Table 1

Know your instrument better than you know your co-workers

1. Learn the LC flow path.
2. Practice cutting the PEEK tubing that connects LC components and making good connections with PEEK and stainless steel tubing/fittings. Be able to recognize a good versus a bad tubing cut and connection.
3. Know how to find the instrument method parameters stored with every acquired LC-MS/MS data file and archive an example when each assay is validated.
4. Every autosampler model is somewhat different. Learn how your injector introduces samples and is washed to prevent carryover. Know the sample loop size.
5. Archive screen shots of normal LC pressure traces.
6. Archive screen shots of normal baseline for each method.
7. Create and archive composite extracted ion chromatogram (XIC) overlays with a fixed Y scale for all MRMs in a low calibrator with good chromatography. This documents normal retention times (Rt), peak shapes, resolution and relative heights.
8. As a baseline for future reference record the MS/MS response on more than one occasion from post-column infusion of pure standards in methanol. Write a protocol including the instrument parameters used for infusion.
9. Archive photographs of the MS/MS ion source and the cone, curtain plate or skimmer (differs by vendor - the first heated MS/MS surface encountered by volatilized samples) when clean. Some discoloration of this metal surface is expected, but deposition of excess salts and carbonized matrix may indicate errors in maintenance, divert valve editing, reagent or sample preparation.