

### Introduction

Drug Trafficking Organizations (DTOs) have continued to adapt and innovate while exploiting new advanced technologies, including Information and Communication technologies (ICT) in order to benefit the various stages of their drug trafficking operations (growing/cultivating, manufacturing, trafficking/transporting, wholesale/retail) as well as for communication purposes.

### Aims and Methods

Based on systematic review of the literature, newspaper articles, Darknet sites and court files, this research studies how DTOs innovate and adapt to challenges in an effort to ensure *continuity*, and more specifically, how technology and technological advancements have facilitated this process of adaptation and have improved the work of already established, traditional DTOs.

### Communication and ICT

DTOs have used ICT, and especially social media, to communicate, spread fear, recruit new members and glorify their lifestyle, and advertise their drugs.



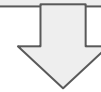
Semi-submersible vessel with 7 tons of cocaine near Costa Rica (Gilbert 2008)



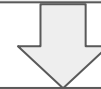
Vertical farming by dispensary Medmen, 2016

### Stages

**Growing and Cultivating** - Colombian cartels have used gene sequencing in order to genetically alter coca plants to produce more leaves, and to be more resistant to the pesticide glyphosate (BBC 2004; Jha 2004).



**Production and manufacturing** - Heroin and fentanyl milling operations exist throughout the United States. Typically this occurs in residential homes, where wholesale quantities of heroin and/or fentanyl are broken down into smaller quantities for further distribution.



**Trafficking / Transporting** - Chemical masking is a technique that DTOs have used in order to evade detection when trafficking illegal drugs (Suarez 2018); Submarines have been altered to have upper lead shielding, to dodge radars, etc. (Ramirez & Bunker 2015).



**Wholesale and retail** - Social media apps such as Instagram and Facebook allow users to buy illegal drugs, while disclosing little information, and without the use of Darknet markets (Nichols 2020).

### Conclusions/Implications

Legitimate companies have developed ways to produce drugs for medicinal purposes, but DTOs can/do utilize these same methods (e.g., vertical farming, 3d printing, morphine producing yeast, etc). This research advocates for a public health focus, as opposed to a law enforcement focus, as DTOs are learning organizations and will continue to adapt their MO in order to avoid detection, and continue to profit.

### Sources

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