

Cannabis for medicinal – purposes



THE ISRAELI PROGRAM



history



- The first approval of cannabis for medical use was in 1992 due to a court decision.
- Up to 2004 there were only 64 requests. At the end of July 2002 Israel has 9000 active permits.



Indications

Medical Grade Cannabis is a last resort treatment

- Chronic Pain Due to a Proven Organic Etiology
- Orphan Diseases
- HIV patients with loss of body weight>10% or CD4<400
- Inflammatory Bowel Disease (as opposed to Irritable Bowel Syndrome)
- Multiple Sclerosis
- Parkinson's Disease
- Malignant Tumor in Various Stages of the Disease

Dangerous Side Effects



- Psychotic episodes
- Panic attacks
- Generalized Anxiety Disorder
- Amotivational Disorder



Physician Perspective



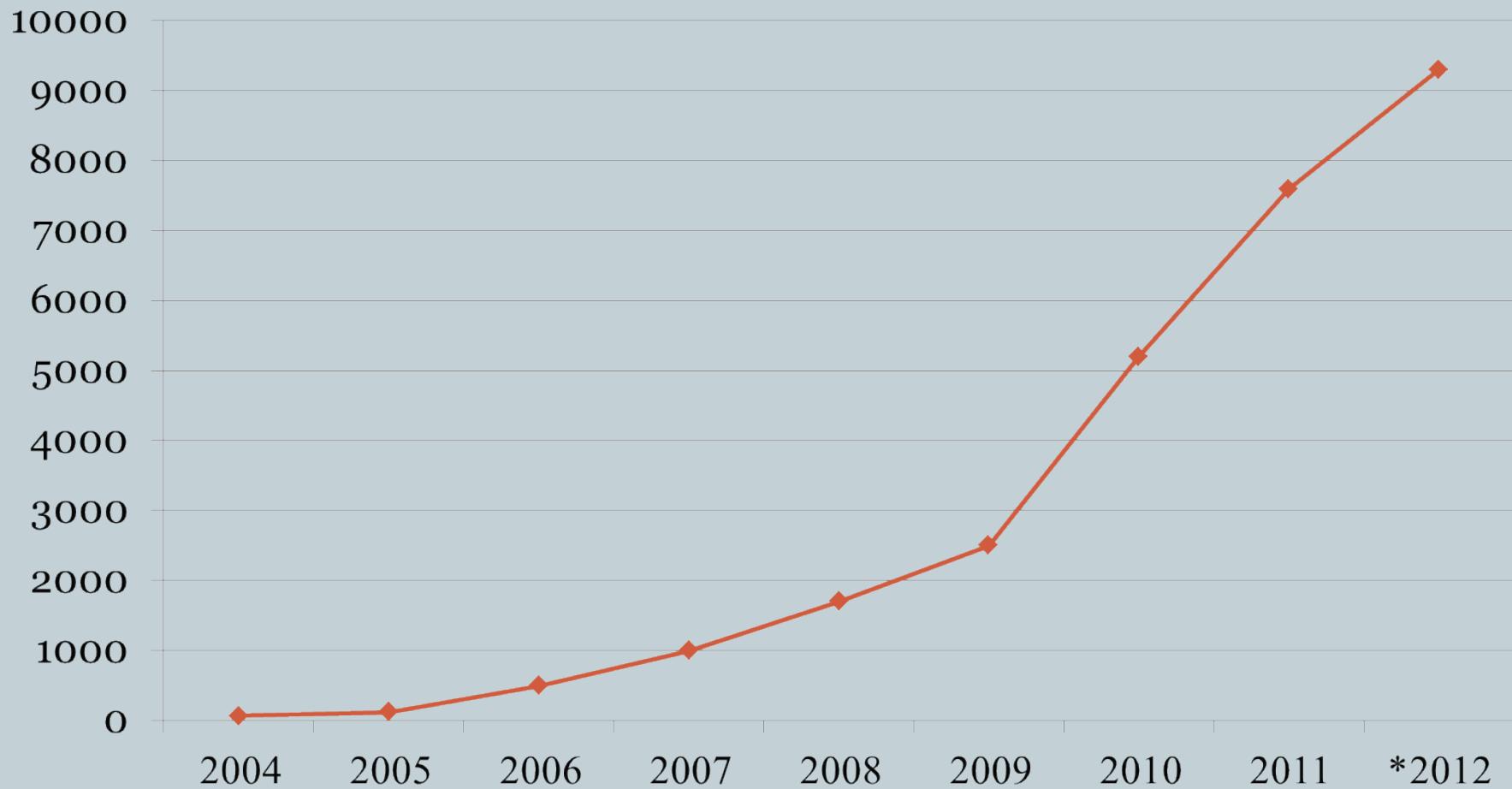
- On one side:
 - A lot of patients benefit greatly from the use.
 - Another medicine in the pharmacopeia .
 - Higher safety than opioids (no death due to OD).
- On the other side:
 - Mainly in chronic pain Clinique – fear of becoming a cannabis Clinique.

Patient Perspective



- Cannabis is better tolerated than opioids.
- No risk of Over Dose and Death.
- A different mechanism of work – can help where other medications did not.
- A social trend.
- What strain to use? Who decides?
- Should self growing be allowed?

Expansion of permits



Mechanism of action

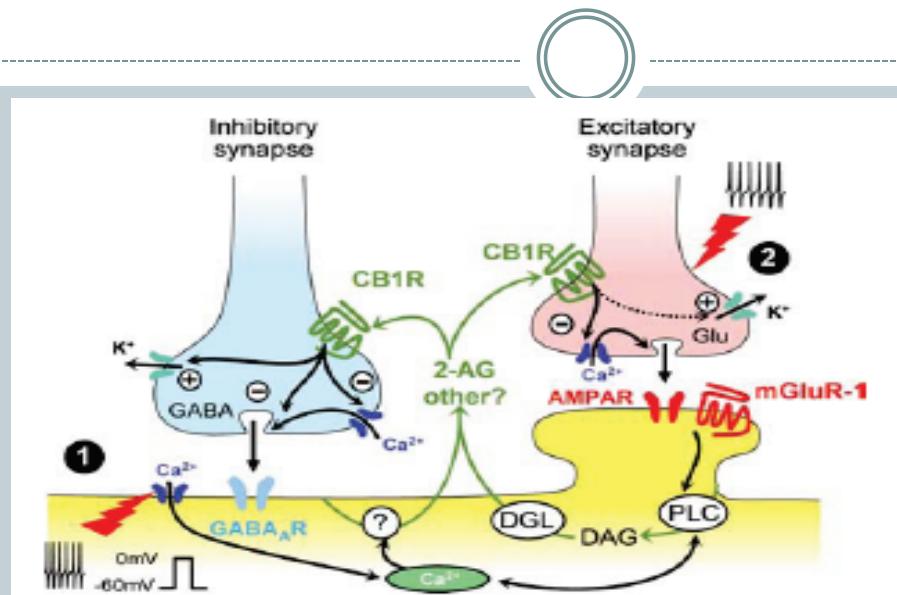


Figure 2

Schematic summary of eCB-STD. Two major pathways produce eCBs during STD. The first is triggered by Ca^{2+} influx through voltage-gated channels consequent to postsynaptic step depolarization or action potentials [1]. This Ca^{2+} influx may then be amplified by recruitment of Ca^{2+} release from intracellular stores. How Ca^{2+} promotes eCB release remains unknown. The second pathway is triggered by brief tetanic stimulation of excitatory afferents and group I mGluR activation [2]. AMPAR activation may also contribute to this mechanism. Phospholipase C (PLC) and diacylglycerol lipase (DGL) are required downstream of mGluR, implicating 2-AG in this pathway. Although each pathway can be triggered independently of the other, some degree of cooperativity may exist; for example, increased intracellular Ca^{2+} greatly enhances mGluR-induced (mGlu-I) PLC activity. The newly synthesized eCB traverses the synaptic cleft and binds to presynaptic CB1Rs, resulting in Ca^{2+} channel inhibition, a direct effect on the vesicle release machinery, and/or K⁺ channel activation.

Cultivation of Cannabis



- Standardization as a problem
- Agricultural issues
- Leakage through suppliers
- Managed competition ?

UN convention



SINGLE CONVENTION ON NARCOTIC DRUGS, 1961

Final Act of the United Nations Conference for the Adoption of a Single Convention on Narcotic Drugs

Article 23

NATIONAL OPIUM AGENCIES

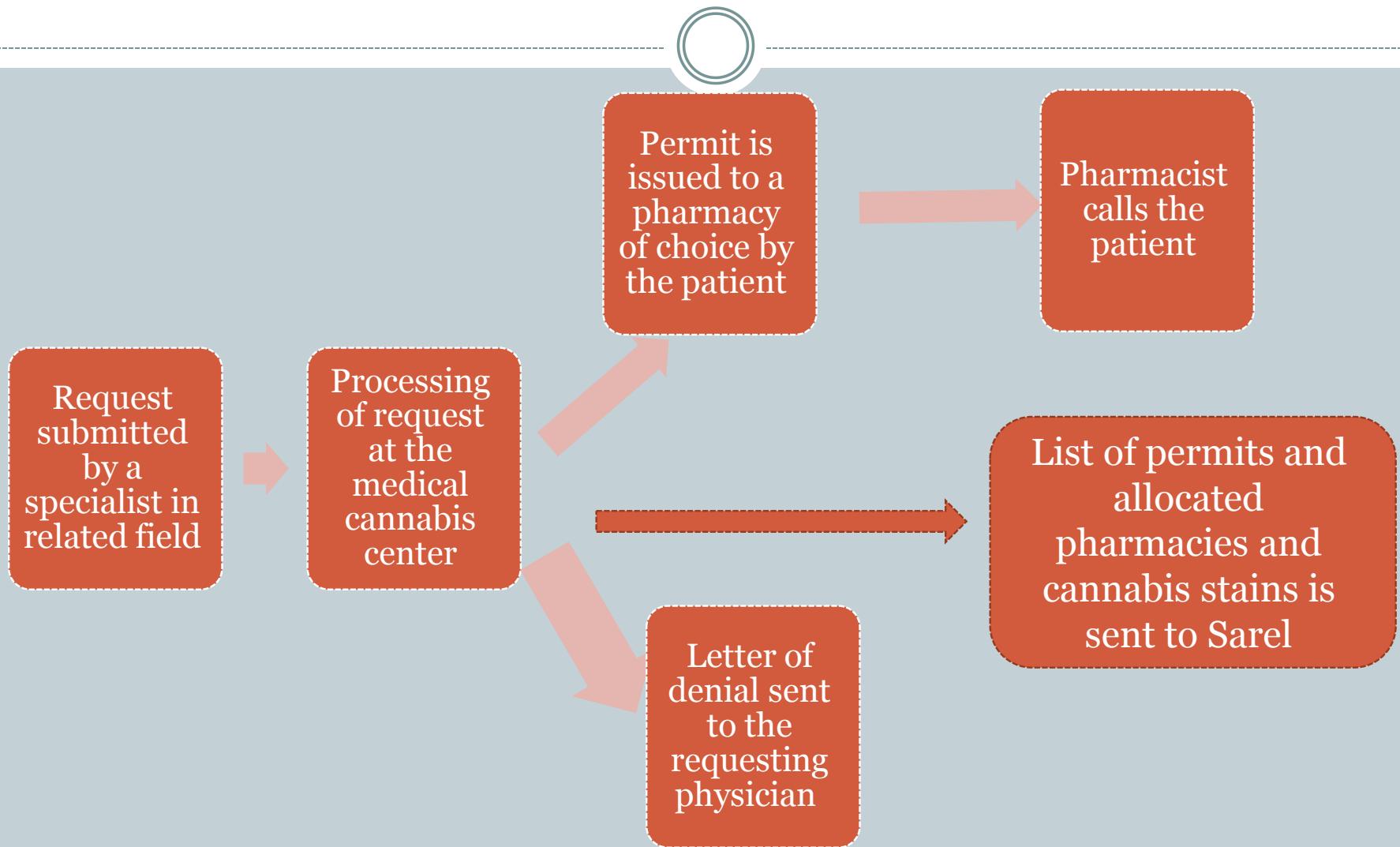
1. A Party that permits the cultivation of the opium poppy for the production of opium shall establish, if it has not already done so, and maintain, one or more government agencies (hereafter in this article referred to as the Agency) to carry out the functions required under this article.
2. Each such Party shall apply the following provisions to the cultivation of the opium poppy for the production of opium and to opium:
 - a) The Agency shall designate the areas in which, and the plots of land on which, cultivation of the opium poppy for the purpose of producing opium shall be permitted.
 - b) Only cultivators licensed by the Agency shall be authorized to engage in such cultivation.
 - c) Each licence shall specify the extent of the land on which the cultivation is permitted.
 - d) All cultivators of the opium poppy shall be required to deliver their total crops of opium to the Agency. The Agency shall purchase and take physical possession of such crops as soon as possible, but not later than four months after the end of the harvest.
 - e) The Agency shall, in respect of opium, have the exclusive right of importing, exporting, wholesale trading and maintaining stocks other than those held by manufacturers of opium alkaloids, medicinal opium or opium preparations. Parties need not extend this exclusive right to medicinal opium and opium preparations.

Article 28

CONTROL OF CANNABIS

1. If a Party permits the cultivation of the cannabis plant for the production of cannabis or cannabis resin, it shall apply thereto the system of controls as provided in article 23 respecting the control of the opium poppy.
2. This Convention shall not apply to the cultivation of the cannabis plant exclusively for industrial purposes (fibre and seed) or horticultural purposes.
3. The Parties shall adopt such measures as may be necessary to prevent the misuse of, and illicit traffic in, the leaves of the cannabis plant.

Patient Related Flow Chart



Logistic Flow Chart



Growers are chosen
by tender

Sarel purchases all
product from
growers

Sarel supplies the
pharmacies
according to list
provided by the
medical cannabis
center

Distribution of Cannabis



- Special dispensaries?
- Pharmacies?
- Home delivery

Public Health Aspects



- Easier access to recreational use.
- Regulation and Quality Control ensure safety of Product.
- Farms as an Environmental hazard – smell?

Security Aspects



- Fear of criminal involvement.
- Farms as temptation points (mainly adolescents).
- Security measure at the farm
- Security of shipping and transportation.

Instruction and Training



- Extremely important as Medical use of Cannabis is different than recreational use.
- Lack of knowledge among clinicians.
- Medication and “the wink” – problem of adverse use.
- Nurses as major source of instructors.

Future Trends



- Sarel – the long arm of the agency.
- Sarel will buy all the crop (through tenders among growers).
- Distribution to pharmacies already licensed to handle control substances.
- Option of home delivery (additional fee).
- Option of trial and error to try and decide which strain (among different growers) gives the best result to the specific patient.