

PDSA worksheet

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Project Lead	Ademola Aderoju, MD (PGY-3)	Title	Evaluation of Clinic Support Website (CSW)
Team	Ademola Aderoju MD, Tom Miller MD, Annie Whitney	Change	Increase use and assess fidelity of referral orders through CSW
Date Range	May to June 2008	Cycle #	1
		Key Words	Referral, Clinic Support Website

BACKGROUND: What led you to start this project? Is this cycle a continuation of another cycle? Why is this topic relevant? Include any baseline data that has already been collected. Include relevant information from literature.

There are a number of patient care processes that require residents be physically present in the ACC clinic. These processes include making specialty clinic referrals, ordering add-on labs, ordering diagnostic tests, and requesting nurses communicate information to patients by phone or mail. However, it is often necessary to have these processes ordered when residents are not in clinic. An example is orders or referrals that are triggered by lab results that return after clinic hours. Placing these orders is often problematic since residents typically spend only half a day per week in clinic. The current system requires residents to either come in on non-clinic days to place orders via a paper based system or make phone calls to have clinic staff place the orders. This places significant strain on residents and increases the work load of the clinic staff. It also has the potential to delay medical care and compromise patient satisfaction. In an attempt to remedy this problem, the division of General Internal Medicine is setting up a web page that would allow for electronic transmission of these orders to clinic staff.

PLAN:

Aim/Objective Statement for this cycle What do you hope to learn? What are you trying to improve (aim), by how much (goal) and by when (timeframe)?

1. Evaluate the effectiveness of using the clinic support website to electronically transmit orders to clinic staff.
2. Perform a preliminary assessment of resident satisfaction with the new system.
3. Identify areas of improvement

Specific questions to address in this cycle:

1. Evaluate the fidelity of using three specific links on the clinic support website i.e. how often are the transmitted orders carried out. The links to be assessed are:
 - i. Add-on labs
 - ii. Specialty Clinic Referrals
 - iii. Nurse assistance/call patient.
2. Evaluate resident satisfaction with the system using a focus group of residents who will use the system consistently for 4 weeks and provide feedback via questionnaire
3. Identify changes that could make the system more effective and user friendly.

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Predictions/Hypotheses (What do you think will happen?)

The electronic transmission of orders through the three selected website links will significantly ease the burden experienced by residents when trying to access the chosen clinical support services.

Plan for change/test/intervention

1. Fidelity of orders placed through selected links on the clinical support website will be determined. An attempt will be made to identify problems and potential solutions will be proposed
2. Residents who use the website will provide feedback via questionnaire with respect to user satisfaction and suggestions for possible modification.

Who (target population) Internal medicine residents

What (change/test):

1. Fidelity of completion for orders transmitted through selected links on the clinical support website
2. Level of satisfaction with electronic transmission of selected orders via support website

When (dates of test): May 2008

Where (location): ACC Internal Medicine Clinic

How (description of plan):

1. Internal Medicine residents with out-patient clinics in the month of May 2008 will be oriented to the clinical support website and encouraged to use it.
2. Requests placed via the website for specialty clinic referrals, add-on labs, and nurse assistance will be electronically tracked. Copies of these requests will be sent to Dr Aderoju via e-mail.
3. Fidelity of completion for these orders will be determined using the A2K and WEBCIS systems for verification.
4. A five point scale will be used to evaluate resident satisfaction with the system.
5. Feedback will be solicited from residents and clinical staff using the system for suggestions to improve/streamline the process.

Measures (What will you measure in order to meet your aims? How will know that a change is an improvement? Will you use outcome or process measures?)

Plan for data collection

Who (will collect): Ademola Aderoju

What (measures):

1. Evaluate fidelity of completion for orders placed through the website
2. Track change in use of the selected website links by week
3. Determine resident satisfaction using a five point scale questionnaire

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When (time period): May to June 2008

Where (location): ACC Internal Medicine Clinic

How (method):

1. Requests for specialty clinic referrals, add-on labs, and nurse assistance made through the website will be tracked via e-mail
2. WEBCIS and A2K systems will be used to check for completion of these orders.
3. The fidelity of completion will be evaluated. For specialty clinic referrals, fidelity will be assessed in blocks of one week, based on when the order was placed. Add-on labs and nurse assistance requests will be assessed for overall fidelity of completion.
4. Rate of use of the website referral system will be evaluated over 4 weeks by tracking referrals via e-mail.
5. Surveys will be sent out to residents at the end of the 4 week period to evaluate satisfaction with the system.

DO: Carry out the change/test. Collect data.

Note when completed, observations, problems encountered, and special circumstances. Include names and details.

1. Jo Williams set up Dr Aderoju's e-mail address to receive copies of all requests for specialty clinic referrals, add-on labs, and nurse assistance. These requests were tracked from 05/05 to 05/31/2008. There was a problem with the nurse assistance request notifications. These e-mails came through blank.
2. Data on the referrals was entered onto an excel spread sheet, with inclusion of the following information:
 - a. patient MRN
 - b. date of request
 - c. requesting physician
 - d. specialty clinic requested
 - e. appointment date

The data was further organized into one week blocks according to date of referral request.

The fidelity of order completion was determined for each of the following groups:

- a. Specialty clinics that require the referred patient call prior to appointment being scheduled
- b. Specialty clinics that require physician review prior to scheduling
- c. Specialty clinics without additional requirements prior to scheduling.

Problems encountered include:

- a. MRN entered wrong by requesting physician
- b. Zeros filled in to complete mandatory 8 digits instead of check digit.
- c. Selection of wrong specialty clinic from pull down menu
- d. Incomplete list of specialty clinics on pull down menu with referrals sometimes being made to the wrong sub-specialty (e.g. referral to general neurology for headaches)

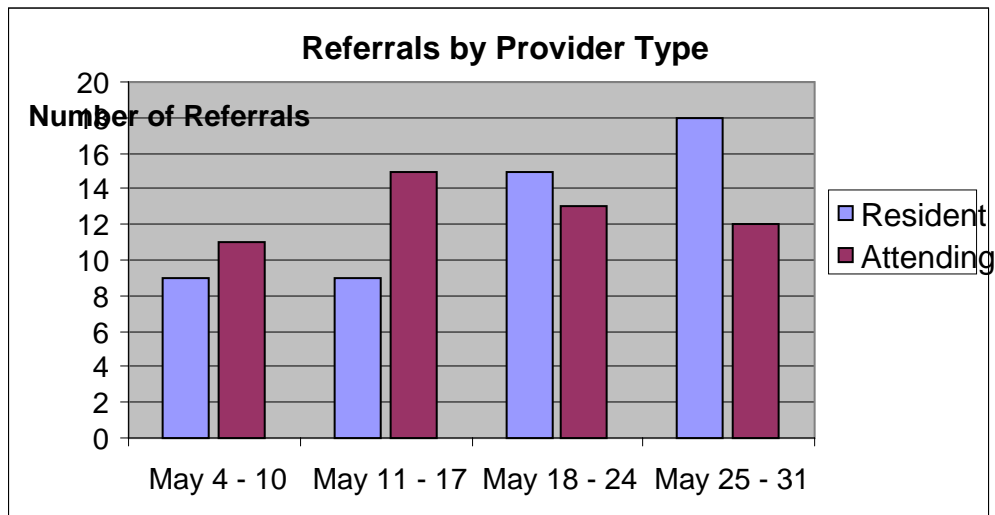
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- e. Patients leaving clinic without number to call for clinics that require patient call to schedule appointments. This required clinic staff (Erika Bynum) having to place calls to patient at home to give them the number
- f. Podiatry appointments not scheduled due to limited types of insurance accepted
- g. Some clinics require faxed requests which may further delay scheduling
- h. Low awareness and understanding of this system among housestaff. Occasional use of inappropriate links to place orders

STUDY: Summarize and Analyze data (quantitative and qualitative). Include charts, graphs.

Figure 1.



Number of referrals for each week placed through the clinic support website organized by provider type shows an increase in use by residents with time.

Fig 2. Number of Referrals for each clinic from 5/4 – 5/31

Number	Clinic
13	ENT, Neuro/sleep
9	OB/GYN
8	Ophthalmology
7	Urology
6	Cardiology, Dermatology, Ortho/spine
5	GI/Hepatology
4	Nephrology, Rheumatology
3	Anes/Pain, Neuro Subspecialty, Pulmonary
2	OB/GYN Subspecialty, Psych
1	Endocrine, Gen Surg, Hand, Plastics, Vasc Surg

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Figure 3

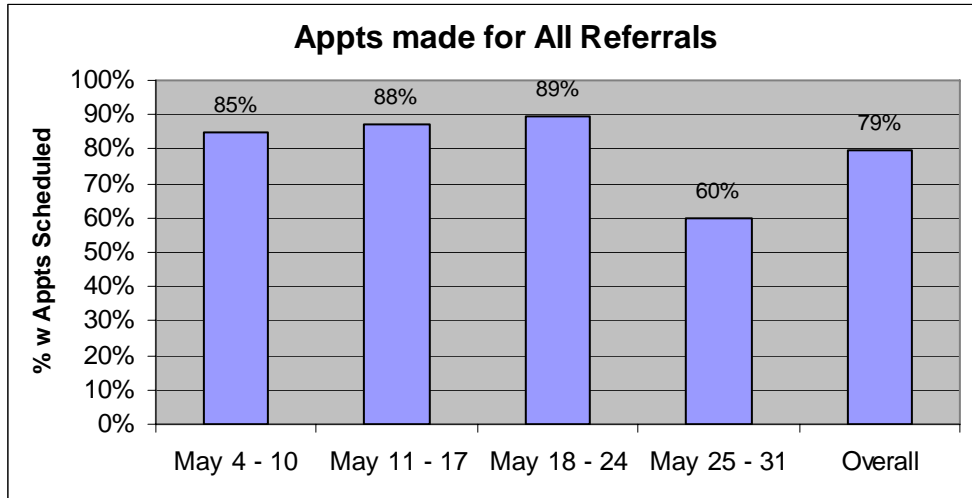
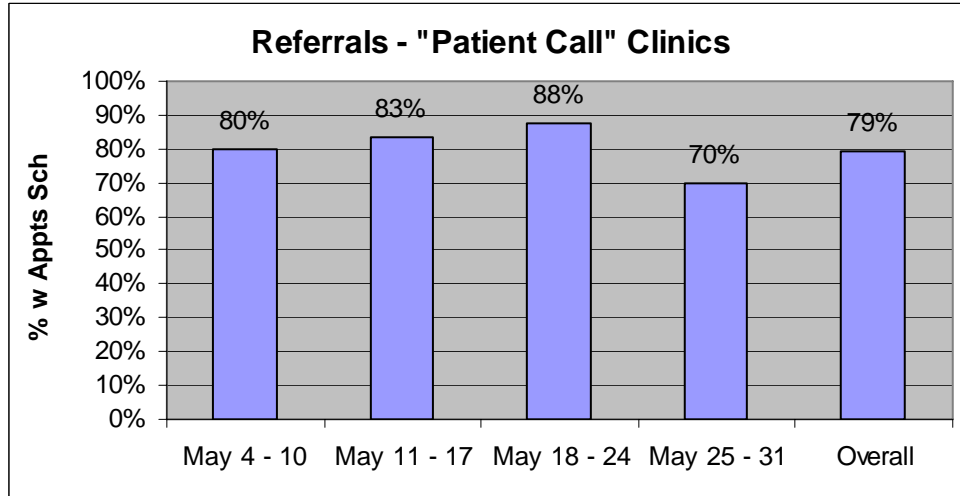


Figure 4



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Figure 5

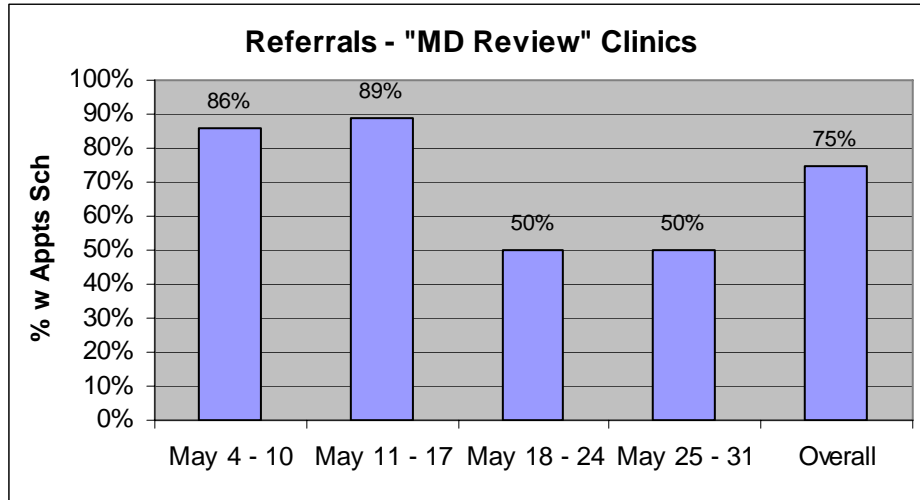
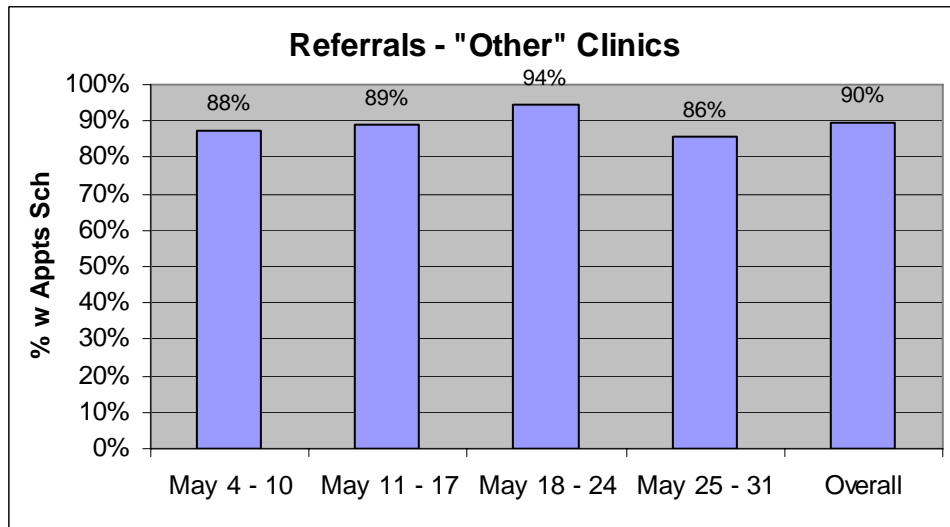


Figure 6



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Table 1 shows a sample questions on a survey sent out to 14 residents with 10 responses received back.

Table 1

	Agree strongly	Agree Somewhat
Website helpful tool	90%	10%
Made my job easier	80%	10%
Will improve patient satisfaction	70%	10%
Will improve quality of care	80%	10%
Will use in clinic in lieu of paper based system	90%	

Comments from users of specialty clinic referral weblink:

- **Very helpful! Can even do it from home and get confirmation emailed to you. Love it!**
- **I hope we can continue to have referrals for different [types of] imaging like CT [scans], MRI, etc**
- **Painful to enter in name, MR [number] and note date**
- **Was an excellent addition. My patient made the appointment and I received confirmation the appointment was scheduled.**
- **Helpful if lab values come back after a patient has left that requires specialty follow-up**
- **Easy to use and nice to see confirmation**

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ACT: Document/summarize what was learned. Did you meet your aims and goals? Did you answer the questions you wanted to address? List major conclusions from this cycle.

1. All 115 specialty clinic referrals made through the CSW were appropriately processed by the ACC Internal Medicine Clinic staff i.e. 100% fidelity. This was verified from the paper trail generated by Erika Bynum for each appointment. Actual appointments made varied from 75% to 90% depending on referral modality, for a variety of reasons as indicated as indicated below. For comparison, 283 referral requests were processed through the paper based system. Fidelity of completion for this was not assessed.
2. For clinics that require the patient call before appointments are scheduled, fidelity of completion as of 06/17/08 was 80%. The major obstacle was patients not calling the specialty clinic as requested
3. For clinics that require physician review, fidelity of completion as of 06/17/08 was 75%. The major obstacle identified was a waiting list for the specific clinics and the time it takes for these reviews to take place. This is underscored by the fact that completion rate for the first two weeks was 86% and 89%. The third and fourth weeks had completion rates of 50% each.
4. For clinics that allow scheduling of appointments directly from the Internal Medicine ACC clinic (i.e. do not require patients call or further physician review), fidelity of completion as of 06/17/08 was 90%. The major problem here was some clinics require requests be faxed in, resulting in a delay in the actual scheduling of appointments.
5. Six requests were received for add-on labs, and all six were processed appropriately giving a fidelity of 100%.
6. Requests for nurse assistance could not be assessed for fidelity of completion. This was because the e-mail copies of these requests sent to Dr Aderoju were blank. However from verbal communication with the clinic staff, the only problem identified was requests made that should have been sent through other links on the website (e.g. resident clinic or SDC appointment requests and requests for ancillary services). This should be remedied by further physician education and orientation to the website. Plans for this are indicated below.
7. Acceptance by residents in the focus group used was excellent as seen in table 1 and the comments from the survey. Further evidence of acceptability is the increase in use of the website by residents over the four weeks tracked as seen in figure 1. Specifically, it did appear to ease the burden on residents trying to place orders when away from the clinic.

Other problems identified include:

1. Wrong MRN number entered by physician into webpage.
Solution: Physician education, plan for pre-clinic conference to orient users to website.
2. Zero filled in before MRN instead of adding check digit to complete mandatory 8 digits for MRN field
Solution: Added annotation to field indicating requirement for check digit.

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3. Selection of wrong subspecialty clinic from pull down menu. This was mostly due to the list being incomplete and/or different specialty clinics being grouped under a generic name e.g. Neurology instead of listing sleep, headache, movement disorders, etc.
Solution: Pull down menu updated with expanded list of specialty clinics supplied by Erika Bynum.
4. Patients not being given the phone number of clinics that require that they call to have appointments scheduled. This was mostly because physicians were not aware of this requirement and did not have access to the phone numbers
Solution: Pop-up box added that prompts users to give phone number to patients when appointment is being scheduled. There is also a check box to indicate whether or not this was done so clinic staff can follow up if necessary
5. Low level of awareness among housestaff that this tool is available. There was also some confusion as to the appropriate use of the links on the website
Solution: Physician education, plan for pre-clinic conference to orient users to website.
6. Some appointments made with podiatry were not scheduled because of the limited number of insurance plans accepted by that clinic.
Solution: Division of GIM will contact podiatry to see if the number insurance plans accepted by podiatry can be expanded

Define next steps. Are you confident that you should expand size/scope of test or implement? What changes are needed for the next cycle?

1. Expand use of CSW to entire housestaff body
2. Develop tutorial to educate housestaff on the use of the CSW. This could be used during the ACC Internal Medicine Clinic orientation sessions.
3. Consider a larger survey following expansion to further evaluate acceptability and assess for further improvement
4. Expand links offered to include other ancillary services