

SAFER PRACTICE NOTICE

Issue:

During critical situations, the Anti-Siphon Valve (ASV) on IV tubing has caused significant challenges when clinicians are unable to remove the ASV to run lifesaving infusions by gravity. Clinicians across Manitoba have reported serious patient safety occurrences (e.g. clinical deterioration and delays in critical therapy), prompting a safety review and the decision to discontinue the use of ASVs.

Key Messages:

- Despite initial understanding, the ASV was not designed to prevent microbubble formation
- All smart pumps come with ability to prime by pump, the requirement to change practice and prime by pump was due to the use of the ASV on IV tubing
- Inverting the needless access ports while priming and tapping the air forward is the most important step in reducing air in line at initiation of infusion
- Provincial clinical coordination and communication have improved understanding and management of the pump and IV tubing related issues
- Continuous discussion and adaptation of safe practices are crucial based on available information and experience

About the Anti-Siphon Valve

In response to a 2011 recall of B Braun Infusomat pumps due to misloading issues leading to fluid free flow into patients, the Anti-Siphon Valve (ASV) was introduced as a protective measure. Although designed to prevent fluid flow during tubing manipulation, there is no evidence that it prevents microbubble formation above the level of the pump.

Summary of Facts

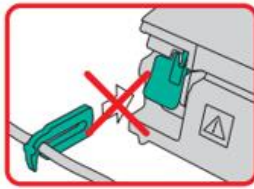
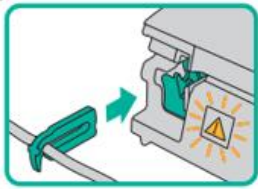
- ASVs are meant to prevent fluid free flow but have led to safety events
- No safety events have been reported due to the **discontinuation** of the ASV in some Health Authorities
- There is no scientific evidence supporting ASV's ability to prevent microbubble formation or air in line alarms

Recommended Actions:

- Remove and discard the ASV upon opening the IV tubing package. Cover the end of the tubing with a blue cap as a tip protector against contaminants. New IV sets without ASVs are being purchased and we will use up current inventory while waiting for the new sets
- Prime by pump or gravity, the option you choose may be one you wish to reflect upon as a team

Discontinuing the use of the Anti-Siphon Valve

Practice Reminder



- The roller clamp is the primary method of preventing free flow. Only unclamp the roller clamp when starting or restarting the IV infusion
- Fill drip chamber 2/3 full, in order to be able to observe the drip flow
- For large volume IV tubing, the removal of air from needleless access ports and tubing glue joints is mechanical (invert the ports and tap the air forward)
- **Yellow triangle** light should be flashing prior to loading tubing and when the light goes off, this indicates the pump is now occluding the IV until infusion is started
- Check the package for the priming volume. Additional priming volume may be necessary with the increase in tubing volume from 23 ml to 26ml. Repeat priming as needed and press the **Stop Button** once fluid reaches the end of the tubing

Note: Upcoming changes to the IV tubing sets will have a change in appearance to the roller clamp and the tubing will have a slight yellow hue in coloring. Introduction into our inventory will be staggered.

Conclusion:

Due to the serious nature of the safety concerns, many levels of Clinical Leadership have reviewed the findings and the decision was escalated. The Provincial Clinical Leadership Team, unanimously voted to discontinue ASV use on IV sets province-wide. The Provincial Nursing Leadership Council has reviewed the decision and approved. Health Authorities are tasked with promptly developing a clinical action plan to implement this Safer Practice Notice.

For more information on this Safer Practice Notice please contact your clinical leadership.

Safer Practice Notices are issued by the Provincial Patient Safety Team in collaboration with Regional Clinical Practice Leads. The purpose of the notice is to communicate recommended changes as a result of events that have been reported and investigated.

