Thank you for participating in the Medication Administration System Survey – Nurses’ Assessment Survey (MAS-NAS) project. Completing this form indicates you recognize that this is a research project.

If you previously completed a MAS-NAS, please complete this form so we can learn how barcode/eMAR has changed how you administer medications. We will compare nurses’ responses on this MAS-NAS with the previous MAS-NAS to learn the impact of converting to barcode/eMAR on BWH nurses.

If this is your first MAS-NAS, we would like to learn your beliefs about the system.

Please create a five digit confidential identifier called SUM. This allows us to maintain your privacy and while being able to compare surveys taken at different times. Even if this is your first survey, please compute your SUM. We ask you to calculate the following number and place it in the space provided on the upper right hand corner of the survey form. The number is the SUM of the last five digits of your social security number added to the last five digits of your home telephone number. If your telephone number changed, please use the number you previously used. Only the SUM of those two numbers should be recorded on the first page of the survey. If your sum has more than five digits, record only the last five. See example below

**Example:**

| Last five social security numbers = | 52346 |
| + | 58721 |
| **SUM = 111067** |
| ENTER 11067 (last five) |

After calculating your SUM, please:

Write your SUM on the next page, Tear off the right side of this page or write over your personal numbers, and complete the survey.

Thank you for your participation in this important project.

Anne Bane, RN, MS
The following statements describe experiences and beliefs about the current medication administration system you use. By current medication administration system, we mean the institutional structures and operational policies that direct and support the process and procedures of delivering/administering pharmaceutical products to patients. This includes all activities from medication ordering to dispensing to administration and documentation as well as all supplies and technologies associated with the current medication system, such as computer terminals, medication storage units, drug/drug interaction information, patient education sheets, infusion pumps, tubings, syringes, etc that are required in the process of getting medications to patients. Completing this survey should take about 10 minutes. By completing this survey, you are indicating consent to participate in this evaluation. Please read each statement and circle the number that best expresses your own experiences and beliefs. There are no right or wrong answers. Do not write your name on the survey. Please indicate the degree to which you agree or disagree with each item by using the following RATING SCALE:

Circle 1 if you strongly agree with the statement.
2 if you moderately agree with the statement.
3 if you slightly agree with the statement.
4 if you slightly disagree with the statement.
5 if you moderately disagree with the statement.
6 if you strongly disagree with the statement.
NA if the statement does not apply to you.

Example: The current medication administration system provides adequate information about possible medication side effects.
Answer: If you believe that you always have access to the type and amount of information you need to be able to assess for and manage potential side effects of medications you administer, you should circle 1 because that statement best expresses your belief.

Please turn to the next page and continue the survey.
<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Moderately Agree</th>
<th>Slightly Agree</th>
<th>Slightly Disagree</th>
<th>Moderately Disagree</th>
<th>Strongly Disagree</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Because of information available through the current medication administration system I know both the intended actions and side effects of medications I administer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>2. I find the drug alert feature (drug/drug or drug/food interaction) of the current medication administration system helpful.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>3. The current medication administration system makes it easy to check active medication orders before administering medications.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>4. The current medication administration system provides me with information to know that a medication order has been checked by a pharmacist before I administer the medication.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>5. The current medication administration system promotes 2-way communication between clinicians (MD, Pharmacist, RN) about medication orders.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>6. I have access to the systems that support medication administration (physician’s orders, drug information) when I need them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>7. The drug information available through the current medication administration system is easy to get when I need that information.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>8. When I see a message that acknowledges and accepts a known drug/drug interaction, I know that both physician and pharmacist communicated and agreed on the order.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>9. I know where all the medications I need are stored (either on the unit or if they need to be procured from the pharmacy).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>10. The current medication administration system helps me to be efficient at medication administration.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>11. The current medication administration system makes it easy to check that I am following the “5 rights” when I administer medications.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
</tbody>
</table>
Medication Administration System – Nurses’ Assessment Survey – After barcode/eMAR, 2005

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<tbody>
<tr>
<td>12. The turnaround time for receiving medications needed “stat” or for patients newly admitted to the unit is adequate.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>13. The current medication administration system is effective in reducing and preventing medication errors.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>14. The current medication administration system is user-friendly to the nurses who administer medications.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>15. The equipment and/or supplies needed to administer medications are readily available to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>16. Information available through the current medication administration system helps me to know what to do should my patient have any bad reactions from a medication.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>17. I have to keep stashes of medications to be sure I have medications I need when I need them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
<tr>
<td>18. When I see a message that acknowledges and accepts a known drug/drug interaction, I believe it is appropriate to give the medication.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>NA</td>
</tr>
</tbody>
</table>

Please add any comments you wish about the current medication administration and the degree to which components of the current system support your ability to administer medications safely and professionally.

If you could change one thing in the current medication administration system, what would it be?

Please turn to the next page and continue the survey
Comparing now (using barcode/eMAR) with before, please respond to the following 7 statements.

1. It is easier to do all the checking steps needed during the medication administration process.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

2. This is a safer system for patients.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

3. With the new system it is easier to access information I need to administer medications.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

4. I am more satisfied with this new medication administration system than with the previous one.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

5. I have more time to spend with patients.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

6. Barcode/eMAR has made the medication administration process more efficient for me.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree

7. Medications are more readily available when I need them for patients.
   - Strongly Agree
   - Moderately Agree
   - Slightly Agree
   - Slightly Disagree
   - Moderately Disagree
   - Strongly Disagree
Medication Administration System – Nurses’ Assessment Survey – After barcode/eMAR, 2005

Overall, how satisfied are you with the current medication administration system? Please circle.

1  2  3  4  5  6  7  8  9  10
Completely dissatisfied neither satisfied nor dissatisfied Completely satisfied

Please provide the following information about yourself and your background by filling in or circling your response.

1. Gender __
2. Age _____
3. Highest nursing degree: LPN Diploma AS/AD BS/BSN MS/MSN
4. Number of years employed as a nurse ___
5. Number of years employed at Brigham and Women’s Hospital _____
6. Number of hours worked in a typical week _____
7. Typical shift rotation schedule: all shifts evenings nights rotate D/E rotate D/N all days 7A-7P 7P-7A
8. Typical weekly schedule: mostly weekend/holiday mostly Monday-Friday rotate weekdays/weekends/holidays
9. Current position: staff/direct patient care (staff RN/NIC) leadership/management education other __________
10. Compared to your nursing peers, how do you rate your computer skills? above average average below average
11. Do you use a computer at home? yes no
12. How do you rate your skill at obtaining patient care information from the BWH computer systems?
elegant good fair poor
13. Did you work on an in-patient nursing unit at BWH before barcode/eMAR was implemented? yes no
14. Did you ever use barcode/eMAR in another hospital before working at BWH? yes no

THANK YOU – Please give your survey to your nurse manager.