1. **Why this paper?** To prevent under-dosing CDH and CDS when using Protocols.

2. **MMS Protocols** were designed for use with MMS1, not CDH or CDS which need different dosing.

3. **Theory**: 1 drop of MMS contains 6.7mg of chlorine dioxide (ClO2) when 24 drops = 1ml. 1 drop = 0.042 ml

4. **Fact**: 1 drop of MMS is activated about 7% externally when combined with 50% citric acid 1-to-1 for 20 to 30 seconds. The remaining MMS in MMS1 should fully activate in a stomach with normal gastric acids.

5. **Fact**: Many people have normal gastric acids to activate residual MMS in MMS1 & CDH; older people less.

6. **CDH Recipes** were designed so each milliliter of CDH will be made from 1 drop of MMS. **NOTE**: only applies to McRae-Lackney recipes, not to any other recipes.

7. **1ml of CDH** and a 1 drop dose of MMS1 are both made from 1 drop of MMS.

8. **1ml of CDH** and a 1 drop dose of MMS1 both have the potential to produce 6.7mg of ClO2 when ingested in a stomach with adequate gastric acid.

9. **CDH4%** is about 50% activated externally and **CDH2%** about 25% activated. Fridge life 2 weeks/2 months.

10. If there is little or no stomach gastric acid present, CDH will provide more ClO2 than MMS1.

11. **CDS** is fully activated externally and can not increase nor decrease in ClO2 content when in a stomach.

12. **A recent newsletter** from Jim Humble said the maximum amounts of CDH and CDS to use with Protocol 1000 were 3ml and 6ml respectively. Protocol 1000 limits MMS1 to 3 drops per hour.

13. Therefore one can conclude that a 3 drop dose of MMS1, 3ml of CDH & 6ml of CDS can deliver the same amounts of ClO2 if adequate stomach acids are present for MMS1 & CDH. **Math & photos** prove this.

14. If no stomach acids are present, then CDS can provide more ClO2 than MMS1 or CDH.

15. **Between zero and normal stomach acids**, varying amounts of additional ClO2 can be provided by MMS1 and CDH.

16. **MMS Tablets** would be a good choice for someone who has little or no gastric acids as they contain an activator and will fully activate in plain water.

17. **A little math** will be necessary to show how much ClO2 is in 6ml of 3000ppm CDS.

18. **Volume** of SCS (liters) x **ClO2 Concentration** (ppm) = **Dose** (mg of ClO2) (0.006 x 3000 = 18)

19. **6ml of CDS** contains 18mg of ClO2.

20. **3 drop dose of MMS1** provides 20.1mg of ClO2 if fully activated. (6.7mg/drop of MMS) (3 x 6.7 = 20.1)

21. **3ml of CDH** provides 20.1mg of ClO2 if fully activated. (6.7mg/drop of MMS used to make each ml of CDH)

22. It is not possible to measure the total amount of ClO2 that MMS1 or CDH could produce in a stomach, but the maximum possible amounts of ClO2 in milligrams can be calculated by multiplying 6.7 x MMS drops.

23. **Because** stomach acid availability is unknown when ingesting MMS1 or CDH, the amount of ClO2 that may be produced is unknown. Therefore, knowing the external ClO2 concentration isn't useful information.

*updated 1 July 2016*