

Precious Metal Security & Refining

A recent discussion topic on the Internet Dental forum involved a lab that had experienced theft of precious metal in excess of \$170,000 over a several year period. OUCH!

While thefts of this magnitude don't occur too often (Thankfully) precious metal theft is a fairly common problem for Dental Laboratories. Generally it's not big quantities in one shot. Employees or visitors usually don't crack the safe & run with the contents. Labs tend to be vulnerable to the theft of small amounts over medium to long time periods. An ingot here a button there, a cut off sprue every day, pretty soon can add up to real money.

Dental Labs have vulnerabilities in three areas: Administration (buying, receiving & storing precious metals); Operations (casting, finishing, polishing in production); and Refining (scrapping buttons, storage, selecting a refiner). I'll make three suggestions for each area.

Administration.

1. The number one thing you can do here is to have multiple people involved in the purchasing/receiving process. Specifically one individual should order the gold and a different person should receive it, count it, approve the bill for payment, and store it. Having 3 people split these responsibilities is even better. Multiple person involvement means staff has to collude in order to steal alloy. While not totally impossible it is much less likely. Consider how one person could order 10 oz of alloy, approve & pay for 10 oz but only receive 9 oz into your system while putting the other oz into their pocket.
2. Have one person responsible for storing the material and issuing it to the person doing the casting. A log is very helpful to track the amount of precious metals issued, the amount cast, and the amount of work loss. Reconcile the usage log with purchases on a monthly basis. Making employees sign metal out and take responsibility for it sends a good message regarding how serious management takes the security of Precious metals. I also suggest buying alloys in smaller quantities more frequently in order to eliminate the increased inventory less frequent larger purchases create.
3. Set your billing system up to bill precious metals to clients as a separate line item on the invoice. Do this if you include alloy in your unit price because it will allow you to track the quantity going out to clients. Separate line item billing results in a line on your P&L for alloy sales to the clients,

which you can compare to the expense line for alloys. Since you should be marking up alloys as a profit center the sales line should be higher than the expense line depending on your mark up. This ratio should remain fairly constant from month to month and provide a red flag for possible losses. If you show sales less than purchases and no increase in inventory, Houston, you have a problem.

Operations.

1. Store new alloy material in a secure place preferably in a part of the lab that is open to view and limit the number of staff who have access. I've seen too many cases where 5 or 6 thousand dollars worth of gold is in an unlocked drawer.
2. Casting, Finishing, and Polishing procedures all will generate "work loss". Establish standard work loss parameters for each operation. Pay particular attention to how closely sprues are cut off. Clean the casting well or machine regularly and put the contents in a scrap collection container. A manager or supervisor should decide when a button or crown is scrap & when it is reusable.
3. Invest in good vacuum/suction equipment for each workstation. Train the technicians to grind into the vacuum and be sure the systems are emptied/cleaned regularly. Your lab will be cleaner and your scrap return will be larger! Carpet around these areas will also trap fine dust and particles that escape the dust collectors

Refining

1. Refining is a matter of trust. You give the refiner a bag of "dirt" and they give you money. In addition they decide how much to give you! Avoid at all costs refiners who come to your door and offer to buy your scrap for immediate cash with out an assay. Choose a reputable refiner, who purchases all the major precious metal elements (Gold, Platinum, Palladium and Silver), and will provide a complete assay and purchase report. For the best return, sort your scrap by type (grindings, sweeps, crucibles, solid metallic etc). Record & log the gross weight being sent or picked up.
2. Store refining collection containers in a secure location. This is NOT waste or trash, and if it's left out unsecured it is very easy for someone walking by to take a button or piece of casing flash. After all it's just trash right? Collected scrap waiting to be sent to the refiner is most vulnerable to loss because no one knows what is in it or exactly

- how much is there. I once was involved in a case where an employee substituted base metal buttons for Gold alloy buttons in the scrap bucket. The lab found out when the analysis of their next scrap return showed 28% nickel. Send in your scrap to your refiner frequently (2 to 3 times per year for medium size Labs) because it reduces your risk of loss and allows you to “market average” the precious metal prices.
3. Save & review the records & reports provided by the refiner. Comparison of the weights sent to the ounces of Gold, Platinum & Palladium found can allow you to spot problems. If you send approximately the same gross weight every time, and have not changed alloys or significantly changed procedures the refiner should find a similar % of each element in the return. Wide variations need to be questioned & investigated both with the refiner and internally in the Lab.

The vast majority of employees are honest, but good procedures and safeguards remove temptation and help protect the Lab from the bad apples that, unfortunately, are out there.