Suggestions for TL

There is no simple answer to your question of what type of pad could/should be used in addition to the factory pad. There are several possibilities for improving the impact performance of ice hockey helmets. The cheapest and simplest way to add extra padding is go to goalie monkey, http://www.goaliemonkey.com/ar-goalie-mask-foam-padding.html and place this over the existing padding in the helmet. This will offer a little extra protection. However since your son has had 5 concussions and is now predisposed to them I would like to offer some other possibilities.

1. If he must wear a Messier/Cascade M11 helmet purchase a Cascade Pro 7 Lacrosse helmet. Replace all the 5/8" 7 pads in the M11 with the 3/4" 7 pads from the Pro 7. Figure 1. The cost will be about $210 ~ $225 for the Pro 7 helmet. This will void the HECC certification of the helmet and it cannot be used for play under USA Hockey rules.
2. Have a custom composite inner liner made for the M11 helmet to make it stiffer and use it in conjunction with the 3/4" 7 pads. Cost est $200 This will void the HECC certification of the helmet and it cannot be used for play under USA Hockey rules. The combination of 1 & 2 should get the Severity Index to < 1200 from a 17.94 fps impact on a rubber anvil. This would have to be tested to verify.
3. Have a custom composite outer liner made for a 23mm EPP liner + VN, and insert it into a HECC certified shell. Figure 2. This should get the SI to <1200 from a 20.34 fps impact on a steel anvil. This will have to tested when installed in a ice hockey shell due to the poor shell geometry of hockey helmets. Due to scheduling this option will not be able to be tested until July 2011. Cost est $300 ~ $450

These impact speeds are much greater than the current ice hockey helmet test impact speeds of 14.76 fps and they do not guarantee your son will not suffer from another concussion. They may not protect at impacts speeds above the test levels. The probability of your son suffering another concussion even with option 3 with an impact at or above 20.34 fps is estimated to be a 100% probability of a AIS2 concussion, 95% probability of a AIS3 concussion, and a 10% probability of a AIS4 concussion. My only other suggestion is if or when your son is cleared to return to play si that he play in the IIHL which would allow the much safer option 3 helmet.

Figure 1

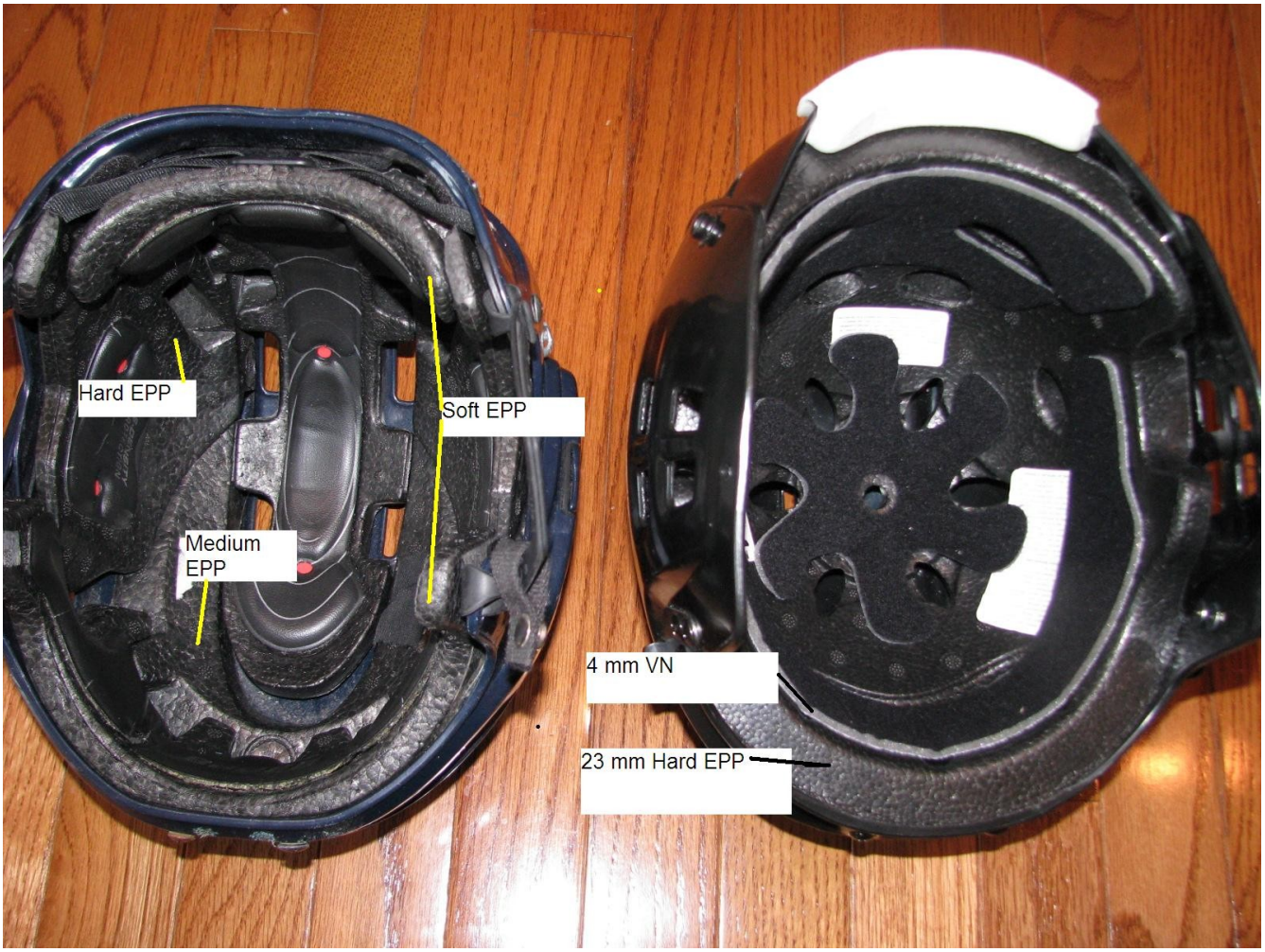

Figure 2