need to retrain or hire</td>
<td>Employee capacity and salary data</td>
</tr>
<tr>
<td>new administrative, program, or clinical staff?</td>
<td></td>
</tr>
<tr>
<td>How do the number of staff hours and rates change based on providing extended hours?</td>
<td>Salary data</td>
</tr>
<tr>
<td>How will a phone triage system impact the volume of care delivered or diverted?</td>
<td>Claims forecasting</td>
</tr>
<tr>
<td>How much additional patient education will be provided? What are the costs for materials,</td>
<td>Materials costs and salary data</td>
</tr>
<tr>
<td>staff time, etc.?</td>
<td></td>
</tr>
<tr>
<td>Improved Decision Support</td>
<td></td>
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<tr>
<td>How much does it cost to develop a clinical pathway program (reimbursement for physicians,</td>
<td>Salary data, technology costs</td>
</tr>
<tr>
<td>database support, technology costs?)</td>
<td></td>
</tr>
<tr>
<td>How often does the pathway need to get updated?</td>
<td>Strategic planning</td>
</tr>
<tr>
<td>How will your revenue/operating costs change given new clinical pathways that change the</td>
<td>Claims data</td>
</tr>
<tr>
<td>volume of services [PET, CT, mammography, etc.] provided?</td>
<td></td>
</tr>
<tr>
<td>How do pathways impact the pharmacy costs and how does that impact the margin earned on</td>
<td>Drug cost data</td>
</tr>
<tr>
<td>drug costs?</td>
<td></td>
</tr>
<tr>
<td>Collecting and Using Data</td>
<td></td>
</tr>
<tr>
<td>How much does the EMR cost to implement?</td>
<td>Estimate from EMR company</td>
</tr>
<tr>
<td>How much are monthly or yearly update/maintain fees for the EMR?</td>
<td>Estimate from EMR company</td>
</tr>
<tr>
<td>How much does it cost to train your staff on the EMR?</td>
<td>Salary data</td>
</tr>
<tr>
<td>Do I need to hire support to analyze claims and other data?</td>
<td>Salary estimate</td>
</tr>
<tr>
<td>How will you evaluate your clinical and financial models? Do you need to outsource this?</td>
<td>Strategic planning</td>
</tr>
</tbody>
</table>