INCIDENTAL THYROID NODULES: Mode of Detection and Rate of Malignancy

OBJECTIVE
The aim of this study is to identify the most common methods in which thyroid nodules are detected and to determine whether or not there is a correlation with the mode of discovery and the rate of malignancy.

INTRODUCTION
Thyroid nodules are highly prevalent with an estimated 4-7% of the population having a palpable nodule and as high as 67% with nodules detectable on US. The rate of thyroid cancer diagnosis has more than doubled over the last decade with a concomitant increase in the number of nodule FNAs performed. Much of the increase in thyroid cancer detection has been attributed to the incidental discovery of nodules during imaging for other indications.

METHODS
We conducted a retrospective medical record review of 495 consecutive patients referred to our clinic for thyroid nodule evaluation during the year 2012. Patients were evaluated by one of two ECUO-certified thyroidologists and ATA guidelines were followed in determining the need for FNA.

DISCUSSION
The majority (60%) of nodules discovered were via incidental imaging. This high rate may be due to local practice patterns and demographics. The rate of cancer is similar in incidentally discovered nodules (5.0%) and non-incidentally discovered nodules (5.1%). This represents an overall relatively low rate of cancer in our group but within the published expected ranges. We included nonspecific symptoms and abnormal TFTs in the incidental group as the indication for US was not a clinically suspected nodule. This group had the lowest rate of malignancy among incidental nodules. In our population, US appears to be over-utilized for this uncertain indication. Among the incidentally discovered nodules, PET-detected nodules had the highest rate of malignancy, highlighting the importance of FNA of these cases.

CONCLUSION
There is a large pool of clinically silent nodules awaiting incidental detection. US triage is essential to decrease the number of FNAs and unnecessary surgery. Physician palpated nodules had lower incidence of cancer compared to incidentally discovered nodules. While not consistent, this has been observed in other studies. Incidental nodules need the same evaluation as palpable nodules.

FUTURE DIRECTIONS
We hope to combine our data with other geographic locations as well as diverse practice settings in order to determine if there is a consistent trend in the method of detection and rate of malignancy.

REFERENCES

Method of Detection | Number (and Percentage) of Patients with Nodules | Number (and Percentage) of Patients with Malignant Nodules | Ratio (and Percentage) of Malignant Nodules
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Physical Exam | 5 (9.6%) | 1/5 (20.0%) | 1/5 (20.0%)
Patient Detected | 7/122 (5.7%) | 1/7 (14.3%) | 1/7 (14.3%)
Incidental Imaging | 15 (60.0%) | 9/15 (60.0%) | 9/15 (60.0%)
US for Abnormal TFTs/Symptoms | 4 (16.0%) | 2/4 (50.0%) | 2/4 (50.0%)
Nuclear Uptake Scan | 3 (12.0%) | 1/3 (33.3%) | 1/3 (33.3%)
CT | 5 (20.0%) | 2/5 (40.0%) | 2/5 (40.0%)
Carotid Doppler | 2 (8.0%) | 1/2 (50.0%) | 1/2 (50.0%)
Screening US | 1 (4.0%) | 1/1 (100.0%) | 1/1 (100.0%)
MRI | 1 (4.0%) | 1/1 (100.0%) | 1/1 (100.0%)
PET scan | 1 (4.0%) | 1/1 (100.0%) | 1/1 (100.0%)
Other | 1 (4.0%) | 1/1 (100.0%) | 1/1 (100.0%)
Total | 122 (24.6%) | 15 (12.4%) | 15 (12.4%)

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Incidental Imaging | 9/15 (60.0%)
US for Abnormal TFTs/Symptoms | 2/4 (50.0%)
CT | 2/5 (40.0%)
Carotid Doppler | 1/2 (50.0%)
Screening US | 1/1 (100.0%)
MRI | 1/1 (100.0%)
PET scan | 1/1 (100.0%)
Other | 1/1 (100.0%)
Total | 25