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# Using PEN Clinical Audit Tool

- a “hands-on” training session



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**Acknowledgments:**

*These notes have been prepared by Noel Stewart of North East Valley Division of General Practice as a guide to using the PEN Clinical Audit Tool. They can be used in conjunction with the User Guide provided by PEN Computer Systems.*

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## Part 1 – Getting Started

### Installing Clinical Audit

#### Microsoft .NET Framework

PCS Clinical Audit requires the Microsoft .NET Framework version 2.0 to be installed prior to installing PCS Clinical Audit. This can be downloaded from <http://www.microsoft.com/downloads/details.aspx?FamilyID=0856EACB-4362-4B0D-8EDD-AAB15C5E04F5&displaylang=en>

#### PCS Clinical Audit

To install PCS Clinical Audit you must use Internet Explorer version 5.5 or later. Clinical Audit can be installed by going to the following URL:  
<http://www.pencs.com.au/ClickOnce/ClinicalAudit/publish.htm>

#### Log in details

The division will supply you with your login details, e.g.

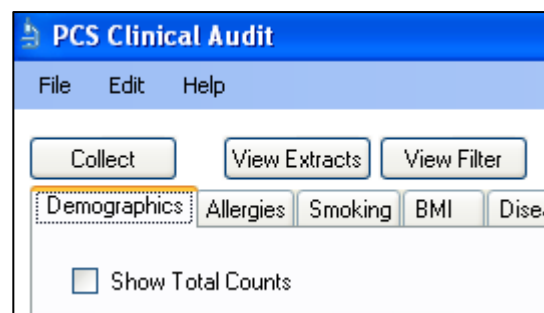
	<u>Licensed Application</u>	<u>Account Name (*)</u>	<u>Authorisation Key (*)</u>	<u>Registration Date</u>	<u>Expiry Date</u>
	ClinicalAudit	Your.name	Nevdgp1	15/12/2007	30/12/2008

Once you are logged in you are ready to collect your first data set.

### Collecting the first data set

Click on the **Collect** button – this could possibly take some time to collect the Medical Director data. This is known as an “extract” and is the equivalent of a “snapshot” of your data at a given time.

Once complete you will have a graph appear of the demographic breakdown of your practice.



#### Please note:

1. There is no need to press the **Collect** button again while completing the exercises below.
2. The next time you open PCS Clinical Audit you will click on the **View Extracts** button and then click once on the extract displayed.

## Part 2 – Using the Clinical Audit Tool

### Filling out the “CAT first report template”

1. Open Clinical Audit, then click on the “**View Extracts**” button and then click once on the date of the most recent extract.
2. Fill out all the “**Total population**” fields in the template, e.g. all the Allergy, Gender, Smoking and Diabetes Prevalence as well as ATSI numbers.
3. Click on the “**View Filter**” button and then under “**Last visit**” select **Active (3x < 2 years)**.  
Then click on “**Recalculate**” (Top right corner).
4. Click on “**Hide Filter**”.
5. Click on the Allergy and Smoking tabs to view the pie charts.
6. Click on the “**Show percentage**” box (left hand corner).
7. Fill out all the “**Active population**” fields in the template, e.g. all the Allergy, Gender, Smoking
8. For **Diabetes Prevalence** click on the **Disease** tab and then the **Prevalence** box to see your percentages. To get the total diabetes % add up the 3 diabetes type (I, II and Undefined)

**THE CAT** ....is  
**OUT OF THE BAG!**



### First Report template

Total population = all patients

Active population = seen 3 times in last 2 years

	Whole Practice	GP 1	GP 2
<b>1. Allergy Recorded</b>			
<u>Total population</u>	00		
Allergy recorded	%		
No Known Allergy recorded	%		
Nothing recorded	%		
<u>Active population</u>	00		
Allergy recorded	%		
No Known Allergy recorded	%		
Nothing recorded	%		
<b>2. Gender not recorded</b>			
<u>Total population</u>	00		
<u>Active population</u>	00		
<b>3. Smoking – nothing recorded</b>			
<u>Total population</u>	%		
<u>Active population</u> (Active (3x > 2 years))	%		
<u>Active population over 16</u> (Active (3x > 2 years))	%		
<b>4. Recording of ATSI patients</b>			
<u>Total population</u>	00		
<u>Active population</u> (Active (3x > 2 years))	00		
<b>5. Diabetes Prevalence</b>			
<u>Total population</u>	%		
<u>Active population</u> (Active (3x > 2 years))	%		
<u>% Diabetes in postcode area</u>	5.6%		
<u>Diabetics 65+, 8+ medications</u>	0 ( %)		
<u>Diabetics 65+, 5+ medications</u>	0 ( %)		
<b>6. Diabetes “at risk” *</b>			
<u>40-49 year olds</u>	00		
<u>50+ year olds</u>	00		

Put in the numeric (000) or % values (%) as indicated.

\* Diabetes “at risk”= active patient, hypertension, not on diabetic medications, BMI = o’weight or obese

### **Completing the First Report Template**

#### **Smoking exercise**

1. Click on the “View Filter” button and then under Age, type in 16 as the Start Age.
2. Click on “Recalculate” (Top right corner)
3. Fill out Active population over 16 in the template (as a %)
4. Remove the 16 from the Start Age and click on Recalculate again.

#### **ATSI patients**

1. Click on the “View Filter” button and then under Ethnicity check the ATSI box.
2. Click on “Recalculate” (Top right corner).
3. Write in the number.

#### **Gender not recorded**

1. Clear all filters (Clear General) and do a recalculate.
2. Click on the “View Filter” button and then under Gender click on Other.
3. Click on “Recalculate”.
4. Fill out the numeric value, not %.
5. Click on the View Pop. Button to see the patient names – this can then be printed or saved to a file (pdf or Excel).

#### **Allergy**

1. Check the Active patients and do a recalc.
2. Click on the Allergies tab
3. Click on the Show Percentage box (is it below 10%?)
4. Click on the Nothing recorded wedge of the pie chart.
5. Click on the Export button to reveal the patient names – you can print or save this list

#### **Diabetes Prevalence**

1. Click on the Disease tab.
2. Click on Prevalence – this will show the % for each of the diseases.
3. Add the 3 figures for Diabetes Type II, diabetes Type I and Undefined Diabetic

#### **Diabetes on 8+ Medications**

1. Show Filter and then click on the Conditions tab.
2. Place a tick in the Diabetes box and then Hide Filter.
3. Click on the HMR tab – record the number of patients on 8+ medications
4. Click on the Show percentage box - record the % of patients on 8+ medications
5. For patients on 5+ medications repeat steps above but add the numbers (and %) of 5 meds, 6 meds, 7 meds and 8+ meds

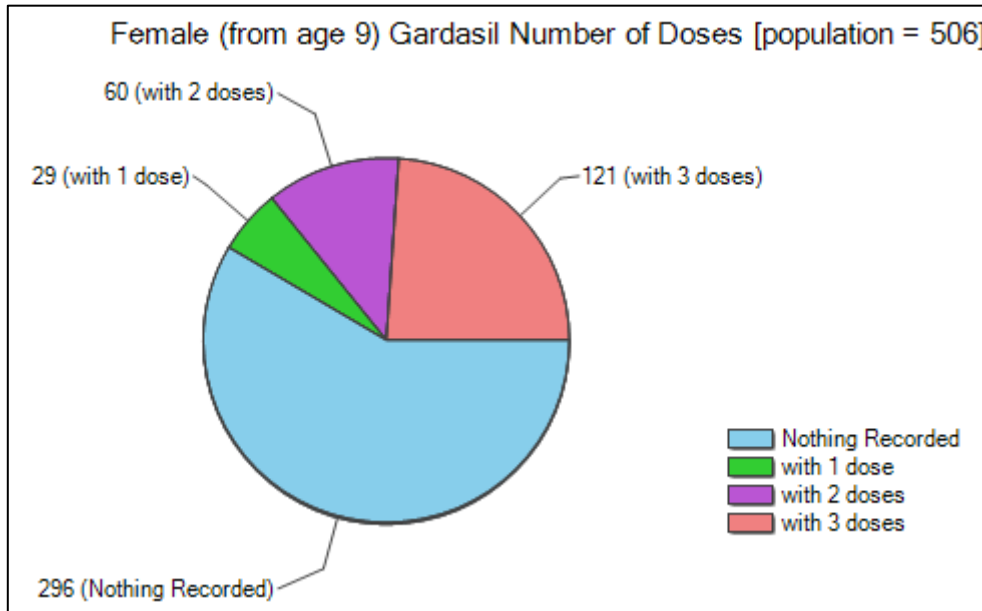
### **Reporting by individual doctor**

1. Click on the **Providers** tab.
2. Remove the ticks from all boxes except the first one and Recalculate
3. Fill out the template for the individual GPs

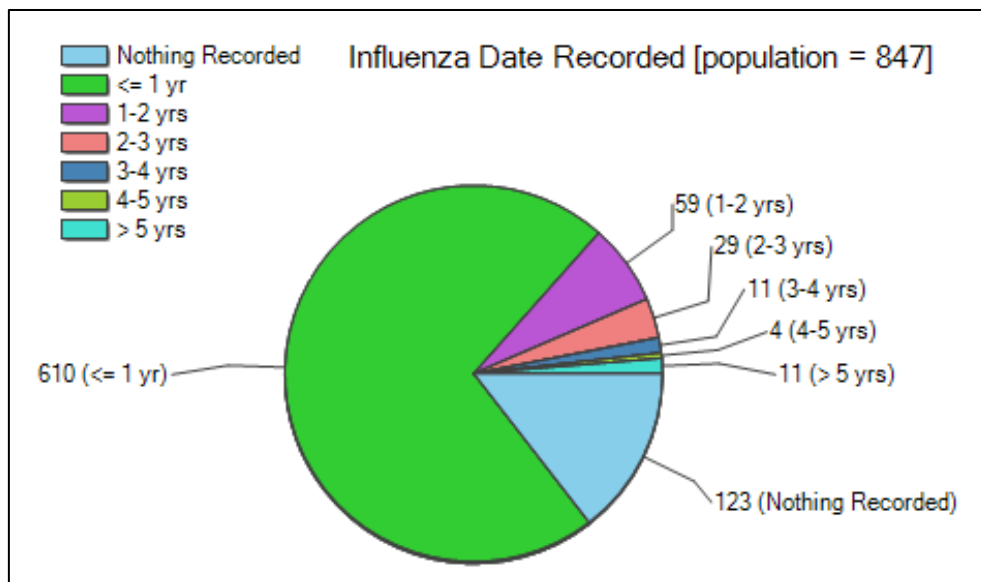
**Immunisations**

**Immunisation Tab** - reports for Influenza, Pneumococcal, HPV (Gardasil) and Pertussis.

1. **Gardasil** – this provides graphs on which patients have had 0, 1, 2 or 3 injections – this makes it easy to recall those patients who have not completed the course of 3 injections.



2. **Influenza, Pneumococcal** - display the most recent date the patient had the immunisation and the report can identify which patients have not yet been immunised.



3. **Pertussis** – works the same way as Influenza and Pneumococcal above.

**Standard reports**

This is a series of statistical reports where no identified patient information is given. Click on the **Summary Report Card**.

1. **NPPC report** – for use of those practices involved in the Collaboratives program with reports on diabetes and CHD
2. **NPI Report** – information required by divisions for their annual reporting on National Performance Indicators to the commonwealth.
  - a. **CDM2** – Chronic Disease Management - the number of patients within the division with diabetes – last recorded HbA1c within the last 12 months
  - b. **CDM3** – Chronic Disease Management – the number of patients within the division with CHD whose last blood pressure within the previous 12 months was less than 130/80
  - c. **PREV 4** – the number and proportion of female patients aged 20-69 whose patient record shows they have had a Pap smear during the previous 2 year period
3. **Summary Report Card** - this report provides an instant snapshot of practice data quality across most of the graphs provided. The report can be exported to Excel so the user can create a month by month set of figures if they choose. The user can also use the filters to target specific populations.

CAT Summary Report Card		Report Date: 3/9/2008 11:33			
Filtering By: Age >= 75					
* Active = 3 visits in last 2 years					
Measure	Total Population		Active Population *		
	Count	%	Count	%	
<b>Demographics</b>					
Total Population	847		783		
Date of Birth Not Recorded	0	0.00 %	0	0.00 %	
Gender Not Recorded	0	0.00 %	0	0.00 %	
ATSI Recorded	0	0.00 %	0	0.00 %	
DVA Recorded	164	19.36 %	152	19.41 %	
<b>Allergies</b>					
Nothing Recorded	43	5.08 %	16	2.04 %	
<b>Smoking</b>					
10+ and Nothing Recorded	83	9.80 %	42	5.36 %	
<b>Height and Weight Measures</b>					
Height Only Not Recorded	104	12.28 %	103	13.15 %	
Weight Only Not Recorded	1	0.12 %	1	0.13 %	
Neither Height or Weight Recorded	385	45.45 %	324	41.38 %	
BMI's Completed (Both Recorded)	357	42.15 %	355	45.34 %	
<b>Conditions</b>					
Undefined Diabetes	2	0.24 %	2	0.26 %	
Pregnancies Currently Open	0	0.00 %	0	0.00 %	
<b>HMR</b>					
Patients with >= 5 medications	685	80.87 %	653	83.40 %	
<b>Pap Smear Population</b>					
Eligible Females aged 18-70	0		0		
Pap Smear Not Recorded	0	0.00 %	0	0.00 %	
Pap Smear Date > 4 years ago	0	0.00 %	0	0.00 %	
Pap Smear Date 3-4 years ago	0	0.00 %	0	0.00 %	
Pap Smear Date 2-3 years ago	0	0.00 %	0	0.00 %	

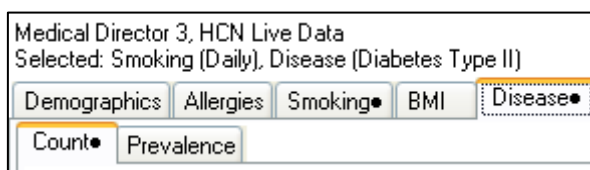
At Risk Population = Diabetes / CVD / 45-59 **					
Total At Risk Population	355		343		
<b>Lipids for At Risk</b>					
<b>(Diabetes/CVD/45-49)</b>					
Cholesterol Not Recorded	104	29.30 %	93	27.11 %	
HDL Not Recorded	179	50.42 %	168	48.98 %	
LDL Not Recorded	255	71.83 %	243	70.85 %	
Triglycerides Not Recorded	104	29.30 %	46	27.11 %	
<b>Creatinine for At Risk</b>					
<b>(Diabetes/CVD/45-49)</b>					
Creatinine Not Recorded	35	9.86 %	25	7.29 %	
Microalbumin Not Recorded	306	86.20 %	294	85.71 %	
<b>18 and Over Population</b>					
Total 18+ Population	847		783		
<b>BP (18 and over)</b>					
18+ and BP Not Recorded	114	13.46 %	67	8.56 %	
<b>Diabetes Population</b>					
Total Diabetes Population	145		141		
<b>HbA1c (Diabetes only)</b>					
Diabetes and HbA1c Not Recorded	11	7.59 %	8	5.67 %	
<b>Diabetes SIP (Diabetes only)</b>					
HbA1c > 12 mths or Not Recorded	39	26.90 %	36	25.53 %	
Eye Exam > 24 mths or Not Recorded	110	75.86 %	106	75.18 %	
BMI > 6 mths or Not Recorded	112	77.24 %	108	76.60 %	
BP > 6 mths or Not Recorded	35	24.14 %	32	47.52 %	
Foot Exam > 6 mths or Not Recorded	137	94.48 %	133	94.33 %	
Cholesterol > 12 mths or Not Recorded	48	33.10 %	45	65.96 %	
Triglycerides > 12 mths or Not Recorded	49	33.79 %	46	32.62 %	
HDL > 12 mths or Not Recorded	72	49.66 %	69	48.94 %	
Microalbuminuria > 12 mths or Not Recorded	118	81.38 %	114	80.85 %	
Smoking Not Recorded	9	6.21 %	5	3.55 %	

### Cross-Tabulation

This is very exciting!!! A cross tabulation report will provide the ability to find patients who appear on more than one graph - this will assist with the identification of target population risk groups.

**For example:** Create a list of diabetes Type II patients that are daily smokers and overweight or obese.

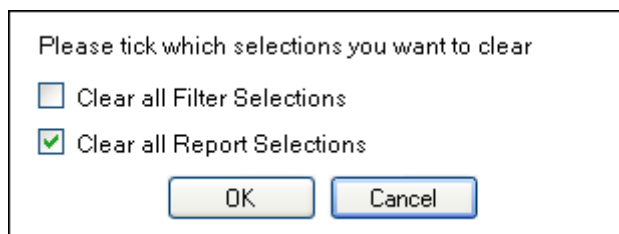
1. Click on the **Smoking** tab and select: **Daily smoker** from the pie chart
2. Click on the **Disease** tab and select **Diabetes Type II** from the bar chart – you will notice how the tabs are marked with a dot.



3. Click on the **BMI** tab and select the overweight, obese and morbidly obese chart legends
4. Click on the **Report** button (this is new – found near top left of screen) – this will list the patients that fit the criteria.
5. Add additional criteria if you wish, such as high blood pressure.
6. Print or save the report.

#### To clear the report:

Simply click on the **Clear Filters** button (top right of screen).



Ensure there is a tick in the **Clear all Report Selections** and then press **OK**.

## Part 3 – Additional activities using CAT

Understand your practice population. What is the disease prevalence in the practice population? Understand the “skill” or “interest” mix of your GPs and nurses. For example, target a specific area such as diabetes and do it well. Build up your skill areas and later, move to another area.

### Diabetes

1. **Finding patients “at risk” of developing diabetes**

View Filter

**Conditions:** Diabetes No

**Medications:** antidiabetic agents No

**Conditions:** Cardiovascular – Hypertension

[Recalculate]

**BMI:** overweight to morbidly obese. (Add age ranges 40-49 for item 713 – referral to a Lifestyle Modification Program)

2. **Managing diabetic patients**  
View Filter  
**Conditions:** Diabetes Yes  
**[Recalculate]**  
**HbA1c Tab** - identify those with no HbA1c recorded
3. **Find which of my diabetic patients are hypertensive**  
View Filter  
**Conditions:** Diabetes Yes  
**Conditions:** Cardiovascular >Hypertension
4. **Which diabetic patients have depression** – can be referred to a mental health program (e.g.. Better outcomes)  
View Filter  
**Conditions:** Mental Health >Depression  
**[Recalculate]**
5. **Which patients with CVD and/or Diabetes have BMI's greater than 30?**
6. **Identify diabetic patients on 5+ medicines and over 65** – can be referred for a HMR. Do the search by provider to direct the patients to their usual doctor.

#### Immunisations

1. **Gardasil** – find those patients who have not completed the 3 injection course. Identify those eligible women who have not commenced the course of injections  
**General Filter** – Female, 18-27, Active  
**[Recalculate]**  
Immunisation tab >Gardasil
2. **Fluvax** – identify those patients who haven't had their Fluvax this year  
**General Filter** – Age 65+, Active  
**[Recalculate]**  
Immunisation tab >Influenza  
'Nothing recorded' slice

#### Women's health

1. **Identify female patients over 18 who are eligible for a pap smear.** If too many to manage, break up into age groups. Designate a staff member (nurse) to contact patients.  
**General Filter:** Female, Age 20-69, Active  
**[Recalculate]**  
Pap Smear tab – Click 'No Pap Smear recorded' slice

#### Other

What else?



## Part 4 – Benchmarking

# Maintaining the interest

### Encourage regular extracts

This highlights the Continued Quality Improvement



1. Allergy Recorded	October 2007	March 3 2008	April 21 2008	August 26 2008
<b>Total population</b>	7127	6993	8019	7138
Nothing recorded	22.6%	14.8%	23.3%	11.1%
<b>Active population</b>	5439	5530	5558	5086
Nothing recorded	15.5%	8.7%	7.6%	4%
<b>2. Gender not recorded</b>				
<b>Total population</b>	84	0	0	0
<b>Active population</b>	26	0	0	0
<b>3. Smoking – nothing recorded</b>				
<b>Active population over 16 (Active (3x &gt; 2 years))</b>	33.8%	17.4%	14.2%	8.4%
<b>4. Recording of ATSI patients</b>				
<b>Total population</b>	3	3	3	3
<b>Active population</b>	2	3	3	3
<b>5. Diabetes Prevalence</b>				
<b>Total population</b>	4.5%	4.8%	4%	4%
<b>Active population</b>	5.8%	6.0%	5.6%	5.7%
<b>Undefined diabetic (active)</b>	1.3%	0.9%	0.3%	0.1%

# Pen Clinical Audit Tool

## Benchmarking



**PEN Clinical Audit Tool - CASE STUDY 3 - Composite Report using Clinical Audit - February 2008**  
 Total population = all patients  
 Active population = seen 3 times in last 2 years

1. Allergy Recorded	Practice 1	Practice 2	Practice 3	Practice 4	Practice 5	Practice 6	Practice 7	Practice 8	Your Practice
<b>Total population</b>	8347	2534	11159	7127	7902	6829	9446	13761	22739
Allergy recorded	8.0%	22.2%	8.9%	20.6%	5.8%	18.6%	14%	18.2%	12.3%
No Known Allergy recorded	32.1%	71.3%	26.0%	56.9%	24.6%	63%	58.1%	42%	49.0%
Nothing recorded	59.9%	6.5%	65.1%	22.6%	69.5%	8.4%	27.2%	39.7%	38.8%
<b>Active population</b>	2815	1881	4106	5439	1952	4090	3893	8083	9213
Allergy recorded	17.6%	27.2%	17.6%	24.2%	17.9%	24.7%	25.9%	25.4%	20.9%
No Known Allergy recorded	64.2%	72.2%	51.9%	60.3%	69.9%	70.8%	74.3%	57.3%	75.8%
Nothing recorded	18.3%	0.6%	30.4%	15.5%	12.2%	4.4%	3.8%	17.4%	3.2%
<b>2. Gender not recorded</b>									
<b>Total population</b>	37	1	78	84	1011	164	583	306	3175
<b>Active population</b>	0	1	0	26	6	4	66	5	37
<b>3. Smoking – nothing recorded</b>									
<b>Total population</b>	71%	12.5%	92.4%	42.8%	78.7%	70%	38.7%	82%	58.9%
<b>Active population</b>	37.6%	4.0%	84.4%	37%	30.4%	22.9%	17.1%	81%	26.5%
<b>Active population over 16 (Active (3x &gt; 2 years))</b>	26.0%	1.1%	82.4%	33.8%	19.0%	9.1%	4.6%	18.2%	10.4%
<b>4. Recording of ATSI patients</b>									
<b>Total population</b>	?	0	0	3	3	3	2	7	2
<b>Active population (Active (3x &gt; 2 years))</b>	5	0	0	2	0	3	2	6	2
<b>5. Diabetes Prevalence</b>									
<b>Total population</b>	3.2%	17.5%	1.1%	4.5%	2.24%	2.86%	1.8%	17.58%	2.4%
<b>Active population (Active (3x &gt; 2 years))</b>	6.8%	22.8%	3.0%	5.8%	7.22%	2.2%	3.8%	29.32	5.3%
<b>% Diabetes in postcode area</b>	5.6%	5.6%	5.7%	5.6%	5.6%	5.6%	5.6%	5.6%	5.6%

## **Part 5 – Feedback from practices**

Hi Noel,

Just wanted to thank you so much for the PEN analysis you recently provided. I can't tell you just how helpful this information is, not to mention how useful it is to the practice re accreditation. The de-identified comparisons with other clinics in the area is phenomenal! It really helps us identify where our weakness are; sometimes I feel like our efforts are aimless – well, not anymore! Can't wait to play around with it more.

Hi Noel,

Well we had our Accreditation visit today and thankfully all went exceptionally well, no extra work. YIPPY.

Just wanted to say thanks for the PEN audit tool. Did you know we have gone from 17.4% unrecorded allergies now to 6.0% and our smoking from 18.2% to 8.4%. It's good to be able to see the results from effort.

I will send you the new doctor update soon but I am a little over paperwork and I am going home early today for a good stiff drink.

Cheers

Dianne

Practice Manager

Hi Noel

Thank-you so much for introducing the PEN Clinical Audit Tool to us – it has been fantastic. Initially we used it to help “data cleanse” our clinical records, particularly with allergy and smoking status. We found that the presentation you gave on the use of the Pen Clinical Audit Tool for the care of our diabetic patients was also of great value as it fitted in with our emphasis on preventative medicine.

We now intend to analyse the clinical data by individual doctor and we will use the information as the basis for our next team meeting.

Colleen

Practice Manager