OBJECTIVES
The aims of this study were to:
1. Examine the risk of a second cancer (SC) in testicular cancer (TC) patients treated with cisplatin; and
2. To describe differences in the risk of a SC following one or more than one line of treatment (LOT).

METHODS
TC patients were identified in a US-based EMR network. Patients selected were males ≥16 years of age with no other recorded neoplasm prior to the diagnosis of TC. Patients diagnosed with a SC or deceased in the year following the first TC were excluded. For aim one, patients first treated with cisplatin therapy following the first TC diagnosis were compared to patients only treated with surgery, and separately to patients treated with chemotherapy and radiation (CT/RT). For aim two, TC patients with a single LOT were compared to patients with 2 LOTs. All comparisons were adjusted for baseline confounders using a 1:1 matched propensity score model. Risk ratios, 95% confidence intervals, and Kaplan-Meier survival curves were calculated. Patient characteristics were defined by ICD, CPT, LOINC, and RxNorm terminology.

RESULTS
For aim one, the mean age at index was 31.3±6.8 (N=719), 35.2±11.6 (N=665), and 41.8±14.4 (N=97) for cisplatin-, surgery-, and CT/RT-treated patients. For aim two, the mean age at index was 35.3±12.4 (N=1,221) and 38.2±13.5 (N=1,136) for patients with one and two LOTs. The risk of SC was higher in cisplatin-treated than surgery patients [RR=1.70 (1.55,1.87)] and lower in cisplatin-treated patients than CT/RT-treated patients [RR=0.82 (0.73,0.94)] and in patients with one LOT than with 2 LOTs [RR=0.84 (0.75,0.93)]. Comparable results were seen in the crude and matched analyses.

CONCLUSIONS
This analysis found that patients treated with cisplatin-based therapy were more likely to develop a SC than those who underwent surgery. Multiple LOTs did not appear to reduce the risk of developing a SC. These results align with other findings in published literature.