



AN HQO INITIATIVE  
**Learning  
Community**  
Advancing Improvement in Primary Care in Ontario

# Advanced Access and Efficiency Workbook for Primary Care



# Section 4

## Measures



# 4.1 Summary of Advanced Access and Efficiency Measures

MEASURE	WHAT IS IT AND WHY DO IT?	HOW TO GATHER	FREQUENCY OF COLLECTION	TIPS
Panel size equation (see Section 4.2.1)	To understand the relationship between supply and demand within your practice, and to be able to develop strategies to balance if necessary.	Use the panel size equation.	Annually, or as changes in supply or demand occur.	If demand is greater than supply, remember that this is a yearly number. It must be divided by 12 to understand the number of appointments required monthly, and then by four to see the number of extra appointments needed each week, etc.
Third next available (TNA, 3NA) (see section 4.2.4)	This is the gold standard for measuring the length of time patients in your practice are waiting for an appointment. First and second available appointments are not used, as they could be the result of a recent cancellation.	At the same time on the first day of the work week, look ahead in the schedule for the TNA appointment slot and then count the number of days to that appointment. Do not count saved appointments or carve out model appointments.	Weekly until the value is consistently zero. Then use future open capacity to measure availability of appointments (see Section 4.2.9).	It is important to use a consistent method of data collection. Counting weekends is a choice (either do or don't) but the same method of data collection must be used consistently.
Supply (see Section 4.2.6)	The number of appointments available in the schedule. All appointments should be multiples of the short appointment length.	Count the number of available appointments for each work day.	You should understand supply on a daily, weekly and annual basis. Once established it does not have to be counted unless supply changes.	If provider supply increases or decreases permanently, then the equation must be recalculated.
Demand (see Section 4.2.5)	The number of appointments requested today for any day. Demand can be generated internally by the provider and externally by the patient. It is important to understand both internal and external demand, and to measure each separately using the tool provided in Section 5.1.	Using a tick sheet (see Section 5.1), place a tick mark for every appointment requested, depending on the origin. External demand is patient request and internal demand is provider request (see Section 4.2.5).	Daily until practice confidently knows range of demand for each working day.	It is important to gather this data anytime practice demand seems to be changing. It may be necessary to rebalance supply and demand.

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

# 4.1 Summary of Advanced Access and Efficiency Measures (cont.)

MEASURE	WHAT IS IT AND WHY DO IT?	HOW TO GATHER	FREQUENCY OF COLLECTION	TIPS
Activity (see Section 4.2.7)	The actual number of short appointment slots used that day. If the provider had additions, then the number will be higher than supply. If the provider had no shows or vacancies, then the number will be lower than supply.	From the EMR/EHR or schedule book, count the number of short appointments used each working day.	Daily until practice confidently knows the range of activity for each working day.	If the number of short appointments used is consistently greater than the number of appointments in the schedule, it is important to recalibrate appointments to better reflect what is actually happening in the practice. If the provider never starts before 9:15, for example, do not begin appointments at 9:00.
Continuity (see Section 4.2.12)	The number of times patients are able to see their own provider relative to other providers of the same discipline within the practice.	Calculate the percentage of patients seen by their own provider: Divide the number of patients of Provider X who were seen by Provider X in the past 30 calendar days by the total number of patients of Provider X who were seen by any provider in the practice in the past 30 calendar days. Multiply by 100.	Monthly.	Patients who see their own provider generate fewer visits.
No shows or failure to keep appointment (FTKA) (see Section 4.2.8)	Patients who do not keep appointments and do not notify the practice prior to their scheduled time. These appointments represent lost productivity and resources.	Keep track of the number of patients who fail to keep their appointments and record on the Demand, Supply, Activity and No Shows worksheets.	Daily.	When patients notify the practice of their inability to attend, their appointment is a cancellation and not a no show.
Future open capacity (see Section 4.2.9)	Use this measure when TNA is consistently zero. This measure will help you understand if too many appointments are being pre-booked to meet daily demand.	At the beginning of the month calculate the total number of appointments (supply). Also calculate the number of open appointments. Divide the open appointments by the total appointments and multiply by 100 to get the percentage of future open capacity.	This can be done daily, weekly or monthly. It is important to note that 50% booked at the beginning of the day is different than 50% booked at the beginning of the month.	Before using future open capacity, it is crucial to understand the relationship between supply, demand and activity within your practice. The amount of open capacity required is unique to each practice.

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

# 4.1 Summary of Advanced Access and Efficiency Measures (cont.)

MEASURE	WHAT IS IT AND WHY DO IT?	HOW TO GATHER	FREQUENCY OF COLLECTION	TIPS
Backlog (see Section 4.2.10)	The number of appointments between the present and the TNA appointment. Do not count appointments that are booked due to patient choice or physiology.	Count the number of appointments between now and TNA.	Anytime the TNA is increasing above acceptable practice targets.	Be sure the practice can distinguish between good backlog and bad backlog.
Cycle time (see Section 4.2.11)	The time elapsed between the scheduled appointment time and the time the patient is walking out the door. This information will help the practice understand the patient flow and where waiting occurs. It will also identify opportunities to improve efficiency or reduce the number of steps in the process.	A cycle time tracking sheet is necessary. Patients can be asked to track the times at various steps within their appointment. Other methods to collect this information may work better for your practice. This information is used in conjunction with the process map.	As often as is required to understand the length of patient visits in order to inform tests of change. Repeat each time changes are tested or implemented.	Decide as a team the number of random samples required to inform the quality improvement team. Sample at different times of the day or days of week.
Red zone (value-added time) (see Section 4.2.11)	Percentage of the cycle time spent in face-to-face contact with a member(s) of the care team.	On the cycle time form calculate all the minutes spent with members of the care team. Divide by the total number of minutes spent at the appointment and multiply by 100 to get the percentage of face-to-face time.	As often as is required to understand the length of patient visits in order to inform tests of change. Repeat each time changes are tested or implemented.	Include time the patient spends with all members of the care team that adds value to their visit.
Patient satisfaction survey (see Section 4.2.13)	Feedback from patients is essential to respecting their roles as partners within the care team.	Use the survey in Section 5 or a tool of your choosing. Select a random sampling.	At baseline, and whenever improved changes are implemented. Frequency will be a practice decision.	Do not do the survey if data are not going to be studied or acted on.



## 4.2 From Principles to Practice — A Place to Record Your Data

For data-gathering methods please refer to the Summary of Advanced Access and Efficiency Measures (Section 4.1).

The worksheets are available in Section 5.

### 4.2.1 PANEL SIZE EQUATION

**To Obtain Roster Balance:**

**Supply** must equal **Demand**

**Supply** – (# weeks worked annually) \_\_\_\_\_ x (# visits/weeks) \_\_\_\_\_ = \_\_\_\_\_  
must equal

**Demand** – (# patients) \_\_\_\_\_ x (patient visit rate) \_\_\_\_\_ \* = \_\_\_\_\_

### 4.2.2 PANEL SIZE EQUATION – INTERPRETATION

**Supply of visits** must equal **demand for visits**

1. Complete the panel size equation in Section 4.2.1.
2. Calculate the difference between your annual supply of appointments and your annual demand for appointments.
3. Identify the scenario on the next page — either A or B — that describes your practice, and read about what to do next.

\* Patient visit rate – Divide the number of unique patients seen in the last 12 months into the number of visits to the practice that these patients generated within the same period.

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### A If supply is greater than or equal to ( $\geq$ ) demand:

- If supply is  $\geq$  demand, you are ready to embark on achieving an Advanced Access working environment.
- Collect your TNA appointment measure. If it is constant, it confirms that your supply and demand are in balance. If it is not constant, this may be due to a recent change in demand or supply of appointments e.g., vacation, flu season, etc.

### B If demand is greater than ( $>$ ) supply:

- If demand is greater than supply by a modest margin of 600 visits\* or less (600 visits is used as a guide based on our experience with other practices implementing Advanced Access), then you must either increase supply, decrease demand or do both. Achieving an Advanced Access working environment is within your reach provided you are motivated to dramatically change how you work both as a provider and as a team.
- If demand is  $>$  supply by a large margin (more than 600 visits per year), you may have a panel size that is too large for your current supply. Looking at ways to decrease demand and increase supply is important, and examining efficiencies in patient flow and non-appointment work will also help. In a practice setting where demand is significantly greater than supply, the likelihood of reaching a zero TNA standard is less than for the previous two conditions. By applying many of the principles and strategies of access and efficiency, wait times for patients/clients can be significantly reduced, from weeks to days.
- Calculate the number of appointments per day by which either demand must be reduced or supply increased (or a combination of both) — e.g., decrease demand by one appointment and increase supply by one appointment — to achieve balance.

#### EQUATION

Annual demand – annual supply = X

$X \div \# \text{ weeks worked annually} = Y$

$Y \div \# \text{ days in work week} = \# \text{ appointments you must make up}$

#### EXAMPLE

$3380 - 3000 = 380 \text{ appointments/year}$

$380 \div 45 = 8.4 \text{ appointments/week}$

$8.4 \div 4 = 2.1 \text{ appointments/day}$

- Once balance has been found, it will be possible to assess the ratio of pre-booked to booked appointments that is required to meet daily demand.

\* A deficit in supply compared to demand of 600 visits translates to 13 visits/week or three visits/day for a provider working 45 weeks/year and four days/week (these numbers will change based on the number of weeks worked/year and days worked/week).

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### For Both Scenario A and B

- Tracking daily demand, supply and activity (DSA) data will help you understand the ratio of booked to pre-booked appointments needed to meet daily demand in relation to supply.
- Collect enough DSA data (a minimum of four weeks' worth — more is better) to find out the range of demand for each day worked (e.g., Monday, 19-22 calls; Tuesday, 17-20 calls; Wednesday, 15-18 calls; etc.).
- A different number of open appointments will be made available each day, based on the findings of the daily demand data (subtract daily demand from daily supply to determine the daily ratio of pre-booked to open appointments).
- Reduce your backlog — calculate the bad backlog and estimate how much time it will take to eliminate.
- Introduce/test the new schedule once bad backlog has been eliminated.
- Continue to collect DSA by sampling to see if the number of daily requests for appointments falls within the range calculated by daily demand data or if demand is changing in some way (e.g., collect one week on a Monday, another week on a Tuesday, etc.).
- Focus on finding efficiencies in your flow of appointments in the office and in non-appointment work. Process mapping is a tool that can help you find ways to be more efficient at appointments.

**Note:** A change in any number in the annual supply/demand equation will change the balance — e.g., a reduction in the visit rate will increase supply, an increase in days worked will increase supply, an increase in panel size will increase demand, a reduction in visits/day will decrease supply, etc.

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6



## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.3 DEMAND, SUPPLY AND ACTIVITY REFLECTIONS

1. Print and/or photocopy and use the DSA worksheet in Section 5.1.
2. Follow the instructions provided on the worksheet for tracking demand.
3. Internal demand represents future appointments made for patients when they are leaving your office, e.g., for follow-up appointments.
4. External demand represents every appointment made for patients/clients who contact the office requesting an appointment for today or for any future date.
5. Be sure to put more than one tick mark for patients/clients who take up a multiple of time slots; e.g., a periodic health exam may require three 15-minute appointments, or 45 minutes, which equals three tick marks.
6. Use the tables in Section 4.2.5 to add up the total internal and external demand and record daily.
7. Record supply total daily in Section 4.2.6.
8. Record activity total daily (number of actual appointments used; may be more or less than schedule template) in Section 4.2.7.
9. Record no shows daily in Section 4.2.8.
10. At the end of a minimum of four weeks (remember, the more data you have the better) review the data to see what they are telling you. Try to answer the following questions:

#### For demand data

- Looking at all the data collected, what is the range of demand for each day of the week (e.g., Monday, 19-22; Tuesday, 18-20; etc.)?
- How does the internal demand compare with the external demand?
- Could some of the internal demand be reduced by extending revisit rates or could another member of the care team deal with some of the return visits?
- How large is the variation of demand on a daily basis (e.g., 19-22 requests vs. 10-25 requests)?
- What strategies can be used to reduce this variation?

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### For supply and activity data

- What is the relationship between the scheduled supply and the actual number of appointments used (activity)?
- Is the activity consistently greater or less than the supply?
- Could the schedule be modified so that it is more aligned with the work that is actually taking place?
- Could other team members see some of the patients/clients instead?
- How much does the supply vary from week to week (e.g., Week 1, Monday, 30 appointments; Week 2, Monday, 20 appointments)?
- If there is a wide variation in supply, what contributes to this variation? Try to identify strategies to reduce the variation.

### For supply and demand comparisons

- Once the bad backlog is eliminated, can enough slots be left open each day to accommodate all the external demand (e.g., Monday, 21 slots; Tuesday, 19 slots, etc.)?
- Would doing this still leave enough slots available to pre-book chronic disease, prevention, pre-natal, etc., appointments to accommodate these populations of patients/clients?
- Are follow-ups being booked early in the day and later in the week to leave space for the higher-demand periods (if this is what your demand data showed)?
- What is your overall degree of belief that the daily demand and supply data are a true picture for your practice?

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.4 THIRD NEXT AVAILABLE

Record your TNA here:

MONTH	WEEK 1	WEEK 2	WEEK 3	WEEK 4	AVERAGE TNA
1 ( )					
2 ( )					
3 ( )					
4 ( )					
5 ( )					
6 ( )					
7 ( )					

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.5 INTERNAL DEMAND

Date Range:  
From: To:

Record your internal demand by day of the week here:

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.6 EXTERNAL DEMAND

Date Range:  
From: To:

Record your external demand by day of the week here:

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

Section 4 Measures

Section 5

Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.7 TOTAL DEMAND

Date Range:  
From: To:

Add your internal demand with your external demand to receive you total demand.

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

Section 4 Measures

Section 5

Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.8 SUPPLY

Date Range:  
From:                      To:

Record your supply by day of the week here:

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

Section 4 Measures

Section 5

Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.9 ACTIVITY

Date Range:  
From: \_\_\_\_\_ To: \_\_\_\_\_

Record your actual activity by day of the week here:

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

Section 4 Measures

Section 5

Section 6



# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

## 4.2.10 NO SHOWS

Date Range:

From:

To:

Record your no shows by day of the week here:

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	WEEKLY TOTAL
1						
2						
3						
4						
5						
6						
7						
8						
Daily Average						

Section 1

Section 2

Section 3

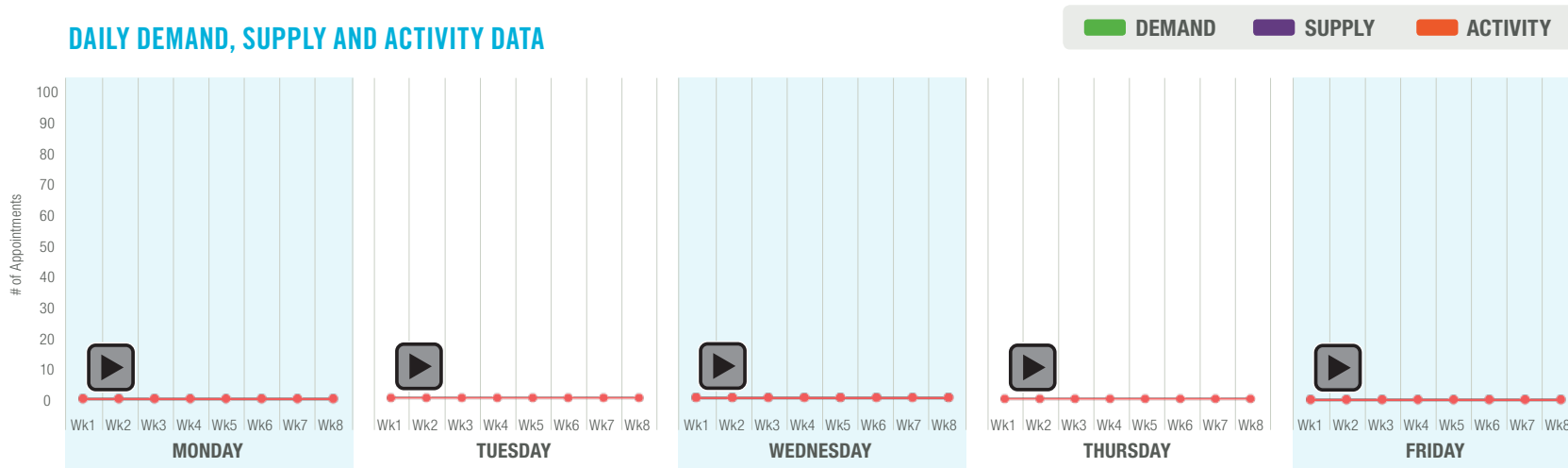
Section 4 Measures

Section 5

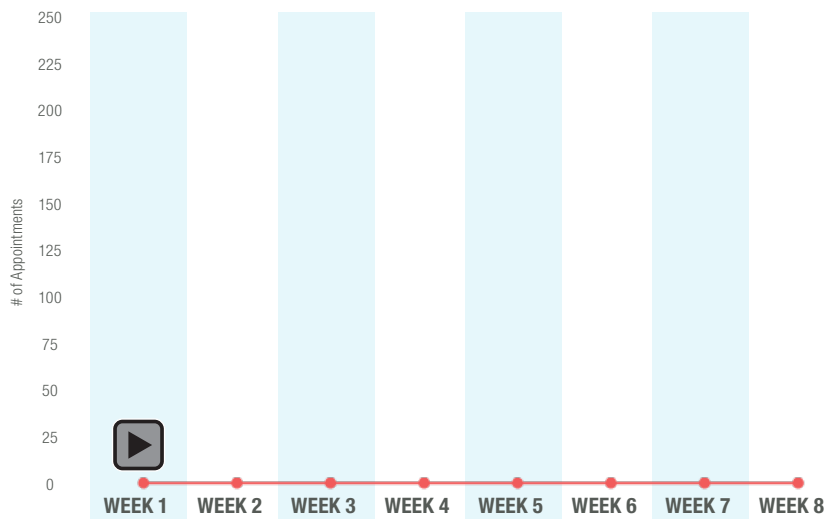
Section 6

# 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

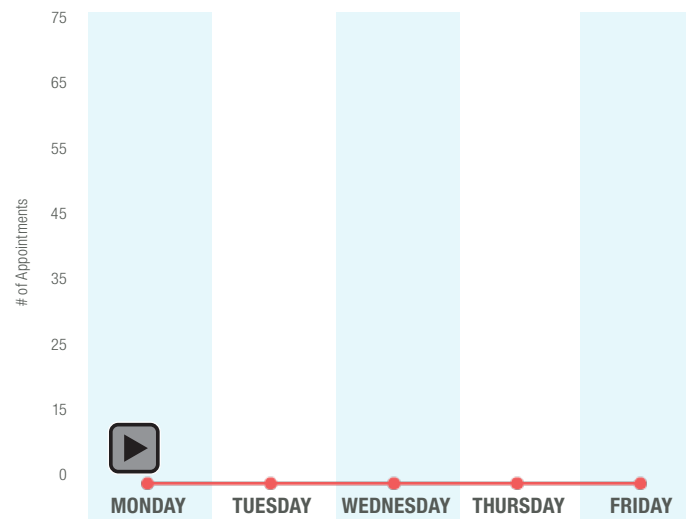
DAILY DEMAND, SUPPLY AND ACTIVITY DATA



WEEKLY DEMAND, SUPPLY AND ACTIVITY DATA



AVERAGE DEMAND, SUPPLY AND ACTIVITY DATA



Section 1

Section 2

Section 3

Section 4 Measures

Section 5

Section 6

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.11 FUTURE OPEN CAPACITY

Record your future open capacity here:

FUTURE OPEN CAPACITY		MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	% OPEN
Week 1	Open						
	Pre-booked						
Week 2	Open						
	Pre-booked						
Week 3	Open						
	Pre-booked						
Week 4	Open						
	Pre-booked						
Week 5	Open						
	Pre-booked						
Week 6	Open						
	Pre-booked						

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.12 BACKLOG REDUCTION

#### Step 1: Record

Number of booked appointments between now and date of TNA \_\_\_\_\_

Good backlog (Number of patients in schedule by choice or physiology) \_\_\_\_\_

Bad backlog = Line 1 – Line 2 \_\_\_\_\_

#### Step 2: Record

Initial backlog reduction through review of future schedule (duplicates, unnecessary appointments, etc.) \_\_\_\_\_

#### Step 3: Record

Remaining backlog = (number in Step 1) \_\_\_\_\_ – (number in Step 2) \_\_\_\_\_ = \_\_\_\_\_ appts.

#### Backlog reduction plan strategies (check all you plan to use)

- Add appointments to each day
- Add appointments on weekends
- Add hours at beginning or end of day
- Use lunch time
- Shift administrative time to patient time
- Temporarily add care team members (e.g., locum)
- Other \_\_\_\_\_

Start date \_\_\_\_\_ End date \_\_\_\_\_

The above strategies are time limited and used only until the backlog has been reduced.

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.13 CYCLE TIME/RED ZONE (VALUE-ADDED TIME)

EQUATION COMPONENTS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	FOR AVERAGE MONTHLY CYCLE TIME DIVIDE DENOMINATOR BY NUMBER OF PATIENTS SURVEYED
Numerator = # of minutes/visit spent with the care team (red zone time (value-added time))					
Denominator = # of minutes from the beginning of the scheduled appt. to the time patient leaves					
x 100 = percentage of red zone time (value-added time)					

### 4.2.14 CONTINUITY

FOR A PROVIDER	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
Numerator = # of visits/month to the care team						
Denominator = # visits/month to the practice						
x 100 = percentage						

Section 1

Section 2

Section 3

Section 4  
Measures

Section 5

Section 6

## 4.2 From Principles to Practice — A Place to Record Your Data (cont.)

### 4.2.15 PATIENT ACCESS SATISFACTION TALLY SHEET

Number of patients surveyed

QUESTIONS	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
How would you rate your satisfaction with getting through to the office by phone?					
How would you rate your satisfaction with the length of time you waited to get your appointment today?					
How would you rate your satisfaction with the availability of the clinician or staff member you wanted to see today?					
How would you rate your satisfaction with the personal manner of the person you saw today (courtesy, respect, sensitivity, friendliness)?					
How would you rate your satisfaction with the time spent with the person you saw today?					

### 4.2.16 SUSTAINING IMPROVEMENTS

One of the most frequent misunderstandings in sustaining improvements is assuming that all gains will continue without monitoring. It is important for the practice to continue to hold regular meetings to review performance measures and identify ongoing adjustments that may be required. The measures included in this workbook may not always need to be gathered, but high-performing teams monitor a

few key measures over time. If system problems are identified, the more detailed measures included here may be resumed, to help get teams back on track. It is suggested that three key measures, such as TNA or future open capacity, no show rates and patient satisfaction with access, be continuously monitored for sustainability of improvements.